ISSN 2451-7755

Jessica O´Reilly ∞ Susan Barr

Ricardo Roura ∞ Nengye Liu ∞ Chen Jiliang

Antarctic Affairs

© Daisy Gilardini

Volume VIII - 2021

Antarctic Affairs

Antarctic Affairs is the academic magazine of the Antarctic and Southern Ocean Coalition (ASOC) and Agenda Antártica, which aims to publish and disseminate the most prominent and influential research in relation to Antarctica. The journal publishes articles, reviews and official documents in English and Spanish. The purpose of this publication is also to stimulate research that contributes to environmental protection of Antarctica and the Southern Ocean.

The ideas expressed in the texts published here are the sole responsibility of their authors and do not necessarily reflect the viewpoint of ntarctic Affairs. The Editorial Board invites all interested persons to submit their contributions to this forum, but reserves the right to publish the submissions received. Reproduction of the contents is allowed, provided that the source is mentioned and two copies are sent to the Editorial Board.

AGENDA ANTÁRTICA

Agenda Antártica is a non-governmental organization based in Buenos Aires that works for environmental conservation of the Antarctic continent and the Southern Ocean, the promotion of research in Antarctica and the preservation of peace in the southern region. Agenda Antártica was founded in 2012 and is constantly developing research, outreach and advocacy at national, regional and international forums through publications, seminars, social networking and promotion of telecommunications. For more information about Agenda Antártica, visit: www.agendaantartica.org

ANTARCTIC AND SOUTHERN OCEAN COALITION (ASOC)

The Antarctic and Southern Ocean Coalition (ASOC) was founded in 1978 by five environmental organizations in the US, UK, Australia and New Zealand, promoting a World Park vision for protecting Antarctica and the Southern Ocean. ASOC has worked since 1978 to ensure that the Antarctic Continent, its surrounding islands and the great Southern Ocean survive as the world's last unspoiled wilderness, a global commons for the heritage of future generations. ASOC is an invited observer to the meetings of the Antarctic Treaty and CCAMLR. The Secretariat of the ASOC, which includes 21 organizations in 11 countries, is based in Washington, D.C. For more information about ASOC, visit: www.asoc.org

Cover Photo *Photographer: Daisy Gilardini. Title: Gentoo Penguin - Antarctica.*

Antarctic Affairs

Bilingual publication

Volume VIII

2021 / Year VII

Editorial Agenda Antártica / ASOC

Managing editors: Juan José Lucci - Rodolfo Werner

Graphic Designer: María Belén Alonso

ISSN 2451-7755

Editorial Board of the Journal

Claire Christian

Juan José Lucci

Ricardo Roura

Rodolfo Werner

Ryan Dolan

Antarctic Affairs

Agenda Antártica
Antarctic and Southern Ocean Coalition (ASOC)
Argentine Office: Laprida 2150 7º "A", Buenos Aires, Argentina (1425)
USA Office: 1320 19th St. NW, Fifth Floor, Washington, DC 20036

Antarctic Affairs

Table of contents

Message from the Managing Editor

Dear Readers:

Welcome to the eighth volume of Antarctic Affairs. This edition is especially dedicated to reflecting on the 30th anniversary of the approval of the Protocol on Environmental Protection to the Antarctic Treaty, or better known as the Madrid Protocol, approved on October 4, 1991. The Madrid Protocol marked, without doubt, a before and after when it comes to the protection of the Antarctic environment, from the ban on mining to the withdrawal of polar dogs. The articles published in this volume attempt to illustrate, through different perspectives and viewpoints, issues of current relevance to the Protocol, such as the discussion of climate change in Antarctica, and the role of China in protecting the Antarctic environment.

Ricardo Roura contributes with the opening article in this edition. Dr. Roura focuses on some of the key legal and practical aspects of the implementation of the Protocol for the past three decades. The author analyzes the continuity and change prevalent in Antarctica and its governance regime. He also discusses the prospects of the Protocol and the challenges that Antarctic Treaty actors will face in the next decade to reaffirm the grand vision of the Protocol.

Jessica O'Relly is the author of the second article. Dr. O'Relly looks at how climate talks have progressed inside the Antarctic Treaty System. The article discusses the inclusion of greenhouse gas emissions and climate impacts in environmental impact assessment, the Madrid Protocol's instruments for strengthening climate resilience, transparent reporting, and the alignment of Antarctic activities to the Paris Agreement.

The third paper of this volume is by Susan Barr. She examines the perception and use of the term cultural heritage in the Antarctic environment both in the global context and in relation to Antarctica. The author explores the many dimensions of tangible and intangible heritage, as well as their relationship to the Antarctic Treaty Protocol on Environmental Protection.

Jiliang Chen and Nengye Liu contribute with the last article. Their paper reviews China's participation in the Madrid Protocol, its political rhetoric, and its interest in natural resources to comprehend the basis of China's perspective and rationale of its more assertive stance.

Finally, I would like to express my gratitude to all the authors, translators, and Editorial Board members who contributed to the production of this edition of Antarctic Affairs.

Juan José Lucci

ASOC Prologue

The 1991 Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol) has been one of the most important achievements in Antarctic environmental protection since the Antarctic Treaty. It represents a key legal instrument to guide the management of human activities in Antarctica.

Thirty years after the entry into force of the Madrid Protocol we decided to focus this edition on several issues of current importance to the management of activities in Antarctica to gain a retrospective view on what happened in all these years. The articles included here do not cover all pertinent aspects of the Madrid Protocol, but they provide interesting perspectives on some key issues that hopefully will help us to understand the past and be able to look into the future.

Although the Madrid Protocol recognizes the importance of Antarctica to the study of global change, the impact of climate change was not a high level priority when the Protocol was agreed. Nevertheless, after all these years it has become very clear that Antarctica is undoubtedly one of the regions in the planet most affected by climate change. Also, the number of Antarctic Treaty Parties had increased and some developments are of special concern, including the creation of new research stations, the rapid increase in tourism activities, the change in the political discourse and related political narratives by some Parties.

ASOC has not only been participating in discussions related to the negotiations´ implementation of the Protocol since its negotiation (and before) but also has been working with Antarctic Treaty Parties and other stakeholders on a large variety of important issues related to the protection of Antarctica over all these years. ASOC firmly believes in the importance of the Protocol as a central element in the structure of the Antarctic Treaty System (ATS). ASOC will continue focusing on the need to enhance the implementation of the Protocol and the development of further annexes that are necessary to secure the protection of Antarctica over time.

We hope that this new edition of Antarctic Affairs will provide readers with a new perspective on the past and future of some of the key issues that are at stake in Antarctica.

*Dr. Rodolfo Werner**
Editor
** Advisor to The Pew Charitable Trusts and the Antarctic and Southern Ocean Coalition (ASOC); Member of the Board and scientific advisor of the Antarctic Wildlife Research Fund; Director of the Advisory Council of Fundación Agenda Antártica; Guest speaker for Lindblad Expeditions/National Geographic.*

Antarctic time travel: The Environment Protocol

Ricardo Roura

Abstract

The 1991 Protocol on Environmental Protection to the Antarctic Treaty is one of the key international instruments guiding human engagement with Antarctica. This article focuses on some of the key legal and practical aspects of the implementation of the Protocol for the past three decades, as seen from the perspective of an observer active in Antarctica and in Antarctic Treaty System decision-making bodies during this period. An "Antarctic time traveller" travelling between 1991 and 2021 and back would recognise the continuity and change prevalent in Antarctica and its governance regime. The lasting legacy of the Protocol includes its objective, designation and environmental principles, as well as the mining ban and all related content. However, the future prospects of the Protocol depend on the Parties' ability to keep it relevant in a changing world while maintaining their original vision of comprehensive protection of the Antarctic environment and dependent and associated ecosystems. The challenge for Antarctic Treaty actors for the next decade and beyond will be to reaffirm the grand vision of the Protocol while addressing tensions between common interests and national interests, and pervasive global change.

Key words

Protocol on Environmental Protection to the Antarctic Treaty, Antarctica, Antarctic Treaty System

Introduction

The Protocol on Environmental Protection to the Antarctic Treaty (hereinafter the Protocol), signed on 4 October 1991, is one of the key international instruments guiding human engagement with Antarctica. The Protocol effectively terminated the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), which Antarctic Treaty states had negotiated previously (1981-1988), and started a new era of Antarctic governance.

The Antarctic Treaty turned thirty years in force shortly after the Protocol was signed, and at the time of writing it has been 60 years in force. The Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention) had been in force for less than ten years in 1991 and at the time of writing has been in force for nearly 40 years. These instruments, related measures in force and their decision making and advisory bodies represent the core of the Antarctic Treaty System (ATS). In this context, what are the legacy and prospects of the Protocol on Environmental Protection to the Antarctic Treaty, thirty years after its signature? Beyond its longevity, the continued relevance of the Protocol reflects also the prospects of the ATS as a whole.

Vidas (2002) argues that the Protocol aimed to address political imperatives concerning among others the legitimacy of the ATS to govern Antarctica on the face of the "question of Antarctica" raised by some nations not party to the Antarctic Treaty in the United Nations General Assembly. It also aimed to address environmental governance matters. Vidas further argues that the Protocol primary political objective – resolving the "CRAMRA problem" – was achieved upon its signature, but this was only the start of addressing environmental protection objectives. Achieving these objectives has been a focus of discussion and action by ATS stakeholders during the last three decades. Parallel to this, new environmental challenges have arisen that require the attention of ATS bodies, putting the Protocol's applicability to the test (e.g. Bastmeijer, 2018). These include tourism management, expanding protected area networks, and climate change.

Bastmeijer (2000) notes that the notion of "implementation" outlined in Art. 13 of the Protocol consists of all the measures taken by a state party (and the collective of state parties) to fulfil the Protocol's objectives. Bastmeijer (2000) further notes that an adequate implementation should in theory lead to "compliance" with the Protocol and eventually to the protection of the Antarctic environment and dependent and associated ecosystems.

This article focuses on some of the legal and practical aspects of the implementation of the Protocol for the past three decades, as seen from the perspective of an observer active in Antarctica (including the Southern Ocean) and in ATS bodies during this period. The article begins with an overview of observations made during an Antarctic expedition carried out by the international environmental organization Greenpeace, which took place in 1990-1991 during Protocol negotiations. The expedition documented Antarctic operations as well as fishing and whaling activities in the Southern Ocean; however, this article focuses primarily on those issues more directly related to the Protocol. The article follows with an overview of the Antarctic Treaty in 1991, and a summary of early perspectives on the Protocol by environmental nongovernmental organisations (ENGOs) at the time. After a broad-brush overview of the Protocol implementation in subsequent decades, the article compares

earlier observations with the current situation in Antarctica and the ATS.

This analysis does not intend to be a comprehensive examination of the range of issues and perspectives related to Antarctic governance, but rather illustrative of the issues that ENGOs considered significant at the time, and to a large extent still do now.[1]

Methods

Oversimplified, environmental campaigns during Protocol negotiations involved an active presence in Antarctica to document - and protest as required - activities on site; public awareness campaigns; and political presence in Antarctic Treaty countries and fora (Roura, 2007a, 2007b; Barnes, 2018). This article is partly based on observations made during three decades of active participation in different kinds of Antarctic expeditions and attendance to ATS decision making bodies as an Observer (or Expert).[2]

These roles provided platforms from whence to conduct participant, direct, and indirect observations, depending on the context. As defined by Bernard (2002), participant observation involves active involvement in an activity, and provides experiential knowledge about the activity being observed. Direct observations involve watching people and recording their behaviour. Indirect observations involve an examination of traces of activity and behaviour (or "the archaeology of behaviour"). Observations can be documented with text and images, and complemented with other research methods such as interviews.

As applied in practice, observations aimed to assess how people interacted with the Antarctic environment, and the apparent or potential consequences of those interactions. Field observations focused on operational practices such as fuel storage or waste management, and the various forms in which National Antarctic Programs (NAPs) and other actors operate in Antarctica. Far from Antarctica, observations in Antarctic decision-making fora tracked how environmental issues circulated through the sequence of stages or phases of the policy cycle, from agenda setting through policy discussions and eventual policy decisions (e.g. Jan & Wicher, 2007). Consensus – or lack of it – on policy matters has consequences for the Antarctic environment and ecosystems. It should be noted that although observer/experts to ATS bodies are insiders to formal closed meetings, they remain outsiders to the "black box" of decision making where Party representatives discuss bilaterally or multilaterally sensitive issues.

Beyond collecting data about practices largely hidden from public view, observers were also bearing witness of events. "Bearing witness", which originated in Quaker practices, was used by Greenpeace in the 1970s to conceptualise (and popularise) its approach to activism: while witnessing an injustice, one cannot turn away in ignorance but must either stop it or, if unable to do so, stand by and attest to it (Wapner, 1995:321). In an Antarctic context the outrage of ENGOs was directed at proposals or practices such as the potential development of mineral resource activities, whaling and aspects of fishing. "Bearing witness", as environmental activism, motivated Greenpeace to carry out several Antarctic expeditions from the mid-1980s.

Antarctica in 1990-1991

Between December 1990 and April 1991 Greenpeace conducted an ambitious Antarctic expedition on its ice-class ship, the MV Italicize (GPI, 1991). This was the sixth Antarctic expedition organised by the organization since 1985. The observations conducted during this expedition illustrate the range of activities in parts of the Antarctic Treaty and CAMLR Convention areas during Protocol negotiations. CRAMRA had already been adopted (Wellington, 2 June 1988) and was open for signature. About 70% of the Antarctic Treaty Consultative Parties (ATCPs) at the time had already signed it, however several ATCPs had stated that they would not sign or ratify it (see e.g. Barnes, 2018). CRAMRA was de facto stillborn. In parallel, negotiations for an environmental protection regime were taking place through a series of Special Antarctic Treaty Consultative Meetings (1990-1991).

However, the outcome of those discussions was still uncertain. As noted by Redgewell (1990) prior to the adoption of the Protocol there was only a voluntary moratorium on Antarctic mineral activity, pending the entry into force of CRAMRA. Seeing the consensus achieved during CRAMRA negotiations it was considered that the proposal for a wilderness park was unlikely to be adopted. The risk was to end up with no mineral activities regime, no wilderness park, and free-for-all mining, with dire consequences for the ATS and the environment. Furthermore, at least one country was reported to be already engaging in prospecting activity disguised as scientific research (Redgewell, 1990:481).

The 1990-1991 expedition consisted of two legs. The first leg was from New Zealand to the Ross Sea region and back (December 1990-February 1991). The second leg was from New Zealand to the Antarctic Peninsula and the Scotia Sea, ending in Argentina (February-April 1991).[3]

During the first leg Greenpeace observed (and disrupted) whaling activities in the Ross Sea; resupplied and exchanged personnel at its World Park Base in Ross Island; and conducted observations of research bases and other sites in the area. After a two-week layover in New Zealand, the expedition sailed on to the Antarctic Peninsula with a brief stop in Peter the First Island; and examined the environmental aspects of many active, unoccupied and abandoned stations in the NW Antarctic Peninsula. This included the deployment of an independent, multilingual research team in Fildes Peninsula, King George Island (Krzyszowska, 1993).[4] After a stopover in Ushuaia, Argentina, the expedition monitored longline and krill fishing activities in Statistical Areas 44.3 and 44.2 of the CAMLR Convention, including documenting seabird bycatch in the longline fishery (Dalziell & De Poorter, 1993). After sea ice conditions prevented access to the Weddell Sea, the MV Gondwana returned to the NW Antarctic to retrieve the team at Fildes Peninsula and conduct further base observations. Before returning north the expedition conducted a marine debris beach clean-up in Livingston Island, and spent a day and half observing and documenting whales for later photo identification by one of the first institutions using this technique.[5]

Meanwhile, a Greenpeace representative participated as an observer on the MV Icebird by invitation of the Australian government and visited some active and historical stations in East Antarctica (February-March 1991).

Field observations

The environmental aspects of various Antarctic research bases were documented in detail, based on visits that lasted several hours and involved dialogue with station staff. The reception to Greenpeace in occupied stations was friendly and courteous, in contrast with some hostility experienced by the organization in previous expeditions. Some of the main observations are summarized below.

Environmental Impact Assessment (EIA) procedures were largely unknown to base staff, and not commonly used in Antarctica, even if domestic EIA practice was used by many Antarctic Treaty Parties. Dogs were still present at some stations (the deadline for their removal, once the Protocol was signed, was 1 April 1994). Abandoned or uninhabited stations, often recolonised by wildlife, were not an uncommon sight in the Antarctic Peninsula.

Fuel storage and handling was often one of the most problematic aspects of station operations. At some stations the soil was impregnated with fuel in relatively large areas. Containment berms or double-walled tanks were not the norm. The use of renewable energy was only at experimental phase at the time, including at the Greenpeace base – the first vertical wind turbine was installed at Neumayer Station in 1991.

Sewage was disposed at sea, sometimes raw and sometimes "macerated" but mostly with no further treatment or monitoring. Waste management was problematic at many stations. Waste dumping was being discontinued at some stations, but there was a legacy of past environmental practices at many sites. Some bases had abandoned waste dumps nearby, sometimes in coastal areas or meltwater lakes. Retrograding of waste and separation at the source was only beginning at some stations. Dumping waste at sea was still used at some stations or was only then being discontinued. Waste incineration and open burning was still commonly used at many stations. However, some stations organised regular clean ups around the station grounds. Handling and storing hazardous materials was a problem at some stations, as it was not possible to return them to the country of origin.

The clustering of active stations in some locations, particularly in King George Island, was likely to result in cumulative impacts and a duplication of scientific research. A study of human impact on Fildes Peninsula conducted during the expedition concluded that the area degraded by chemical and mechanical effects – including among others fuel spills, sewage pollution, landfills, and from human activities comprised 3.5 km2, which is 12% of the Fildes Peninsula land surface (Krzyszowska, 1993).

There were several Antarctic Treaty protected areas categories available to NAPs, but some of these categories were not in use. Those that were in use – Specially Protected Areas (SPAs) and Sites of Special Scientific Interest (SSSIs) – were relatively few (19 SPAs and 35 SSSIs at the time), small and concentrated in the Antarctic Peninsula and the Ross Sea regions (Goldsworthy & Hemmings, 2008). Generally, these areas emphasised unique and scientifically important features rather than representativity of major ecosystems (GPI, 1986 228-231). Furthermore SSSIs were used to provide temporary protection to scientific research, rather than long term protection to environmental features. Field visits made it apparent that these areas did not have established boundaries or boundary markers, although some of these areas were reportedly off limits to personnel in nearby bases.

Historic Sites and Monuments (HSMs) were in use since 1972. Greenpeace staff could not locate a historic hut and plaque at Peter 1st Island listed as HSM 25.

The Greenpeace team also reported on aspects such as base construction and expansion, training of personnel, and science activities at some stations. A Greenpeace representative participating in an Australian expedition reported that some Australian stations were being modernised and recommended that Old Casey Station be dismantled.

Tourism was a comparatively minor activity at the time. The 1990-1991 Greenpeace expedition encountered hardly any tourism cruise ships, and none were reported in the expedition report other than accounts of past or impending visits at some stations. However, some stations had already a tourism policy in place to manage visits. Tourism was expanding, with a 600% increase in preceding years (UK, 1991), and was seen as an emerging issue of concern by some Antarctic Treaty Parties. Greenpeace reported on the concern about a growing number of yachts as expressed by some Antarctic operators, with a record number of 20 yachts that season.

Biological prospecting activities were relatively unknown in Antarctica and not part of the ATCM agenda. None is reported in the Greenpeace report.

Aspects of climate change were being studied at some research stations; marine litter was noted at some beaches, mostly fishing gear and other plastic materials. A dedicated search of humpback whales in the Gerlache Strait encountered a handful of individuals and further documented several whale flukes.

Some profound changes were taking place globally through 1990-1991, with repercussions in some of the countries active in Antarctica. The Democratic Republic of Germany dissolved and became part of a unified Federal Republic of Germany. In contrast, the Soviet Union was dissolving into a number of independent states. Some of the expeditioners Greenpeace staff met early in 1991 had begun their Antarctic journey a year or more earlier, and were to return to a different country to the one they had left. They did not know what expected them back home.

The Antarctic Treaty System in 1990-1991

Several special Antarctic Treaty meetings took place during 1990 and early 1991 to negotiate the Protocol, which was adopted on 4 October 1991. Discussions about the Protocol's implementation continued shortly after at the XVI Antarctic Treaty Consultative Meeting (ATCM) in Bonn (7-18 October 1991). There was no Antarctic Treaty Secretariat at the time, so the meetings were organised by the host countries.

At the time ATCMs were biennial and the previous meeting (ATCM XV) had taken place in 1989. Between 1990 and 1991 Guatemala and Switzerland became new Parties to the Antarctic Treaty, and Ecuador and The Netherlands were accepted as Consultative Parties. As a departure from usual practice, The Netherlands was able to demonstrate its commitment to Antarctic research without the need to establish a station of its own. By the closing of ATCM XVI in Bonn there were 40 Antarctic Treaty Parties, 26 of which were ATCPs.

Most of the papers submitted to the XVI ATCM focused on the functioning of the ATS; aspects of Antarctic environmental protection (particularly the protected area system and its application to specific areas, and waste management); and the largely discontinued practice of opening addresses from Heads of Delegation, combining diplomatic niceties with an outline of policy priorities for each Party. As 1991 was the 30th anniversary of the entry into force of the Antarctic Treaty the Contraction Parties agreed on a Declaration which notes:

> *The determination of Parties to maintain and strengthen the Treaty and to protect Antarctica's environmental and scientific values is convincingly demonstrated in their adopt of the Protocol on Environmental Protection to the Antarctic Treaty and their decision to designate Antarctica as a natural reserve devoted to peace and science.*

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) met shortly after the Bonn ATCM (CCAMLR X, 26 October-1 November 1991). Among other topics, including issues documented by Greenpeace in the Southern Ocean earlier that year, CCAMLR discussed the adoption of the Protocol and future relations with the Committee for Environmental Protection (CEP) as well as future negotiations regarding the Protocol's protected area regime.

ENGO commentary on the newly adopted Environment Protocol

The Antarctic and Southern Ocean Coalition (ASOC) – a coalition of environmental organisations – had been active in Antarctic Treaty bodies since the late 1970s, and an official observer to CCAMLR since 1988, but only in 1990 it was allowed to participate as an expert in the Protocol negotiations, and subsequently at the ATCMs from 1991. Through the late 1970s and the 1980s ENGOs promoted "World Park Antarctica", a loosely defined concept based on four fundamental principles (GPI, 1986:7).

> 1. There should be complete protection of the wildlife of the Antarctic;
> 2. The protection of the wilderness values of the Antarctic should be paramount;
> 3. The Antarctic should remain a zone of limited scientific research activity, with co-operation between scientists of all nations; and
> 4. The Antarctic should remain a zone of peace, free of nuclear and other weapons and all military activities.

These basic tenets were further articulated in a series of statements through CRAMRA and Protocol negotiations (see e.g. Joyner, 1992). It is apparent that the Protocol objectives, designation and principles met – in varying degrees - some of these principles. The Protocol's Article 2 designates Antarctica as "…a natural reserve, devoted to peace and science". Article 3 establishes that "The protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica…" shall be fundamental considerations in the planning and conducting of activities.

An "ECO" newspaper produced by ENGOs on the margins of ATCM XIV, dating from October 1991 includes a brief commentary on the newly adopted Protocol. The cover article on the issue is titled "Bonn, the day after" and contains the following assessment:

> *ECO is especially pleased to see that the Protocol will guarantee that Antarctica is not only kept off limits for minerals activities for a long time, but is also given legally binding protection.*

Clearly for ENGOs not only the mining ban itself was significant; the legal status given to environmental protection in the Protocol was also seen as a major step forward. However, the article also adds a cautionary note:

> *While appreciating the Protocol's significant progress, much work still needs to be done, both in refining its details and putting it into practice.*

ENGOs at the time recognised the importance of completing aspects of the Protocol that were yet unresolved – such as completing Annex V on Area Protection and Management - and also the importance of practically implementing this agreement. Much of the ATCM-related work of ASOC since then has focused on the ratification and implementation of the Protocol.

A paper submitted to the Bonn ATCM outlined a detailed critique of the Protocol (ASOC, 1991). The document highlighted the significant shift away from the exploitation of the region for minerals, and toward the preservation of Antarctica as a World Park, with the designation of Antarctica as "a natural reserve, devoted to peace and science" only three years after the adoption of the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA). It further noted that the Protocol provided "a solid foundation on which to build future protection for Antarctica" with basic elements including its objective, designation and principles; the mining ban for at least 50 years; the establishment of a Committee for Environmental Protection; and Annexes I-IV on key operational issues.

However, the paper also highlighted some weaknesses in the fabric of the Protocol. These included weak or ambiguous language; the granting of sovereign immunity to a vast majority of vessels operating in Antarctica; and the withdrawal clause of Article 25.

The paper outlined the next step for Parties, which involved "swift ratification and full implementation of the Protocol's measures, placing a strong emphasis on compliance and enforcement" as well as some "vital additions" required for the efficient operation of the Protocol. These included the establishment of a Secretariat; annual ATCMs; the activation of the Committee on Environmental Protection; the development of impact assessment and inspection procedures; and the negotiation of liability provisions. It also recommended that ATCPs addressed the weaknesses in the Protocol and its four initial Annexes.

ASOC (1991) also discussed decision making processes and the relative advantages of consensus vs. majority. Critically, it raised issues of the area of application of the Protocol, anticipating some of the issues that would be relevant to the ATS in later years.

Three decades of the Environment Protocol

The signature of the Protocol was a turning point in Antarctic conservation, notably because of its prohibition on mineral resource activities. It generated expectations that its implementation would result in an enhanced protection of the Antarctic environment. The broad patterns of implementation

of the Protocol over the past three decades are summarised below.

The first decade (1992-2001): Growing pains

Upon the signature of the Protocol the Parties committed themselves to interim implementation until the Protocol entered into force.[8] During the first decade many Parties incorporated the Protocol to their domestic legislation, as appropriate to different legal systems, and strived to adapt their existing practices to Protocol requirements. The Protocol entered into force in 1998, and Annex V on Area Protection and Management was negotiated.

ASOC (2000) examined the implementation of the Protocol during this decade, and noted that although it was too early to tell how well the Protocol was achieving its intended purpose, Parties were making some progress in the creation of the legal and practical measures required to give it effect. In order to illustrate – and ground truth – the practice, ASOC referred to the report of a 1999 Anglo-German Inspection of 17 research stations and other facilities in the Antarctic Peninsula (February 1999), one of the most thorough yet inspections at the time. This inspection described various deficiencies in Protocol implementation, particularly with respect to EIA, and recommended improvements in fuel transfer and storage, energy efficiency and use of alternative energy, clean-up and/or conversion of former work sites (abandoned stations), waste management and sewage treatment. ASOC (2000) also expressed concern about the assessment of cumulative impacts and consideration of dependent and associated ecosystems in EIA.

Some of these deficiencies and limitations could be considered to be "growing pains" in adapting existing management regimes to the requirements of the Protocol, to be resolved as the system matured.

The second decade (2002-2011): Consolidation and further expansion

The second decade was marked by the entry into force of Annex V (2002), the review of Annex II on the Protection of Fauna and Flora, and completion of negotiations and signature of Annex VI on Liability Arising From Environmental Emergencies (2005). In addition, climate change entered the CEP agenda in 2005 (Njåstad, 2020).

In a review of Antarctic environmental protection since the signature of the Protocol two decades earlier, ASOC (2011) noted progress on Annexes V and VI, identified some significant accomplishments, some outstanding issues, and some developments of concern.

The main accomplishments included the very high standards of implementation of the Protocol by some Parties; the operation of the CEP; and the review of Annex II on the protection of flora and fauna;

Outstanding issues included aspects related to the protection of wilderness values; the proliferation of stations; the application of EIA; addressing cumulative impact; compliance with aspects of information exchange; and the slow expansion of the protected area network.

Of greatest concern were several developments in the Antarctic that appeared incompatible with the Protocol's commitments. A significant gap was apparent in the standards of implementation

of the Protocol: at one end there were those Parties appropriately implementing many Protocol obligations; at the other end there were those lagging significantly behind with chronic, substandard implementation. The findings of several official inspections during the decade underscored this gap. A cause célèbre at the time was the construction of a station in the Larsemann Hills in the centre of an area set aside for protection (detailed in O'Reilly, 2011), which highlighted a conflict between international area protection and the assertion of national interests.

The concept of dependent and associated ecosystems withered conceptually and in practice. Already under Annex V the capacity to designate "marine areas" as specially protected or managed areas was made contingent upon CCAMLR agreement. This was further reinforced under ATCM Decision 9 (2005). However, ASOC (2011) highlighted as a promising initiative the ongoing discussion at CCAMLR on bioregionalization and the establishment of a network of Marine Protected Areas in the Southern Ocean as a way to "…contain, if not prevent, excessive legal and illegal exploitation…" of Antarctic marine life. ASOC (2011) also celebrated the designation of the South Orkneys no-take MPA in 2009.

The third decade (2012-2021): Growing connectivity and an accelerating global crisis

The third decade was marked by growing challenges resulting from local and regional drivers (e.g. Grant et al., 2021) and global processes such as climate change (e.g. IPCC 2019; Morley et al., 2021; SCAR, 2021d, 2021e). During this decade researchers conceptualised and documented an expanding human footprint in Antarctica (Brooks et al., 2019) and the narrative of the Anthropocene took hold in Antarctic circles (e.g. Lean & McGee, 2020). An overlap in the ATCM and CCAMLR agendas became apparent, particularly with respect to protected areas.

A discontinuity in the Antarctic protection regime is apparent in the limited protection of marine areas in the series of Antarctic Specially Protected Area (ASPAs) and Antarctic Specially Managed Areas (ASMAs) in coastal settings (Roura, Steenhuisen & Bastmeijer, 2018). Substantive research – influenced by new remote monitoring and tracking technologies – highlighted the connectivity between the marine and terrestrial environment for certain species and the identification of ecologically significant areas in the Southern Ocean (SCAR, 2021a). This research further highlighted the overlap between the responsibilities between the ATCM and CCAMLR with respect to safeguarding Antarctic environment and ecosystems. However, the Protocol's concept of "dependent and associated ecosystems" continued to wither, at least in its practical implementation if not in formal statements. As a whole, there were significant discussions about different aspects of protected areas at the ATCM (and other ATS bodies), which resulted in some conceptual progress but did not result in a significant expansion of the existing network.

In the global arena, several international reports from 2019 provided evidence of alarming climate change and biodiversity loss (IPCC, 2019; IPBES, 2019). The implications for the Antarctic region and beyond include shelf collapse, sea level rise, ocean acidification, and changes in global ocean circulation (SCAR, 2021d, 2021e), requiring responses from Antarctic Treaty bodies (e.g. Capurro et al., 2021). Emperor penguins are now being considered as Specially Protected Species based on

projections of population decline linked to habitat loss (SCAR, 2021b).

As noted by Njåstad (2020), climate change had been a top priority for the work of the CEP only in the previous 5-10 years; however, reaching to that stage conceptually and practically was not easy. Now it is increasingly embedded in the agenda. ATCM XLIII – CEP XXIII in 2021, hosted online by France, agreed on the "Paris Declaration" which reaffirms the Parties' "…strong and unwavering commitment to the objectives of the Antarctic Treaty, its Environmental Protocol and other instruments of the Antarctic Treaty system"; their commitment to the prohibition on any activity relating to mineral resources, other than scientific research; and their commitment to work together to better understand and address climate change, consistent with the 2015 Paris Agreement's goals "…with a view to limiting the adverse impacts of climate change on the Antarctic environment and dependent and associated ecosystems, protecting ecosystems, and improving Antarctica's resilience to climate change."

Although climate change is now in the agenda of ATS bodies, the substance of climate actions is still limited. The CEP's Climate Change Response Work Programme is more of a checklist of actions than a program of action (ASOC, 2021). The climate change response in a CCAMLR context is even weaker – CCAMLR-43 in 2021 could not agree on a climate change Resolution and instead made reference to an earlier (and largely dated) non-binding climate change Resolution from 2009.

Discussion: Revisiting earlier observations

Revisiting briefly the observations made in 1991 from the perspective of 2021 sheds some light on how the Protocol regime has worked to date.

Antarctic governance was quite different early in 1991 than in 2021, despite some apparent similarities. Although there were some protections in place derived from earlier Antarctic Treaty instruments, in the 1990-1991 season Antarctica had not been designated as a natural reserve, devoted to peace and science; comprehensive environmental protection was not legally enshrined, nor was the intrinsic value of Antarctica recognised. This difference is now apparent in e.g. current waste management practices, the removal of dogs from Antarctica, and prevention of non-native species introductions.

Furthermore, mineral resource activities were not prohibited and were of potential interest to some Antarctic Treaty states, many of which signed CRAMRA.[9] However, the issue of presumed mineral resource activities masquerading as scientific research carried out by an ATCP – mentioned already during Protocol negotiations as an argument to resuscitate CRAMRA (Redgwell, 1990) – has been discussed at the ATCM, triggered by the ambiguous language of documents submitted by the Russian Federation.[10] In response, Russia stated that "the Russian geological scientific programs in the Antarctic, both on land and offshore, correspond precisely to reconnaissance and regional stages of geological investigations and must not be mistaken for mineral exploration." (Russian Federation, 2002). The issue resurfaces periodically in the media (e.g. Walters, 25 October 2021).

The EIA process, which was almost unheard of by Antarctic station managers in 1990-1991, is now commonly used by many Parties, even if not free of implementation problems (Bastmeijer & Roura, 2008). EIA provides an opportunity to consider the environmental effects of proposed activities early in the planning process and identify alternatives. In practice nothing prevents Parties from carrying out a proposed activity once they decide to do it (often prior to the EIAs) Comprehensive Environmental Evaluations (CEEs) usually conclude that the original proposal is the only feasible alternative (e.g. Hemmings & Kriwoken, 2010). Australia's recent cancellation of a proposed 2,700 meter concrete runway at Davis Station, which seemed dead certain to go ahead, is a notable exception.

In 1991 Annex II of the Protocol listed two species as specially protected: Ross seals and fur seals. The former still remain, but the latter seals were removed when Annex II was reviewed in the early 2000s. Southern Giant petrels were considered as potential candidates for listing but were not included. Emperor penguins are now being considered for listing as Specially Protected Species due to their vulnerability to climate change (SCAR, 2021b).

Some stations and other facilities that were abandoned or inhabited in 1990-1991 have been removed or restored and used for other purposes such as tourism attractions. In parallel several new stations have been built (or existing stations entirely rebuilt), some of them using cutting edge technology and design. Clusters of stations that existed in 1990-1991 are still in place, and some new clusters are emerging, for instance in the Ross Sea region.

The more technical aspects of operating stations, such as fuel storage and handling (and its substitute: the use of alternative energy sources), sewage disposal and waste management follow the trend outlined earlier: at one end of the spectrum some Parties operate state of the art stations, or "traditional" but relatively low impact facilities; and others struggle to meet basic requirements. For instance, repeated observations at Fildes Peninsula over the years reported some improvements as well as lasting poor practices (Tin and Roura, 2006; ASOC, 2006). More recently reports of long-term monitoring in Fildes Peninsula described as "a paradigm of inadequate implementation", with some improvements but "widespread and continuing breaches" of environmental standards, and expanding cumulative impacts (Braun et al., 2018:362).

Antarctic protected areas have been streamlined to conform to the requirements of Annex V, and some new areas have been added to those in place in the 1990s. Although individual ASPAs protect significant sites, the current ASPAs regime is regarded as "inadequate, unrepresentative, and at risk" (Shaw et al., 2014). The series of ASPAs remains unsystematic and underdeveloped (Hughes & Grant, 2017). In parallel, most ASMAs operate effectively, but as a whole the ASMA tool has been underutilized. The list of HSMs has expanded and also streamlined. (HSM 25, which Greenpeace could not locate in 1990-1991, was de-listed some years later).

There has been some significant conceptual work concerning environmental domains analysis for the Antarctic continent, Antarctic conservation biogeographic regions and Important Bird Areas (IBAs). More recently Important Marine Mammal Areas (IMMAs) were also identified (IUCN & SCAR, 2021). Antarctic science plays a key role supporting environmental decision making (McIvor, 2020), and this work could be applied to expand the protected area network. Ongoing systematic

conservation planning for the Antarctic Peninsula involving the Scientific Committee for Antarctic Research (SCAR), the International Association of Antarctica Tour Operators (IAATO) and other stakeholders – including ASOC – represents a step in the right direction.

In 1990-1991 approximately 4,842 shipborne and airborne tourists visited Antarctica (UK, 1991) and yachts were reported to Greenpeace to be an emerging issue. In 2020-2021 Antarctic tourism was reduced to almost zero (IAATO, 2021) on account of the global COVID 19 pandemic and its impact on travel. However, in 2019-2020 an unprecedented 74,401 landing, non-landing and airborne tourists had visited Antarctica. It is expected that this rapidly upward trend is likely to resume in the not too distant future. In November 2021 a commercial Airbus a340 plane landed on a runway nearby new luxury adventure camp in the Antarctic interior (Marcus, 24 November 2021), perhaps an indication of future developments. Yachts are still seen as an emerging issue, with 43 yachts reported in 2019-2020, of which 32 were authorised by national competent authorities, and the remaining 11 appeared not to be (UK et al., 2021).

Biological prospecting is a complex issue that has been alternately added and removed from the ATCM agenda. There was no reference to biological prospecting in the Greenpeace report from 1991, as this was not an issue under discussion at the time. A recent survey of biological prospecting activities (SCAR, 2021c) appears to indicate that these activities are embedded in Antarctic science.

At least one of the humpback whales photographed during the Greenpeace 1990-1991 expedition was re-identified in recent years, about 10-15 nautical miles from the 1991 sighting.[11] Humpback whale numbers seem to be on the increase in the NW Antarctic Peninsula, and whale photo identification under HappyWhale and other "citizen science" programs have become regular activities in some tourism cruises.

The Protocol reflects early awareness of the emerging climate change crisis, and recognises the value of Antarctica as an area for the conduct of scientific research, particularly "research essential to understanding the global environment" (Protocol, Art. 3(1)). However, in 2021 it is apparent that climate policy is inadequate, with responses focused in a checklist of tasks, often organized around research, rather than a coordinated response program (ASOC, 2021). The most significant potential contributions of Antarctic institutions to addressing climate change is through producing and disseminating scientific research, and supporting ecosystem resilience through the protection of Antarctic areas and species.

Discussing the previous two decades of Protocol implementation, Bastmeijer (2018) "diagnosed" the ATCM with a case of apparent "Success Syndrome": earlier success raises expectations that are difficult to meet. When applied to the ATCM, it is apparent that "….while the ATCM has had additional smaller successes since 1998, from various perspectives the Consultative Parties have not been able to meet the high expectations set by the Protocol's aims and provisions". Examples include the consideration of wilderness values; the limited use of spatial protection tools for the protection of marine values; gaps in the regulatory system resulting from "problematic hard law making" – particularly the non-implementation of Annex VI on environmental liability; limited use of a precautionary approach; and weak compliance mechanisms as identified by on-site inspections. Bastmeijer (2018) suggests that an absence of consensus decisions on key issues results in "decision

making by non-decision making".

The same diagnostic could be applied to CCAMLR, based on its performance since the adoption of the Ross Sea region MPA in 2016, which was a significant diplomatic accomplishment. While not directly a Protocol issue, discussions at CCAMLR increasingly impact on ATCM and CEP deliberations, particularly those concerning protected areas. Diverging interpretations of the relation between the conservation and use of marine life, which are central to how the CAMLR Convention is implemented, affect the implementation of "comprehensive protection" obligations under the Protocol (Roura et al, 2018). Overall, it is increasingly clear that the divide between ATCM and CCAMLR issues might be politically expeditive but is ecologically artificial. Recent research about marine life straddling the land and the sea (IUCN & SCAR, 2021; SCAR, 2021a) seems to confirm this assessment.

In 1992 Joyner noted that, "…the strength of the Madrid Protocol can be only what the Antarctic Treaty governments are willing to make it" (1992:337). Nearly thirty years later, we have an evidence-based insight on what this was. Not surprisingly, there are have been remarkable achievements as well as ongoing challenges (e.g. ASOC, 2016; Bastmejer, 2018; Njåstad 2020; McIvor 2020). Many of the activities and issues relevant to the ATCM that were of concern to environmental groups in 1991 are still significant issues in 2021. Environmental management by Antarctic Treaty states largely conforms to Protocol requirements, even if imperfectly across the range of Antarctic operators; some discussions in Antarctic Treaty bodies have moved on substantially, while others have remained uncannily similar; and there are also emerging challenges.

Conclusions: Continuity and change

An "Antarctic time traveller" travelling between 1991 and 2021 and back would recognise the continuity and change prevalent in Antarctica and its governance regime. The core of Antarctic activities and institutions is not substantially different now than in the past, barring welcome additions like the Committee for Environmental Protection and the Antarctic Treaty Secretariat (which are some of the "vital additions" that ENGOs identified in 1991). However, the scale and diversity of Antarctic activities have increased. The processes of global change hinted at in the Protocol have an increasing presence in Antarctica and its decision-making bodies.

What are the legacy and prospects of the Protocol on Environmental Protection to the Antarctic Treaty, thirty years after its signature? Its main legacy are the designation, objective and principles of the Protocol and all related content, including the mining ban. They should serve as a "guiding star" to decision-makers for the foreseeable future. However, the interpretations of what that legacy means and how it should be applied are changing.

The future prospects of the Protocol depend on the Parties' ability to keep it relevant in a changing world while maintaining their original vision. In the past 30 years the content of policy discussions in Antarctic Treaty bodies has expanded in some regards, with greater consideration of global issues. It has contracted in other ways, increasingly focusing on instrumental uses (particularly of the Southern Ocean) while undermining notions of comprehensive protection and the intrinsic value of

Antarctica. The challenge for Antarctic Treaty actors for the next decade and beyond, then, will be to reaffirm the grand vision of the Protocol while addressing tensions between common interests and national interests, and pervasive global change.

Acknowledgments

Many individuals involved in Antarctica and the Antarctic Treaty System, past and present, helped in various ways to inform the content this article. I thank them without implicating them in my interpretations. I thank Claire Christian, Janet Dalziell, Juan Lucci and Rodolfo Werner for comments on the original manuscript.

References

Barnes, J. (2018). A reminiscence on Antarctic governance and transparency: The NGO role. Antarctic Affairs. Volume V 2018 / Year IV. 7-34

Bastmeijer, K. (2000). Implementing the environmental Protocol domestically. An overview. In Vidas D. (ed.) Implementing the Environmental Protocol regime for the Antarctic. Kluwer Academic Publishers. (pp. 287-308).

Bastmeijer, K. (2018). Introduction: The Madrid Protocol 1998–2018. The need to address 'the Success Syndrome' . The Polar Journal, 8(2), 230–240. https://doi.org/10.1080/2154896X.2018.1542861

Bernard, H.R. (2002). Research methods in anthropology. Qualitative and quantitative approaches. Third edition. Altamira Press.

Bastmeijer, K. & Roura, R.M. (2008). Environmental Impact Assessment in Antarctica. In: Bastmeijer, K. & Koivurova, T. (Eds.), Theory and Practice of Transboundary Environmental Impact Assessment, Monographs Series on Legal Aspects of Sustainable Development. pp. 175-219. Leiden: Brill/ Martinus Nijhof Publishers.

Braun, C., Hertel, F. & Peter, H-U. (2017). Environmental management: The Fildes Peninsula paradigm. In: Dodds, K. & Hemmings, A.D. & Roberts, P. Handbook on the politics of Antarctica (pp. 337-350).

Brooks, S.T., Jabour, J., van den Hoff, J. & Bergstrom, D.M.. (2019). Our footprint on Antarctica competes with nature for rare ice-free land. Nat Sustain 2, 185–190. https://doi.org/10.1038/s41893-019-0237-y

Dalziell, J., & De Poorter, M. (1993). Seabird mortality in longline fisheries around South Georgia. Polar Record, 29(169), 143-145. doi:10.1017/S0032247400023597

Capurro, A., Colleoni, F., Downey, R., Pakhomov, E., Roura, R. & Christianson, A (2021). Climate Change and Southern Ocean Resilience. Report from an Interdisciplinary Scientific Workshop, March 30, 2021. Polar Perspectives 5, June 2021. Washington DC: Wilson Center Polar Institute. 23pp.

Goldsworthy, L. & Hemmings, A.D. (2009). The Antarctic protected area approach. Hart, S. (ed.). Shared Resources: Issues of Governance. IUCN Environmental Policy and Law Paper No. 72. Gland: IUCN: 105T128.

GPI (Greenpeace International) (1991). Greenpeace 1990/91 Antarctic Expedition Report. October 1991. Amsterdam: Greenpeace International.

GPI (Greenpeace International) [De Poorter, M., Koch, S. & Wilson, R.] (1986). Antarctic Campaign Manual, May 1986 (in file with author).

Grant, S.M., Waller, C.L., Morely, S.A., Barnes D.K.A., Brasier, M.J., Double, M.C., Griffiths, H.J., Hughes, K.A., Jackson, J.A., Waluda. C.M., Constable, A.J. (2021). Local drivers of change in Southern Ocean ecosystems: Human activities and policy implications. Front. Ecol. Evol., 24 June 2021 | https://doi.org/10.3389/fevo.2021.624518

Hemmings, A.D. & Kriwoken, L. (2010). High level Antarctic EIA under the Madrid Protocol: State practice and the effectiveness of the Comprehensive Environmental Evaluation process. International Environmental Agreements: Politics, Law and Economics 10:3, 187-208.

Hughes, K.A. & Grant, S.M. (2017). The spatial distribution of Antarctica's protected areas: a product of pragmatism, geopolitics, or conservation need? Environmental Science and Policy 72: 41–51.

IPBES (2019). Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. https://doi.org/10.5281/zenodo.3831673

IPCC (2019). IPCC Special Report on the Ocean and Cryosphere in a Changing Climate. Geneva: IPCC.

Jan, W. & Wegrich, K. (2007). Theories of the Policy Cycle. In: Fischer, F, Miller GJ & Sidney MS (Eds.) 2007. Handbook of public policy analysis theory, politics, and methods. CRC Press. (pp. 43-62).

Joyner C.C. 1992. The 1991 Madrid Environmental Protocol: Rethinking the World Park Status for Antarctica. 1 Review of European Community and International Environmental Law (RECIEL) 328 (1992) Vol. 1 No. 3

Krzyszowska, Anna (1993). Human impact around polar stations on Fildes Peninsula (King George Island, Antarctica). XX Polar Symposium. Man impact on polar environment. Lublin, Poland, June 3-5 1993.

Leane, E. & McGee J. (eds.) (2020). Anthropocene Antarctica. Perspectives from the Humanities, Law and Social Sciences. Routledge

Leihy, R. I., Coetzee, B. W. T., Morgan, F., Raymond, B., Shaw, J. D., Terauds, A., Bastmeijer, K., & Chown, S. L. (2020). Antarctica's wilderness fails to capture continent's biodiversity. Nature, 583 (7817), 567–571. https://doi.org/10.1038/s41586-020-2506-3.

McIvor, E. (2020). The Committee for Environmental Protection and the important role of science in international efforts to protect the Antarctic environment. Antarctic Affairs 7, 13-28.

Morley. S.A., Abele, D., Barnes, D.K.A., Cárdenas, C., Cotté, C., Gutt, J., Henley, S.F., Höfer, J., Hughes, K.A., Martin, S.M., Moffat, C., Raphael, M., Stammerjohn, S.E., Suckling, C.C., Tulloch, V.J.D., Waller, C.L. & Constable, A.J. (2021). Global drivers on Southern Ocean ecosystems: Changing physical environments and anthropogenic pressures in an Earth system Front. Mar. Sci. doi: 10.3389/fmars.2020.547188

Njåstad, B. (2020). An effort to make the impossible possible – managing Antarctica for climate change. Antarctic Affairs 7 29-44.

O'Reilly, J. (2011). Tectonic history and Gondwanan geopolitics in the Larsemann Hills, Antarctica. PoLAR: Political and Legal Anthropology Review 34:2, 214–232.

Redgwell, C. (1990). Antarctica. The International and Comparative Law Quarterly 39:2, 474-481.

Roura, R.M. (2007a). "Greenpeace". In: Riffenburgh B (ed.). The Encyclopedia of the Antarctic. New York: Routledge. pp 472-474.

Roura, R.M. (2007b). "The Antarctic and Southern Ocean Coalition - ASOC". In: Riffenburgh B (ed.). The Encyclopedia of the Antarctic. New York: Routledge. pp. 41-43.

Roura, R.M. Steenhuisen, F. & Bastmeijer, K. (2018). The shore is the limit: Marine spatial protection in Antarctica under Annex V of the Environmental Protocol to the Antarctic Treaty. The Polar Journal 2018 Vol 2. https://doi.org/10.1080/2154896X.2018.1541549.

Shaw J.D., Terauds, A., Riddle, M.J., Possingham, H.P. & Chown, S.L. (2014). Antarctica's protected areas are inadequate, unrepresentative, and at risk. PLoS Biol 12(6). e1001888. https://doi.org/10.1371/journal.pbio.1001888

Tin, T. & Roura, R.M. (2004). Environmental reports of Fildes Peninsula, 1988-1997: Benchmarks for environmental management. Washington DC: The Antarctica Project.

Vidas, D. (2002). The Protocol on Environmental Protection to the Antarctic Treaty: A Ten-Year Review, in Stokke, O.S. & Thommessen Ø.B. Eeds.), Yearbook of International Co-operation on Environment and Development 2002/2003 (London: Earthscan Publications), 51–60.

Wapner, P. 1995. Politics Beyond the State: Environmental Activism and World Civic Politics. World Politics 47:3, 311-340.

Antarctic Treaty System documents

ASOC (Antarctic and Southern Ocean Coalition). 1991. A Critique of the Protocol to the Antarctic Treaty on Environmental Protection. XVI ATCM/INFO 21

ASOC (2000). An Evaluation of Progress Towards Implementation of the Madrid Protocol, SATCM XII - CEP III (2000), IP022

ASOC (2007), Implementing the Madrid Protocol: A case study of Fildes Peninsula, King George Island, ATCM XXX - CEP X (2007), IP136

ASOC (2011). The Antarctic Environmental Protocol, 1991-2011, ATCM XXXIV - CEP XIV (2011), IP089 rev. 1

ASOC (2016). An Unprecedented Achievement: 25 Years of the Environmental Protocol, ATCM XXXIX - CEP XIX (2016), IP079

ASOC (2021). The Madrid Protocol at Thirty: Where Do We Go From Here?, ATCM XLIII - CEP XXIII (2021), IP081

IUCN & SCAR (Scientific Committee for Antarctic Research) (2021). Important Marine Mammal Areas (IMMAS) within the Antarctic Treaty area: An international collaboration to inform habitat-related conservation decision-making and conservation planning for marine mammal species, IP024, ATCM XLIII - CEP XXIII (2021)

IAATO (2021). IAATO Overview of Antarctic Tourism: A Historical Review of Growth, the 2020-21 Season, and Preliminary Estimates for 2021-22. ATCM XLIII - CEP XXIII Paris (2021) IP110

Russian Federation (2002) Russian scientific geological research in Antarctica in context of Article 7 of the Madrid Protocol. ATCM XXV - CEP V Warsaw (2002), IP014.

SCAR (2021d).Ocean Acidification in the Southern Ocean WP017, ATCM XLIII - CEP XXIII (2021) WP036

SCAR (2021e) Antarctic and Southern Ocean Climate Change in a Global Context ATCM XLIII - CEP XXIII (2021) WP017,

SCAR (2021b). Projections of future population decline emphasise the need to designate the emperor penguin as an Antarctic Specially Protected Species, ATCM XLIII - CEP XXIII WP037,

SCAR (2021c). Antarctic Bioprospecting: SCAR Survey of Member Countries, ATCM XLIII - CEP XXIII (2021) WP016,

SCAR (Scientific Committee for Antarctic Research) (2021a). The Retrospective Analysis of Antarctic Tracking Data identifies Areas of Ecological Significance in the Southern Ocean, IP049 rev. 1, ATCM XLIII - CEP XXIII (2021)

United Kingdom (1991): Trends in Antarctic tourism. XVI ATCM IP38.

United Kingdom, Argentina, Chile & IAATO. (2021). Data collection and reporting on yachting activity in Antarctica in 2019-20 and 2020-21. ATCM XLIII - CEP XXIII Paris (2021) IP054

Media articles

Marcus, L. (24 November 2021). Airbus A340 plane lands on Antarctica for first time. https://edition.cnn.com/travel/article/first-airbus-a340-plane-antarctica-intl-hnk/index.html. Accessed December 2021.

Walters, T. (25 October 2021). Dossier, Battleground Antarctica parts 1-2. Using Cape Town as a launchpad, Russia boasts of supergiant oil fields in Antarctic wilderness. https://www.dailymaverick.co.za/article/2021-10-25-using-cape-town-as-a-launchpad-russia-boasts-of-supergiant-oil-fields-in-antarctic-wilderness/. Accessed December 2021.

ENDNOTES

1. This analysis reflects the perspectives of ENGOs active in Antarctica as outlined in their policy papers. It does not represent the past or present views of these organizations, but rather my own take on them.

2. ASOC is formally an "Expert" to the ATCM, and an "Observer" to meetings of the CEP and CCAMLR and related bodies. In practice is able to attend proceedings and express its expert opinion verbally and in writing, but is not involved in decision making.

3. I participated as an expedition member in the second half of the first leg as a returning wintering-over staff (from Ross Island back to New Zealand), and as an expedition co-coordinator in the second leg. The other co-coordinators in the second leg were Janet Dalziell and Dana K. Harmon. The expedition coordinator in the first leg was Vicki Getz. The ship's captain and ice pilot was Arne Sorensen. Kaye Dyson travelled as an observer with the Australian Antarctic Division expedition.

4. King George Island is also known by several other geographic names in Russian and Spanish.

5. Allied Whale, College of the Atlantic, Bar Harbor, Maine, USA.

8. Final Act of the Eleventh Antarctic Treaty Special Consultative Meeting, p.33.

9. CRAMRA was adopted and opened for signature on 2 June 1988. By the end of 1989 it had been signed by 14 ATCPs (out of 20) and by five NCPs (out of 13). One ATCP – the Democratic Republic of Germany – ceased to exist, and five ATCPs did not ratify it: Australia and France, which had first rejected CRAMRA under the leadership of Prime Ministers Hawke and Rocard, respectively, and Belgium, India and Italy.

10. See Final Report XXIV ATCM in 2001, para 126; Final report XXV ATCM in 2002, para 125; Final report XXXV ATCM in 2011, paras 61-63.

11. Greenpeace staff photographed this whale (AHWC-0092 in HappyWhale records) on 11 April 1991 at Andvord Bay, Antarctic Peninsula. The whale was photographed again in Wilhelmina Bay and nearby locations in February 2014, January 2019 and December 2019.

*

Climate Action in the Antarctic Treaty System: Responding to the Madrid Protocol and the contemporary crisis

Jessica O'Reilly

Abstract

Though the Madrid Protocol states that "activities in the Antarctic Treaty area shall be planned and conducted so as to avoid adverse effects on climate or weather patterns," the response of Antarctic Treaty Parties has been anaemic, and certainly not sufficient to the climate crisis at hand. This article traces the development of a formal climate response beginning with the Antarctic Treaty Meeting of Experts on Climate Change in 2010, and the subsequent Climate Change Response Work Program and Subsidiary Group on Climate Change Response. Climate work in the ATS has been energetic among a few leading Parties and individuals; however, this work has been increasingly stymied in recent years. Responses to meet the moment require some institutional changes within the ATS, such as representative intersessional work, the inclusion of greenhouse gas emissions and climate impacts in environmental impact assessment, assessing existing tools in the Madrid Protocol to strengthen climate resilience, and more transparent reporting, as well as broader and deeper engagement and serious action to meet the moment: including aligning Antarctic activities to Paris Agreement goals and setting, and adhering to, an ambitious carbon reduction target.

Key words

Antarctica, Antarctic Treaty, Antarctic Environmental Protection, Climate Change, Madrid Protocol

Introduction

Article 3.2.b.i of the Madrid Protocol, Environmental Principles, notes that "activities in the Antarctic Treaty area shall be planned and conducted so as to avoid adverse effects on climate or weather patterns." This is the only instance in the Protocol where climate is mentioned by name. Situating this document within the early history of international climate governance, the 1991 negotiation of the Madrid Protocol sits right in between the First Assessment Report of the Intergovernmental Panel on Climate Change (1990), where the state of climate science knowledge was reported, and the political response in the form of the United Nations Framework Convention on Climate Change (1992). The rest of the Madrid Protocol can be considered in terms of protecting Antarctic environment and ecosystems from climate change that originates from elsewhere, but in this singular mention of climate, the message is short, simple, and clear: human activities in the Antarctic, in both their planning and conduct, should avoid adverse effects on the climate.

As I reflect on future directions for climate action at this 30-year anniversary of the Madrid Protocol, I take the example of the Climate Change Work Response Program (CCRWP) —the only substantial, focused climate action taken by the Antarctic Treaty System (ATS) to date. This article tracks its origins at the 2010 Antarctic Treaty Meeting of Experts on Climate Change and follows its iterations at the Committed on Environmental Protection (CEP) and Antarctic Treaty Consultative Meetings (ATCMs) since. Despite the dedicated leadership and support for climate action in the Subsidiary Group on Climate Change Response (SGCCR), climate action in the ATS is generally confined to list-making, individual National Antarctic Programs making strides (or not), and discussions. The response of ATS climate change is inadequate, and even the small steps taken face strong resistance within the ATS. Using the progress achieved, along with the present obstacles, in this article I trace options for a climate response from the ATS that are sufficient to cope with the crisis we face.

Where Have We Been?

The Antarctic Treaty System's response to climate change has been slow overall, despite substantial leadership on the topic (Njåstad 2020). In 2010, Norway hosted an Antarctic Treaty Meeting of Experts (ATME) on Climate Change. Over three days in Svolvær, Norway, Antarctic climate experts representing many of the Parties and Observers to the ATCM shared views and prepared a list of recommendations that were included in the co-chairs' report to the ATCM a few months later.

The co-chair's report on the ATME (WP63, 2010) presented a list of 30 recommendations. In Table 1, below, I summarize the recommendations and added two additional analytical categories: 1) what are the types of actions being recommended? and 2) to whom is the ATME report making the recommendations?

	Summary	Type of action	Recomendation Addresses to:
1	ATCM acknowledges and welcomes SCAR ACCE report	Acknowledge, welcome	ATCM
2	Antarctic climate change communication plan	Consider, develop	ATCM
3	Sharing Antarctic climate information with other fora	Consider, provide information	ATCM
4	Energy efficiency, management, and "alternative" energy	Acknowledge, encourage, solicit, welcome	Parties
5	Quantify and publish energy efficiencies from programs	Encourage, quantify, publish	COMNAP
6	Evaluate wind regimes around stations to determine wind energy potential	Advise, evaluate	Parties
7	Risk assessment	Encourage	Parties
8	Consider climate change in EIA for new facilities	Request	Parties
9	Invite WMO to provide regular reports	Urge, invite	WMO
10	Expand climate research and connect with operation agencies like weather services	Advise, encourage	Parties
11	Maintain IPY levels of research	Urge	Parties
12	Climate modeling research	Request, encourage	Parties
13	Satellite observations, including demonstration at ATCM	Request, encourage	Parties
14	Integrated observation systems	Request, encourage	Parties
15	Collaborative data collection	Request, encourage, support access	Parties
16	Cooperate with Global Climate Observing System and IPCC	Request, encourage	Parties
17	Identify at-risk species, regions, and habitats	encourage	SCAR
18	Regional approach to environmental management tools	consider	ATCM and CEP
19	Climate Change Response Work Program	Consider, develop	CEP
20	Marine and terrestrial biodiversity surveys	Encourage, undertake, submit	ATCM, CEP
21	Climate data and information management	Consider, improve	CEP
22	Responding to non-native species	Consider, identify, implement, develop	CEP
23	Respond to climate impacts as they occur		
		Encourage, implement	Parties
24	Review existing management tools	Review	CEP
25	Systematic approach to protected areas	consider	CEP
26	Interim protection to newly exposed areas	Consider, advise	CEP
27	Surveying and monitoring	encourage	CEP, SC-CAMLR
28	Sharing data and information	Continue, develop	CEP, SC-CAMLR
29	Climate conservation tools used elsewhere	Remain aler	CEP
30	Make climate change an agenda item at ATCM and CEP	tconsider	Parties

Table 1. *2010 ATME Recommendations*

Many of these recommendations could be met through adjustments to the Environmental Impact Assessment (EIA) process articulated in the Madrid Protocol. For example, Parties would have to consider the issue in their planning and these topics would become part of the conversation in management plan approvals if greenhouse gas emissions and climate impacts from human activities were included in EIA. In addition, taking stock of greenhouse gas emissions using a standardized methodological approach could help the ATCM understand, and then aim to bring down, the continents' greenhouse gas emissions in line with the Paris Agreement long term global temperature goal (2015).

The overwhelming types of actions recommended in the ATME report are passive: acknowledge, consider, welcome, encourage various activities and responses to climate change. Even substantial recommendations like Recommendation 25 which encourages a systematic approach to protected areas that considers, among other issues, climate refugia, is activated only by the verb "consider." A few, namely the recommendations 1, 4, and 30, have been accomplished. Generally, requests from the ATME to simply "acknowledge" a report or an effort have been successful.

Additionally, many of the recommendations are to individual Parties. These can serve as suggestions but ultimately do not fall under the governance remit of the ATS.

I identified nine Recommendations that specified a clearer action than encouragement and that also were requested to the ATCM, the CEP, or both, summarized in the list below in my own words:

2. develop an Antarctic climate change communication plan
3. provide Antarctic climate information to other fora (presumably the UNFCCC)
19. develop a climate change response work program
20. undertake and submit biodiversity surveys
21. improve climate data and information management
22. develop a response to non-native species risks and events
24. review existing management tools

In my assessment, of these actionable items requested of the ATCM/CEP, there has been little to no progress in the 11 years since the 2010 ATME. An exception is Recommendation 19, suggesting that the CEP create a climate change response work program. In full, the recommendation reads:

Recommendation 19: The ATME recommends that the CEP considers developing a climate change response work program. Such a work program should attempt to incorporate, inter alia:

- The need to continue to afford a high priority to the management of non-native species;
- A classification of existing protected areas according to climate change vulnerability;
- The need for more sophisticated and coordinated ecosystem monitoring, including the need for increased collaboration between CEP and the Scientific Committee (SC)-CAMLR;
- A review of existing management tools to assess their continuing suitability in a climate change context (e.g. EIA guidelines -particularly with regard to planned long-term activities-, Specially Protected Species guidelines, and the guide to the preparation of management plans). (WP63, 2010).

Not only is the work program recommended, the underlying bullet points suggest particular foci for the work, all of which track back to other ATME recommendations. This recommendation, like the others, was put to intersessional work for several years following the ATME, as Parties considered how to proceed.

The home of strategic planning for climate change came to rest in the CCRWP. In 2015, the CEP—the environmental management body of the ATCM—agreed to turn the ATME Recommendations in the Climate Change Response Work Program (CCRWP). Resolution 4 (2015) asks the CEP to implement the CCRWP as a "matter of priority," specifically requesting the following from Parties:

> 1. encourage the CEP to begin implementing the CCRWP as a matter of priority, and provide annual progress reports to the Antarctic Treaty Consultative Meeting on its implementation;
>
> 2. request the CEP to keep the CCRWP under regular review, with the input of the SCAR and the Council of Managers of National Antarctic Programs (COMNAP) on scientific and practical matters respectively; and
>
> 3. give consideration, within their own national scientific funding systems and national Antarctic research programs, as to how they can address the research needs and actions identified in the CEP's CCRWP (ATCM, 2015).

Beginning in 2016, some of the CEP Members pushed to give the CCRWP more institutional heft in order to reflect the high priority some of the Antarctic Treaty states gave climate change, now made official by the ATCM. They mentioned creating a subsidiary group that would focus work on the CCRWP. While this places more emphasis on the CCRWP in the structure of the meetings and intersessional work, a subsidiary group also removes the topic from the main meeting, isolating it and at the same time it allows for more extensive and intensive attention.

The next year, China hosted the 2017 ATCM and the debate over a CCRWP subsidiary body received extensive discussion. The Subsidiary Group on Climate Change Response (SGCCR) was formed as a result. This group formalized work on climate change in the CEP, allowing for more extensive and intensive discussions and giving the topic more prominence at the meetings and in intersessional work. Conversely, as some Members noted the previous year, creating a subsidiary group also splintered the climate change debate from the main agenda of the CEP to a smaller set of interlocutors. This allowed Members to choose not to participate or even pay attention to the work at hand until it was brought forward to the main CEP meeting. Members also expressed concerns about the complex, technical form the CCRWP had taken and that it was only in English, not all four of the official AT languages (English, Spanish, French, and Russian).

The consequences were immediate. In particular, China became increasingly active at the CEP over the period of 2017 through the present, making interventions that appear to contest the accepted understandings of the Madrid Protocol. These interventions have also accelerated at the marine counterpart to the Antarctic Treaty, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) over the establishment of Marine Protected Areas. China has been

advocating for a "balanced approach" of conservation and commercial fishing in the CCAMLR Area. This "wise use" discourse seems to have migrated over to the ATCM/ CEP, even though there is no commercial harvesting from terrestrial Antarctica, nor does the Antarctic Treaty explicitly manage such activities (see also Roura et al., 2018). In 2019, China blocked three of the four proposals for the SGCCR, only allowing the formatting proposal to move forward (Norway and UK).

The 2020 ATCM was cancelled due to the coronavirus pandemic. In the intervening two years, the intersessional work on formatting the CCRWP proceeded. The reformatting project turned the CCRWP from a list of recommendations (2010) to a complex grid listing recommendations, priorities, and actions taken (2015) to a more streamlined, readable set of climate responses (2021). In the new format, the CCRWP issues are organized around 6 themes (non-native species, terrestrial environment, marine environment, species, built environment and emerging issues); each theme has a corresponding color and infographic. Under each theme rests a color-coded grid, similar to the first iteration of the CCRWP, but with shorter text, identifying the issue, gaps, activities, actions, lead institutions, prioritization, a timeframe, and a small colored square indicated how much progress has occurred for each action. Note, too, that the verbs in the sample of the reformatted CCRWP have become much more actionable: it is easier to discern a plan of work to meet these goals.

The reformatted CCRWP was prepared during the two-year intersessional period with several rounds of drafts offered for comment on the electronic workspace for the CEP and over email, with the UK, specifically CEP vice-chair Kevin Hughes, taking the lead. Participation was generally limited to the members of the SGCCR--Argentina, Australia, Belgium, France, Germany, New Zealand, Norway, Romania, South Africa, Spain, UK, USA and Uruguay—and four observer organizations—ASOC, IAATO, SCAR, and WMO. Intersessional work generally has limited participation, and participants are often self-selected from Global North countries. Selective participation in intersessional work, including at in-person events like the ATME, is an equity issue as well as a political strategy of limiting engagement to sideline the incremental, though seriously intentioned, work underway.

At the 2021 ATCM (held virtually), China blocked every climate-related proposal at the CEP meeting, including all elements of the SGCCR. These elements included endorsing a list of science needs, support for a website, and supporting continuing work. Because the formal negotiations have moved so slowly, Parties motivated to encourage climate action have sought alternate ways to communicate at the ATCM even as they have continued to press forward with papers submitted for discussion at the meetings. For example, the Scientific Committee on Antarctic Research (SCAR), which is an independent science advisory body, gives a lunchtime lecture during the first week of the ATCM. For the past two in-person ATCMs, Antarctic climate scientists have given two different lectures on the relationship between Antarctic science and the Paris Agreement. Even as the topic receives increasing discussion and visibility at the ATCMs, some Parties become more committed to preventing any formal climate action—substantive or symbolic—to proceed at the meetings.

Much of this information is difficult, if not impossible, to glean from the final reports of the ATCM. When I began attending the ATCM in 2006, opinions tended to be attributed to specific countries or other organizations: reporting in this style helped an outside observer gain a sense of the texture of the debate within the meetings. Recently, intentionally shorter and relatively blinded reports have

become easier to write and approve but fail to communicate the boundaries of discussions within the meetings. This choice has implications for transparency as well as for decision-making - and institutional memory.

In sum, Antarctic climate work to date has been deliberate, and primarily centered on identifying and organizing priorities. Much less work on implementing these priorities has taken place, which the CCRWP revisions clearly show. Despite earnest effort on the topic, agreement on climate action in the Antarctic Treaty System has been degraded, a clear consequence of geopolitical jockeying and attempts to re-interpret some of the entrenched understandings of environmental protection in the Antarctic.

Where Can We Go?

To date, the most substantial climate work conducted at the ATCM centers around planning and organizing the Climate Change Response Work Program. This document has matured over time and there has been strong leadership and participation, though the CEP Members participating is not representative of the entire Committee. In any case, the creation of the Subsidiary Group on Climate Change Response Program demonstrates institutional commitment to climate action within the ATCM.

This work, however, is insufficient to the crisis at hand—and the limited amount of work is increasingly blocked at the ATCM. Dislodging this impasse is a major priority to continued engagement of the ATCM in climate action at any level.

In the process of building consensus, proponents of a topic sometimes enter the conversation with lowered expectations and aspirations in the hopes of appearing reasonable and gaining support. However, conceding points ahead of deliberation keeps climate ambition continuously low. In the spirit of offering action items that meet the climate challenge with a robust response, I offer the following ideas for strategic direction in Antarctic climate action:

Continued improvement of the CCRWP, with broadening engagement in the SGCCR. In the CCRWP, CEP Members have come to an agreement on how to think about, organize, and implement climate action at the ATCM. Parties should work to engage the more reluctant countries year-round as a matter of priority, to support the CCRWP and to broaden, as well as deepen, engagement in the SGCCR. Members should set a goal of 100% representation of CEP Members and observer organizations in the SGCCR, including in intersessional work.

Climate impact assessment in all research, logistical, and tourist activities. All human activity in the Antarctic should be assessed for climate impact and the activity should mitigate the impacts to the extent practicable. The Madrid Protocol set a high bar for environmental impact assessment, considering a multitude of values. This value-centered approach to EIA allows implementers to consider the Antarctic environment holistically and to protect its values broadly. As a continent of exceptional wilderness and scientific import, the standard set by the Madrid Protocol EIA requirements rise to these qualities that have global significance. That the EIA—in the Madrid Protocol for land-based activities and elsewhere to encompass all shipping activities, including

fishing vessels—have not yet been adapted to more robustly respond to the rapidly changing global and Antarctic climate is a missed opportunity that can be easily rectified.

Use existing tools in the Protocol to strengthen climate resilience. Apart from EIA, Parties should comprehensively assess, and then use, the available management tools in the Protocol for responding to climate change. Annex II, Conservation of Antarctic Fauna and Flora, provides means to list Specially Protected Species and elaborates work on preventing the spread of non-native species. Annex V, Protected Areas, offers opportunities for protecting and managing areas which may be threatened by or experiencing climate impacts.

Improve transparency and public engagement in the Antarctic Treaty Consultative Meetings. Even since I began attending the ATCM in 2006, meeting reporting has become increasingly opaque; unless you personally attend the meeting, it is difficult to discern the terrain covered in conversations that take place. If an institution does not value transparency, rigor, communication, and accountability, it is difficult to transmit information to other institutions and actors, and to engage and develop public support. This matters for climate action, among other issues, as engagement with the public provides essential advocacy and pressure to meet essential standards of environmental quality. At a minimum, the CEP and ATCM should provide more robust meeting reports. Ideally, in line with other international environmental governance institutions, the ATCPs should consider inviting the International Institute of Sustainable Development to their meetings to produce Antarctic editions of their Earth Negotiations Bulletin. The sidelining of public engagement weakens the Antarctic Treaty System in terms of institutional legitimacy and credibility, and the lack of public pressure enables single States to block minimal climate action in the long term.

ATCPs should choose a carbon target and adhere to it. While Antarctic carbon emissions are low overall, because of the low human population there, Antarctic activities are carbon-intensive. Transport and heating in particular contribute significant carbon emissions due to the remote and cold characteristics of the continent. ATCPs should engage in calculating their carbon emissions, set a carbon reduction target consistent with the goals of the Paris Agreement, and meet it.

Align climate action to the standards set by other climate institutions. The Intergovernmental Panel on Climate Change (IPCC) updates its scientific assessments regularly, including its methodologies on greenhouse gas inventories. Through engagement with SCAR, the scientific standards employed by the IPCC should inform decision making around climate in the ATS. And while the ATS has uneasy relationships with UN institutions, since the ATS has failed to create its own climate standards, the ATS should align their climate work with the goals of the Paris Agreement. The ATS' capacity to deal with climate change needs to rapidly accelerate in order to meet the moment.

Conclusions

The Madrid Protocol was prescient in its mention of avoiding adverse effects on the climate in planning and conducting human activities in the Antarctic. Such planning gained coherence with the 2010 ATME on Climate Change and the resulting Climate Change Response Work Program and later, the Subsidiary Group on Climate Change Response. The ATCM's climate change response

centers on passive responses or responses that are not actually the responsibility of the ATCM, but of Parties or other organizations. The CCRWP, through a formal reformatting exercise, has become more explicitly focused on actionable items.

As this work has matured, however, it has met increasingly inflexible resistance at the CEP and ATCM. Therefore, to meet the climate crisis with an appropriate level of response, the ATCM needs to focus on institutional concerns as well as a stronger, clearer response to the threat at hand.

Institutionally, CEP Members and ATCM Parties have uneven participation in climate change issues. The formation of the SGCCR, while allowing for focused conversation, also cuts off holistic participation on the topic. Reporting at the meetings has become increasingly anemic, as leaders chose a "streamlined" approach to reporting meeting conversations. The limitation of participation both within and outside the ATCM prevents a full and vigorous debate on the topic, and blocks information from climate advocates.

To mount an appropriate response, ATCPs should continue working through a fully representative SGCCR to assess greenhouse gas emissions in Antarctica, including transit to and from the continent. Climate impacts should be assessed through the conventional channels of EIA and include a standardized means for accounting for greenhouse gas emissions. Once this information is available, Parties can set an emissions reduction target in line with or more ambitious than the Paris Agreement and adhere to it.

Antarctica has low carbon emissions but high carbon intensity. The spirit of the Paris Agreement implies that all places in the world have an obligation to cut their emissions as quickly as possible. Antarctica is not exempt from this obligation. The exceptional environmental and wilderness values of the Antarctic which we agreed to protect in the Madrid Protocol are at stake under current projections of global warming. The ATCM should take meaningful, robust action to protect these values.

Acknowledgements

Many thanks to Juan Lucci and Claire Christian for the invitation to write this piece, and to Ricardo Roura and Rodolfo Werner for their insightful comments on the draft.

References

Antarctic Treaty Consultative Meeting (1991). The Protocol on Environmental Protection to the Antarctic Treaty. Special Antarctic Treaty Consultative Meeting XI-4. Madrid, Spain.

Antarctic Treaty Consultative Meeting (2015). Resolution 4. Committee for Environmental Protection Climate Change Response Work Program. Antarctic Treaty Consultative Meeting XXXVIII. Sofia, Bulgaria.

Intergovernmental Panel on Climate Change (IPCC) (1990) 1990: Climate Change: The IPCC Scientific Assessment. J.T. Houghton, G.J. Jenkins and J.J. Ephraums (eds.), Cambridge University Press, Cambridge, United Kingdom, 365 pp.

Njåstad, Birgit (2020). An effort to make the impossible possible—managing Antarctica for climate change. Antarctic Affairs. 7:29-44.

Norway and United Kingdom (2010). Working Paper 63: Report from the Antarctic Treaty Meeting of Experts on Implications of Climate Change for Antarctic Management and Governance. Co-chairs' executive summary with advice for actions. Antarctic Treaty Consultative Meeting XXXIII. Punta del Este, Uruguay.

Norway and United Kingdom (2019). Working Paper 21: Overview of Outstanding ATME Recommendations. Antarctic Treaty Consultative Meeting XLII. Prague, Czech Republic.

Roura, R.M., Steenhuisen, F., & Bastmeijer, K. (2018). The shore is the limit: marine spatial protection in Antarctica under Annex V of the Environmental Protocol to the Antarctic Treaty. Polar Journal, 8(2), 289-314.

United Kingdom (2021). Working Paper 14: Report of the Subsidiary Group of Climate Change Response (SGCCR) 2019-2021. Antarctic Treaty Consultative Meeting XLIII. Paris, France.

United Nations (1992). United Nations Framework Convention on Climate Change. New York: United Nations, General Assembly.

United Nations Framework Convention on Climate Change (2015). Paris Agreement. 21st Conference of Parties to the UNFCCC. Paris, France.

Endnotes

1. WP21 of ATCM42 offers a slightly different assessment, noting that Recommendations 2, 5, 6, 7, 8, 10, 13, and 14 remain outstanding as of 2019.

2. There is current, ongoing work to declare Emperor Penguins a Specially Protected Species which would be progress under this topic.

*

How we talk about Antarctic Cultural Heritage

Susan Barr

ABSTRACT

The past few decades have shown a rise in questioning what heritage actually is, and what is implied – or should be implied – when using the term. The perception and use of the term cultural heritage have expanded likewise, and clear definitions can help to enhance academic understanding and discourses. The paper examines the terminology associated with cultural heritage both in the global context and in relation to Antarctica and discusses the various aspects of tangible and intangible heritage and the relation of both to the Antarctic nature and the Protocol on Environmental Protection to the Antarctic Treaty (the Madrid Protocol) that entered into force in 1998.

Key Words

Antarctica, Cultural heritage, Madrid Protocol, Terminology

Introduction

Academic knowledge, understanding, discourses and discussions of cultural heritage theory and practice can be enhanced through clear definitions and contextual examples. Both tangible heritage (material) and intangible heritage (immaterial, non-physical) aspects and values are applied when describing cultural heritage, with one aspect at times being attributed more significance than the other. The term heritage alone is also used as an all-embracing expression of how humans engage with the past - real, imagined or fabricated. This paper offers a discussion and explanation of the meanings and connotations of these terms seen particularly from the viewpoint of several decades of the author's professional work with the material cultural heritage of the Arctic and Antarctic. The various terms presented here relate both to global environments and to the polar areas, most specifically to the Antarctic.

UNESCO and global heritage work

Antarctica is not under the umbrella of the United Nations (UN) and its various bodies since the Antarctic Treaty nations have chosen to govern the continent through consensus amongst themselves. However, the Antarctic Treaty system (ATS) is aligned with the principles of the United Nations' Universal Declaration of Human Rights (United Nations 1949) in that the Treaty preamble states that the use of Antarctica shall be for "peaceful purposes only and the continuance of international harmony" (Antarctic Treaty 1959). The ATS is cognisant of the UN's ongoing endeavours and is influenced and informed by policy and practice from UN organisations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), as well as the International Council on Monuments and Sites (ICOMOS), the global NGO that advises UNESCO on cultural heritage matters.

The UNESCO World Heritage List (UNESCO WHC), the international equivalent of the ATS list of Historic Sites and Monuments (although also including natural sites), was started in 1978. It currently shows a total of 1154 properties which encompass 897 defined as cultural, 218 as natural and 39 as mixed. Together with the International Union for Conservation of Nature (IUCN) and the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), ICOMOS is an Advisory Body of the UNESCO World Heritage Committee. Cultural heritage, as defined widely by UNESCO, "is the legacy of physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and preserved for the benefit of future generations"[1]. The definition is widely used, as can be seen from web searches; an interesting example is a school in Zambia that has incorporated the definition into a poem about cultural heritage[2]. This UNESCO definition thus covers a broad spectrum of both physical (material) and intangible values that may be independent of each other.

Critical views on the 'heritage' term

The past few decades have shown a rise in questioning what heritage actually is, and what is implied – or should be implied – when using the term. The perception and use of the term cultural heritage have expanded likewise, at the same time as terms such as material/tangible, intangible, living heritage and even anti-heritage have broadened the field, and possibly helped at the same time to

confuse the issue.

The Association of Critical Heritage Studies (ACHS), formed in 2012, published a manifesto – also called a provocation – with the intention to "question the received wisdom of what heritage is" and "to critically engage with the proposition that heritage studies needs (sic) to be rebuilt from the ground up, which requires the 'ruthless criticism of everything existing'". The basic message is that:

> "Heritage is, as much as anything, a political act and we need to ask serious questions about the power relations that 'heritage' has all too often been invoked to sustain. Nationalism, imperialism, colonialism, cultural elitism, Western triumphalism, social exclusion based on class and ethnicity, and the fetishising of expert knowledge have all exerted strong influences on how heritage is used, defined and managed".

The argument is that heritage studies have been dominated by a "Western" and elite way of thinking and that many other interests have been marginalised and excluded (Critical Heritage Studies 2012). This endeavour, ironically centred in western academia, has proved to be both productive and problematic. In this the protection and conservation of the material sites and objects would seem to be left out of the discussion, or at least to take a very back-seat position.

The article Clarifying the critical in critical heritage studies published in 2013 (Winter 2013) argues that the focus of the critical should primarily be on "the critical issues that face the world today, the larger issues that bear upon and extend outwards from heritage". The author advocates the critical approach to the "socio-political complexities that enmesh heritage", but also argues for engagement with global challenges concerned with sustainability, economic inequalities, conflict and the future of cities. At the same time, he emphasises the need to recognise the challenges – and benefits – relating to the protection and preservation of "heritage itself" which he claims is dismissed too quickly or passed over by critical heritage theorists. Without facing this, he fears that:

> "critical heritage studies will become a marginal endeavour, by (further) alienating those working in the heritage sector outside academia. Working inside the academy, it is easy to forget that the overwhelming majority of institutions and resources related to both natural and cultural heritage focus on their conservation and preservation".

Rethinking academic theory and practice is admirable and necessary. Academic trends come and go – or can prove their sustainability – and, on the way, can bring the world forward. It cannot be denied, however, that they are also inclined to go through a series of foci such as, for example, post-modernism, gender, race, post-imperialism/colonialism, authorised heritage discourse, community, the intangible and more that give welcome inspiration. We must, however, retain the awareness that still-appropriate theories and methods do not need to be left by the wayside as we advance. Justification of new approaches is not necessarily found in rejecting and nullifying existing views. The current academic emphasis on the theoretical context of heritage stimulates good discussions. However, there is a disjunction with how to actually assess, protect and conserve the very places that give rise to the academic heritage profession and its associated activities. The questions asked in this new theoretical discourse are good ones, but they should also be enhanced with other intellectual

endeavours that in this context include the range of material culture studies, such as archaeology, architecture and artefact studies, to illuminate the past.

As emphasised by Antarctic heritage researcher Bryan Lintott (pers.com.), material culture has a potentially enduring permanence through which a range of ongoing scientific and humanities research questions may be addressed. In this context, retaining a representative sample, and broader record of, past material culture for future research is an ethical issue. How the representative sample is selected is of course an issue in itself.

A recent group of authors have analysed how tourists experience Antarctic heritage amongst other ways through social media information. Here they see the emphasis with regard to the relationship between the tourist experience and the heritage as concerning narratives that deal with the masculine image, the romantic new sublime and the feeling of loss of natural wilderness (Frame et al. 2021). The authors write here that heritage "is not a thing but a relation, a formally staged or communally valued encounter with the physical traces of the past in the present". This could seem to indicate that basically one (tourists) could experience the material traces only as a fleeting backdrop and devote attention instead to the stories (narratives) associated with an event or person. Heritage would thus seem to be simply what people relate to or value for intangible reasons, not the site or object itself. This is true to a certain extent, but not wholly since it could be interpreted as discounting the whole idea of protecting and conserving the physical elements, even though this is not necessarily meant by the authors. Such a definition of heritage would overlook or ignore the fact that it is the physical site or material object that produces the intangible 'heritage' response, and that the response would have a shaky existence without the physical/material presence. Indeed, the recent aggressive destruction of cultural and spiritual sites in the former-Yugoslavia and the Middle East, demonstrated the social and individual harm that results from the destruction of tangible heritage that is profoundly linked to intangible expressions of identity, culture, spirituality, continuity and place. The destruction of the Yuukan Gorge Cave in Australia in 2020 by the RioTinto mining company is an example provided by Michael Pearson that was connected to material gain rather than religious or political convictions. The cave was the only inland site in Australia with evidence of continuous human occupation for over 46,000 years. Both views of the relative importance of tangible and intangible can be drawn together with the understanding that strengthening the professional conservation and management of the physical/material is done with an awareness and appreciation of the human responses to it, that is, its intangible heritage dimension.

The concept of breaking down to build up better is not unknown, of course, from many walks of life and can be a successful method. In this case, apparently, relegating the material heritage to a second or lower place would risk losing not only the site or object itself, but also weakening the narratives - current and potential - that no longer have the material reality on which to be based; when the story comes to be retold by the next generation there will be no material evidence on which to base it. The narratives of Sir John Franklin's last voyage to seek the Northwest Passage north of North America in 1845 gave rise to a multitude of books, films, songs, paintings and more, and survived and grew to become legendary. Almost all the narrative has been dependent on the various discoveries of sites and associated artefacts that traced to a large extent the final fate of the doomed expedition. Without the material heritage the narrative would only be loose speculation based on what diverse narrators

imagined could have happened. Even the 2007 'historical novel' The Terror (Simmons 2007), with its theory of a supernatural horror being the ultimate nemesis of the expedition, relates closely to the sites and artefacts associated with the final months of the expedition. With the finding of the two sunken ships, HMS Erebus in 2014 and HMS Terror in 2016, the narrative took on a renewed actuality and caused excited anticipation of details which can be garnered from archaeological investigations of the wrecks. In the same way, many of those interested in Antarctic history hope that the wreck of Sir Ernest Shackleton's ship Endurance can be found. As technology connected to underwater investigation develops, fears were raised by cultural heritage professionals that this and other historically important wrecks could be located and possibly damaged by enthusiastic amateurs or others. As a consequence, the wreck of the Endurance was added to the Antarctic HSM List in 2019, despite its location, as of 2021, being unknown (ATSm), in the same way as Roald Amundsen's tent under the ice at or near to the South Pole was listed in 2005:

> "The tent as a material object is thus heritage of national value for Norwegians. Of equal importance is the intangible heritage value that lies in the image and the symbolism of the tent with its small flags waving in the wind at the Pole" (ATCM XXVIII, Norway. 2005. WP39).

This shows that, despite the narratives of these exceptional expeditions being well known and prioritised items of Antarctic history, the material evidence of the expeditions is still highly rated for protection even though they so far have not been located.

Many-facetted 'heritage'

In 1965 the International Council on Monuments and Sites (ICOMOS) was created as "an international non-governmental organization working for the conservation of monuments and sites around the world". The establishment was particularly driven by architects and "specialists of historic buildings" as the foundation history states (ICOMOS.org). Through the almost 60 years since then the areas of expertise within the organisation have increased through the establishment of 104 national committees and international scientific committees on 28 cultural heritage themes and issues ranging from rock art and stained glass, through fortifications and historic cities to risk preparedness and energy and sustainability. ICOMOS is based on the tangible (material) culture and includes intangible heritage among the values attached to the material heritage. The organisation introduces itself thus:

> "ICOMOS works for the conservation and protection of cultural heritage places. It is the only global non-government organisation of this kind, which is dedicated to promoting the application of theory, methodology, and scientific techniques to the conservation of the architectural and archaeological heritage" (ICOMOS.org).

The term places, as it occurs in ICOMOS' own description above, is a move away from the original – and European or 'Western' – emphasis on monumental buildings and sites which was more obvious in 1965 (ref. the Critical Heritage Studies statements above). In both New Zealand and Australia the charters produced by their national committees of ICOMOS reflect the reaction against the traditional European conservation philosophy. The ICOMOS New Zealand Charter for the

Conservation of Places of Cultural Heritage Value (last revised in 2010) and the Australia ICOMOS Burra Charter (1979 and revised three times since) refer to place, rather than monuments and sites. According to the Burra Charter place means a site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views. A wide range of physical or intangible attributes associated with a place may embody cultural heritage values (aesthetic, historic, scientific, social or spiritual value for past, present and future generations) (Burra Charter 2013). The New Zealand Charter states similarly that "places of cultural heritage value … areas, cultural landscapes and features, buildings and structures, gardens, archaeological sites, traditional sites, monuments, and sacred places are treasures of distinctive value that have accrued meanings over time" (New Zealand 2010). The Burra Charter also attaches cultural significance firmly to the place itself, "its fabric, setting, use, associations, meanings, records, related places and related objects". "Meanings", it states, "denote what a place signifies, indicates, evokes or expresses to people. Meanings generally relate to intangible dimensions such as symbolic qualities and memories".

The International Polar Heritage Committee (IPHC)

The International Polar Heritage Committee (IPHC) of ICOMOS was founded in 2000 and, in the same way as the ICOMOS Australia and New Zealand viewpoints above, the founders considered the term monuments in the ICOMOS name, as it is often understood, to fit badly with regard to the material heritage of the Arctic and Antarctic. However, in line with the apparent lack of controversy around the cultural heritage term 20 years ago, the IPHC was confident that the committee's name and its relationship to the ICOMOS association clearly indicated that the area of expertise and objectives was the material heritage, including archaeological evidence of this materiality. The ICOMOS International Committee on Industrial Heritage (ISCIH) has a similar approach with its name where it was not considered necessary to include 'cultural' in the title.

In an attempt at clarification with regard to the Antarctic situation the IPHC developed the following definitions, which reflect broadly accepted nomenclature and are applicable within the ATS (Barr 2018):

Monuments have traditionally been defined as buildings and built structures. They are perceived today within the heritage sphere to be all standing structures that have cultural heritage values.
Site is the setting in which the monument/s occur/s and which is directly related to the monument/s. Sites can also have values independent of monuments, such as containing evidence relating to human occupation or activities, or intangible values relating to important events or beliefs.

It can be added here that the above definitions are related to the Antarctic Historic Sites and Monuments system and that the terms are not necessarily entirely practical in the Antarctic setting. The use of place as defined above would help to avoid confusion around the reality of cultural heritage in Antarctica.

The archaeological heritage is that part of the material heritage in respect of which archaeological methods provide primary information. It comprises all vestiges of human existence and consists of places relating to all manifestations of human activity, abandoned structures, and remains of all kinds (including subterranean and underwater sites), together with all the portable cultural material

(artefacts) associated with them.

Memorials are established with the aim of ascribing significance to people, events or cultural traditions and include endeavours associated with achievement, loss and sacrifice (intangible heritage values). Globally, memorials range from plaques and artworks to philanthropic trusts which fund ongoing research. They may also be associated with a research institute, community facility or religious structure. An existing artefact or structure can be ascribed memorial status. In Antarctica, several memorials have been designated as historical sites and monuments. Many of them commemorate lives lost during exploration and science while others celebrate leadership, geographical, scientific and technological achievements. The Mount Erebus Cross, HSM 73, is a memorial to 257 lives lost when an Air New Zealand DC10, carrying tourists, crashed into the mountain. The naming of geographical features is another form of memorialisation, for example, the Hillary Coast and the Dufek Massif, as is the naming of many national programmes' Antarctic vessels. Within the HSM system memorials have undoubtably also been created to enhance national involvement and national heroes in Antarctica and the intangible significance of a number of memorials on the HSM List might be said to be the promotion of national interest.

Object and Artefact: Both objects and artefacts may be associated with cultural heritage. Whereas the term object can be applied to both natural and man-made or modified items, the term artefact is applied only to the latter. Both objects and artefacts may have cultural significance. For example, natural objects such as stones and whalebones that were used to make shelters for 19th century whalers are significant objects within the archaeological sites today. Artefacts will also be significant or not and this, as for objects, depends on associations with, for example, Antarctic history of science, human activities such as sealing and whaling, exploration, leadership, endurance or achievement, wide-ranging activity for knowledge, technical and architectural achievement, may reveal information, enhance public education, are symbolic to many nations and/or commemorative in a significant manner. As examples, the wardroom table in the Terra Nova Hut, Cape Evans (HSM 16) is a significant artefact as documented through iconic photographs and expeditioners' diaries. The supplies left on the Ross Ice Shelf by Amundsen, now considered to be archaeological heritage, also have an obvious significance, while more modern field supplies may need more careful consideration to determine significance. The distinction here between significant and non-significant, or indeed artefact and rubbish, should preferably be drawn through informed research and analysis (Pearson 2004).

Intangible heritage

The term intangible heritage refers to the wide range of values that are not directly embedded in the fabric of the site. If the term place is applied instead of site (or monument) it can be said that the intangible associations are considered to be part of the heritage values of the place. It can be applied to historical memories, knowledge of events, uses, processes, meanings and associations that relate to a place, and they may be related to the place itself or the material evidence on it. The spirit of a place, or genus loci, involves experiences that cannot be measured or explained by scientific methods. The intangible association itself is considered to be heritage of value.

The ICOMOS International Committee on Intangible Cultural Heritage (ICICH) was founded in

2003 and endorsed in 2005 to "promote international cooperation in the identification, study and solution of issues related to the ethical identification, protection, interpretation, and management of the intangible cultural associations attributed to monuments and sites" (ICOMOS.org).

Also in 2003 UNESCO adopted the Convention for the Safeguarding of the Intangible Cultural Heritage (UNESCO ICH). This is introduced with the explanation that:

> "The term 'cultural heritage' has changed content considerably in recent decades, partially owing to the instruments developed by UNESCO. Cultural heritage does not end at monuments and collections of objects. It also includes traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts. While fragile, intangible cultural heritage is an important factor in maintaining cultural diversity in the face of growing globalization. (sic) An understanding of the intangible cultural heritage of different communities helps with intercultural dialogue, and encourages mutual respect for other ways of life. The importance of intangible cultural heritage is not the cultural manifestation itself but rather the wealth of knowledge and skills that is transmitted through it from one generation to the next".

UNESCO thus acknowledges that their admirable eagerness to include 'all and everyone' in their heritage work has helped to change and broaden the traditional meaning of the term cultural heritage – and on the way to 'confuse the issue' as mentioned above. This widened acceptance of heritage by UNESCO would at the same time appear to contradict the provocation mentioned above that heritage studies have been dominated by a 'Western' elitism to the detriment of the 'marginalised and excluded' if we accept the developments during the past almost 20 years. A look at the list of ICOMOS International Scientific Committees also demonstrates the wide diversity of the cultural heritage that ICOMOS strives to protect and conserve (ICOMOS.org).

Following up on the Convention for the Safeguarding of the Intangible Cultural Heritage UNESCO has created a new listing called the Representative List of the Intangible Cultural Heritage of Humanity and also including a List of Intangible Cultural Heritage in Need of Urgent Safeguarding and a Register of Good Safeguarding Practices (UNESCO ICH, Lists). In 2020 there were 584 elements, as UNESCO calls them, on the combined lists representing 131 countries. The lists are exciting reading and the range is wide, with traditional skills, song and dance as obvious elements and others such as "Knowledge, know-how and practices pertaining to the production and consumption of couscous" and "Camel racing, a social practice and a festive heritage associated with camels" as two of many further listings.

In 1992 UNESCO established the Memory of the World Programme (UNESCO MOW) "from a growing awareness of the parlous state of preservation of, and access to, documentary heritage in various parts of the world. War and social upheaval, as well as severe lack of resources, have worsened problems which have existed for centuries". The Memory of the World Register was started in 1995 and by 2018 it contained a total of 527 items from 84 countries. Included from Norway is the

original film material of Roald Amundsen's South Pole Expedition (1910-12) which "documents a great historic achievement, outside the borders of the civilized world and in an extreme climatic environment". From New Zealand the Sir Edmund Hillary Archive contains correspondence, diaries, drafts of books, lists of expedition supplies, scrapbooks, lecture notes and original photographs giving a first-hand account of his endeavours in Antarctica and elsewhere. It is noteworthy that the items listed on this Register are tangible, but their value lies in the intangible associations, memories and meanings they denote.

'Historic' and 'Heritage' in Antarctica

The Protocol on Environmental Protection to the Antarctic Treaty, also called the Madrid Protocol (Protocol on Environmental Protection to the Antarctic Treaty, 4 October 1991, 30 ILM 1461 (entered into force 14 January 1998)), and its Annex V on Area Protection and Management both use the term historic connected with significance and values. Only around the mid-2000s did the Antarctic Treaty System (ATS) documents start using the term heritage (for example in the Norwegian documents relating to Amundsen's Tent), and occasionally combine it with historic, that is, historic and heritage values, without seemingly seeing these as two different matters. Historic is only one aspect of the values that may be attributed to heritage and heritage values are attributed to both tangible and intangible cultural heritage as mentioned above.

The traditional term monuments and sites is used in the Antarctic Treaty System as "historic sites and monuments" (HSMs). A study of the HSM list (ATSm) reveals both limitations of definition and the political/nationalistic underpinnings implied in the first term as it is used in Antarctica (Senatore and Zarankin 2011). The 2018 Guidelines for assessment and management of heritage in Antarctica is the most rounded use of the concept of 'heritage', and tacitly accepts a range of values through associating heritage value with the criteria developed for the HSM listing assessment in 2009. Its aim is to assist the Committee for Environmental Protection (CEP) and Parties in reaching the overarching vision "To recognise, manage, conserve and promote Antarctic heritage for the benefit of current and future generations." However, it still has the odd lapse in suggesting that 'heritage' and 'historic' exist as two separate things, rather than one being a subset of the other, and it reiterates the sites-monuments distinctions because they are enshrined in the ATCM policies and the Madrid Protocol. More recent approaches are more inclined to accept the difference between the two terms, while there are still some overlaps.

Intangible heritage in Antarctica

There is, however, a difficulty in applying the above intangible definitions to the cultural heritage in Antarctica. Within the ICOMOS polar heritage community the term intangible has a broader meaning than that described and defined by UNESCO and in the ICOMOS ICICH Charter which are narrowly focussed on community practice and ownership and where it is communities who identify intangible heritage values. Social practices and community traditions are emphasised rather than a broader perspective on the non-material values of sites such as those in Antarctica. The trend to capture all of intangible into a local community context is a selective reading of what intangible is really about – it is undoubtedly important, but not the full extent and importance of intangible.

The UNESCO definition of intangible heritage is more in line with the social science interpretation of heritage where the material can be subordinate to the history and narratives associated with the material/tangible site and object, as stated above by Frame et al. Archaeologists and other cultural heritage professionals dealing with the physical sites and material remains understand the intangible dimensions as associations and symbolic meanings that are not directly readable in the fabric, but are evoked by a combination of physical, historical, photographic, environmental and aesthetic characteristics. They can give a deeper experience of the physical when related with the physical/tangible as the starting point, and a better understanding of why the physical is significant.

The absence of what can be defined as a local and caring community in Antarctica in the sense used by UNESCO and the ICICH Charter has been commented on with regard to the draft ICUCH Charter by the IPHC through its president Michael Pearson (written communications to those responsible 23.9.2020 and 5.2.2021). Pearson pointed out that by using the current definitions in the Charter, and indeed in the Convention, there is no intangible heritage in Antarctica if it is necessarily associated with a living local community.

Examples of intangible values in Antarctic cultural heritage could, however, be the site on Peter I Island where a flagpole and a small hut were erected during the first landing on the island in 1929. This was placed on the HSM list (No. 25) but removed when it was confirmed that the flagpole and hut had disappeared. The site itself still has historical significance even though there is no material evidence remaining there[3]. Further the HSM listing of Mawson's Huts landscape (No. 77 Cape Denison) identifies the cultural landscape as part of the HSM because of the intangible associations with and symbolism of the "context of the extreme isolation and harsh conditions endured by the expedition members and, by association, all other 'heroic age' researchers and explorers". The Cape Denison site was the site of the base of the Australasian Antarctic Expedition (AAE) of 1911-14 organised and led by Dr (later Sir) Douglas Mawson where the intangible values were incorporated in 2014 in the original listing from 2004. "In designating the entire area as an ASPA, Cape Denison's unique 'sense of place' is protected, with Mawson's Huts and Boat Harbour as the focus of the visual catchment." This is identified as aesthetic value rather than intangible, even though the latter term had been used in the designation of Amundsen's tent in 2005 quoted above. Known traditionally as 'the windiest place on earth', the site epitomises the image of the human foothold on the edge of the polar wilderness (Barr & Pearson 2021).

Narrating the intangible

Who or what then is or should be the ultimate bearer, defender and/or translator of the intangible in Antarctica? In the UNESCO Convention context it is overwhelmingly the local community that has this role, although it also allows for groups and, in some cases, individuals who recognize the place as part of their cultural heritage. In the Antarctic context one could see the responsible manager of a site as the legitimate transmitter of the intangible associations and meanings, although the challenge here is that managers come and go, and the relevant information is not always passed on. There is no permanent local community, no indigenous owners, not even any cohesive group of people such as expeditioners who could take a caretaking role, and most national claims to 'ownership' are either strictly legal or opportunistic politics, rather than culturally based.

Since the material heritage of human activities in Antarctica has all been brought into the continent by persons and groups who came from other continents and returned northwards after the ended season or expedition (those who survived), it will to a large extent have its explanations and cultural associations in those other areas. Buildings, materials, equipment and other artefacts were not native to Antarctica. Exceptions are the rough and ready sealers' dwellings that used local stones and whale bones in their constructions, although often together with spars and sails from their transport ships. The 'local communities' that can inform about and maintain the traditions, for example, of the materials and building methods of Carsten Borchgrevink's huts at Cape Adare (HSM No. 22), are not found in Antarctica but in this case in Norway. Similarly, artefacts will have their origins and explanations in communities outside Antarctica in the same way as activities such as sealing and whaling have their origins in global rather than local industries.

The question also arises as to how the intangible can be qualified in Antarctica. In many cases it needs interpretation, and this can differ according to the interpreter. Considering the lack of a permanent population, how can the intangible be passed on? Often it is committed to paper or other fixed medium and becomes 'history' or tradition through media such as poems, novels, travel literature and films. There are also many organisations with a changing membership mass but with a culture that is passed on. There is, ultimately, the broader related community of Antarcticans (explorers, scientists, military and civilian support persons as well as dedicated visitors to the continent who carry and pass on histories and traditions) who can be seen as a 'group' as mentioned in the UNESCO Convention context, but this is not necessarily always cohesive and the interpretations and histories can vary considerably between groups and individuals.

Although in other contexts the intangible aspects of, for example, indigenous sacred knowledge associated with place (covered by the UNESCO Convention), are commonly kept secret and not made available to the uninitiated, in Antarctica the intangible associations should be more obvious, and able to be shared. There is indeed increasing interest among southern indigenous peoples on how to engage with Antarctica, as exemplified by the Māori carving whakairo that frames the entrance to New Zealand's Scott Base on Ross Island (Wehi et al. 2021a and Wehi et al. 2021b). An historical object or site usually has documented historical associations with named people, activities and events, but it also has the power to evoke the human/environment linkage – the human foothold on the edge of the polar wilderness being an obvious example of intangible associations that are experienced rather than intellectualised; embodied in the term sense of place that is used by ICOMOS. It may on the other hand be argued that the term wilderness is an intangible that is not well or consistently defined, so why should the human/nature associations be specifically defined? Maybe the intangible should be intuitive and independent of interpreters in their various forms?

Relating to the tangible/intangible values

In sum, the tangible and the intangible values of Antarctica's material cultural heritage can be debated in many ways. What does each approach offer and how does the one relate to the other? Can one be more important than the other? How are the different types of values to be recognised, protected and conserved? How do tourists and other observers react to the one or other set of values and where does the significance lie for individuals who experience the sites and monuments in Antarctica?

Such questions have been posed in a variety of questionnaires through the years and most recently in the published paper concerning "Tourism and heritage in Antarctica: exploring cultural, natural and subliminal experiences" (Frame et al. 2021). The paper argues that "while cultural heritage is an important component of an increasingly commodified tourist offering, it is only part of an assemblage of elements which combine to create a subliminal and largely intangible (this author's highlighting) Antarctic experience" (ie: for the tourists). The authors ask what role cultural heritage plays in Antarctic tourism and what kind of narratives are engaged in heritage construction through the discursive practices of three main actors: the Antarctic governance regime, the tourist industry and the tourists themselves. The conclusion is that:

> "cultural heritage, along with wildlife and landscape, provides an assemblage of complementary elements that define the touristic Antarctic experience, in itself pre-mediated by the tourism industry, media and pre-existing UGC [User Generated Content such as Facebook]. Obviously, the elements will have varying importance within the tourist population but not, it appears, sufficiently for operators to frequently market differentiated cultural heritage tours".

Cultural heritage professionals also entrench the cultural heritage firmly in the nature and land- and icescape without raising the intangible dimension above the tangible, material heritage itself. However, the last conclusion regarding differentiated cultural heritage tours would seem to be off the mark. The tourists go to the Heroic Era huts – the main and iconic examples of Antarctic cultural heritage – to experience the huts. That they are overwhelmed by the location, the surrounding environment and the emotive responses to the historical reality are all aspects of responding to the sense of place, integrating both tangible and intangible. If the huts were not there in the first place the tourists would not go there, but would go to penguin rookeries, for example. There is no need for tour operators to create 'differentiated cultural heritage tours' when they know where the nature/culture 'wow' factor is already to be found, ie: at the historic huts. From the point of view of the cultural heritage professional (and it is to be hoped the managers of Antarctica) the role is not to focus on what makes for good tourism, but to identify and protect the range of cultural heritage sites and their values, knowing that many if not the overwhelming majority will never be visited by tourists.

Nature/culture

It can thus be seen that the term heritage has come to be used in many ways and referring to both expressions of human activity (culture) and to nature, as in the UNESCO World Heritage List. The almost inseparable connection between nature and culture, not least in the polar areas, was recognised already during the discussions at the ICOMOS 12th General Assembly in Mexico in 1999 when the founding of a polar committee was debated. The consensus was that such a committee should seek to ally itself with the International Union for Conservation of Nature. At the time it was also discussed whether a polar group should be formed under the ICOMOS International Scientific Committee for Historic Gardens and Landscapes (now Cultural Landscapes ISCCL) (pers.com. this author). The intertwining of nature and culture in the Arctic and Antarctic has been emphasised many times in both publications from the IPHC itself (IPHC 2004, 2011, 2008) and in many other books and articles by IPHC members and others through the years, by this author more recently in, for example, Barr 2018 and Barr & Pearson 2021.

As far back as 1993 this author pointed out during a presentation at the 5th World Wilderness Congress in Tromsø, Norway how the seeming 'wilderness' of the Arctic is strewn with cultural heritage (material remains of human activities) and stated that "The arctic wilderness and cultural monuments are thus in many ways tied indissolubly together" (Barr 1994). Interestingly the Norwegian Arctic archipelago of Svalbard is still referred to as "Europe's last untouched wilderness" (Barr & Pearson 2021) while both the central Norwegian government and the Governor of Svalbard recognise that this 'wilderness' is in fact cultural landscape. As stated by the Governor: "On the basis of its internationally important natural and cultural heritage, Svalbard shall be one of the world's best-managed wilderness areas" (Governor of Svalbard).

In fact, the IPHC uttered a "welcome at last" sigh when ICOMOS began a few years ago to work centrally on the connection between nature and culture, even though many of its scientific committees had been dedicated to this aspect for years. Nature-culture has now become a focus theme for the international organisation, recognised on the website with the explanation that:
"In recent years, the work of ICOMOS has increasingly focused on the growing evidence that natural and cultural heritage are closely interconnected in most landscapes and seascapes, and that effective and lasting management and conservation of such heritage places depends on better integration of philosophies and procedures regarding their identification and management" (ICOMOS.org).

The statement can seem to indicate an almost unforgivably late awakening. Cooperation with IUCN on the theme has been prioritised and ICOMOS states that the organisation is highly engaged with this theme both internally and internationally.

Within the ATS there is also a need to rethink the HSM listing in this connection. With a few notable exceptions, such as the above-mentioned Mawson's Huts landscape, the listings have not embraced the nature/culture theme that is so obvious in Antarctica. Almost all HSMs are defined as a specific object or structure, perhaps with a very tight boundary around, and with no sense that the object or structure is relatively meaningless outside its Antarctic landscape setting and operational context. The sealing sites of the Byers peninsula, for example, would be far better defined as part of the surrounding landscape within its ASPA (Antarctic Specially Protected Area – see below) than as isolated HSMs.

Renewable/non-renewable

In addition to the term heritage being applied to both natural and cultural phenomena in UNESCO's World Heritage List, UNESCO also publishes a constantly updated list of World Heritage in Danger (UNESCO WHC). The List "is designed to inform the international community of conditions which threaten the very characteristics for which a property was inscribed on the World Heritage List, and to encourage corrective action". Currently 36 cultural properties and 16 natural have been inscribed on the list, a total of 52. Africa with four cultural and 11 natural properties and the Middle East with 21 cultural properties top the list. The many threats to cultural properties include serious deterioration of materials, loss of historical authenticity, armed conflict, and climate and other environmental factors. For natural heritage properties the threats include disease or poaching causing serious decline in the protected species, serious deterioration in the natural values of the property by

human intervention, armed conflict, and climate and other environmental factors. UNESCO states that "listing of a site as World Heritage in Danger allows the conservation community to respond to specific preservation needs in an efficient manner. Indeed, the mere prospect of inscribing a site on this List often proves to be effective and can incite rapid conservation action". So, in both cases it can be possible to rectify the potential threat or damage if this is acted on in time. Otherwise the natural or cultural property will be removed from the World Heritage List and yet another tangible site or monument is lost to mankind. Most recently, in July 2021, the English city of Liverpool was stripped of its status as a World Heritage Site – listed as Liverpool – Maritime Mercantile City – due to "the irreversible loss of attributes conveying the outstanding universal value of the property". The "outstanding universal value" of the historic centre and docklands was deemed to have been destroyed by new buildings, including Everton football club's new £500m stadium[4]. Liverpool was the third property to lose its World Heritage status after the Elbe Valley in Dresden, Germany and the Arabian Oryx Sanctuary in Oman. The latter was a natural property and was the first site ever to be deleted from UNESCO's World Heritage List. The reason for deletion was Oman's decision to reduce the size of the protected area by 90%. The site was originally inscribed in 1994 and was deleted in 2007. In 1996, the population of the Arabian Oryx in the site was at 450 but it since dwindled to 65 with only about four breeding pairs making its future viability uncertain. This decline was due to both poaching and habitat degradation (UNESCO WHC, News). Currently there is discussion as to whether the city of Venice in Italy should be added to the In Danger list owing mostly to the impact of tourism, in particular large cruise ships entering the lagoon[5].

Nature is constantly being lost all around us, not least due to human impact. Development eats up wilderness and relatively untouched nature and devastates populations of flora and fauna, everything from the Amazon jungle to bees and butterflies. At the same time it is a fact that partially destroyed or devastated nature can regenerate even though some species or natural phenomena get lost for ever. We see regeneration in such examples as the return of fur seals to South Georgia, which were once on the brink of extinction but now show a population of 5 to 7.5 million and still increasing[6], the gradual recovery of large whale species in Antarctic and sub-Antarctic waters where records suggest that in the 1830s there were around 27,000 humpback whales that were reduced by heavy hunting to only 450 by the mid-1950s, and which now seem to have reached the original number again[7], and fires that can be vital to healthy forest growth by removing underbrush and debris and delivering nutrients to the soil[8]. Of course, the current climate change effects that are being experienced around the world are leading to huge fires such as in Australia in 2019-20 when over 17 million hectares of bushland burned and over one billion mammals, birds and reptiles died[9]. California has suffered similarly and currently Siberia is burning. These fires are far larger and more devastating than before and cause long-term or even fatal setbacks to both flora and fauna. Yet, if a localised natural ecosystem or species is damaged or even lost, in most cases the environment will recover to some degree, but also the species and the ecosystem are rarely unique to that place – although it can happen – and other examples of those species and communities can exist or relocate to elsewhere to perpetuate the natural heritage.

On the other hand cultural heritage can be lost forever by a devastating fire, landslide, erosion or removal for site clearance. Many of the cultural heritage sites in the Arctic were established in their time close to seas and waterways and are now threatened or lost owing to the rapidly increasing

coastal and river erosion that is accentuated by climate change. Some buildings and structures can be saved by moving them further inland, although landscape and other associated values may be lost in the process, but archaeological sites can seldom be saved. A fire may leave a foundation or an imprint on the ground that can tell us something of the original structure, but the structure itself cannot regenerate. That site or structure loses the material factor that people respond to, together with the physical evidence of the past and our ability to understand and interpret it. With luck architect drawings or other documentation can help us visualise what once was, archaeology may give us more clues to the original, but even a true copy cannot be a complete replacement or clone of the original. The chance to examine the original material, perhaps uncover traces of an earlier structure or of significant markings on walls, to see how the builders have utilized a variety of available materials that in turn each tell of an earlier history, to see how the occupants have modified or used a building to suit changing needs, such research possibilities (which are also of extra interest to non-professionals) cannot be authentically recreated. Perhaps the overwhelming occurrence of what is termed Fake news has helped to emphasise the value of authenticity. There is, for example, a growing demand for marking retouched photographs, documentary scenes that are not true representations (for example, filming 'wild' scenes in a zoo or nature park) and historical events that are 'moved' from the original setting to another to accord more with the theme of a film. Advancements in film and photo technology confuse us as to what is true and authentic and what is a copy or re-enactment. True copies can give us a good experience, but nothing can beat the original, not least because this also incorporates the intangible values that expand and enrich the experience.

The Antarctic environmental regime

Recommendations relating to cultural heritage were formulated already at the first ATCM in 1961 (Documents.ats.aq 1961). The Madrid Protocol which was adopted in 1991 and came into force in 1998, and its Annex V on Area Protection and Management which entered into force in 2002, represented a big step forward for cultural heritage management, and further improvements have occurred during the 20 years since its entering into force (Barr 2018).

Annex V to the Protocol is the main platform for cultural heritage work after this time. The Annex contains mechanisms to designate and manage Antarctic Specially Protected Areas (ASPAs) on the basis of "outstanding environmental, scientific, historic, aesthetic or wilderness" values (Art. 3(1)). ASPAs represent the highest level of protection within the ATS and should include 'sites or monuments of recognised historic value' (Art. 3(2)). The management plans that are required for these areas are to include details of permits controlling entry to the area and "the collection or removal of anything not brought into the area by the permit-holder". The management plans are also to be reviewed regularly. The Annex also makes it possible to designate Antarctic Specially Managed Areas (ASMAs), which may include "sites or monuments of recognised historic value" (Art. 4(1)(2)). ASMAs are intended to "assist in the planning and coordination of activities, avoid possible conflicts, improve coordination between parties or minimise environmental impacts". ASMAs can contain both ASPAs and HSMs, and although no permit is required to enter an ASMA, the management plan for the area should be followed. The ASPAs and ASMAs at present inadequately cover the need for effective protection of natural and cultural heritage sites. Seventy-two ASPAs, with 55% having an area of less than 5 km², and six ASMAs varying in size from circa 100 km² (Deception Island) to

26,344 km² (Amundsen-Scott South Pole Station) are not providing effective management of fragile areas (Hughes 2021). Since international consensus is required for designation, political ambitions can cause proposals to be shelved. The Fildes Peninsula on King George Island, one of the important areas for historical sealing sites, was unsuccessfully proposed for this reason (Senatore and Zarankin 2012).

Article 8 of Annex V more or less codified the existing HSM listing process but required that any historic site or monument identified as an ASPA or ASMA also be entered in the HSM List. The ASPA and ASMA designations give HSMs potentially far more protection than the older HSM designation by requiring management plans with a code of conduct (ASMAs) and conditions under which permits may be granted (ASPAs) for access and activities in the areas (Annex V to the Protocol, Art. 5(3)(i) and (j)). It has been used in this way, for example, at Mawson's Huts Site ASPA. The extended ASPA designation was intended to protect the intangible values lying in the documented historical associations with named people, activities and events, and also the power the site has to evoke the human/environment linkage. This procedure is particularly important for such sites as the sealing sites in the South Shetlands, none of which are on the HSM List even though their value as some of the earliest material remains from man's first activities on the continent is indisputable. Archaeological sites like these can obviously not be removed from Antarctica, and destruction would remove a cornerstone from our possibilities for understanding and describing the sealing activities dating from the early 19th century. This historical period in Antarctica has few other sources of detailed knowledge concerning the sealing practice on land and the methods used by the sealers for facilitating their work and helping to ensure their own survival.

In May 2018 an Intersessional Contact Group (ICG) of the Committee for Environmental Protection (CEP) submitted for discussion at the XLI ATCM in Buenos Aires draft Guidelines for the Assessment and Management of Heritage in Antarctica with the two objectives: (1) to decide whether a site/object merits/requires/needs HSM designation and (2) what management options are available for various heritage objects. With the adoption of Resolution 2 (2018), the ATCM accepted the Guidelines and thus gave cultural heritage management in Antarctica a huge lift forward (Att643_e.pdf). The Guidelines reiterated the need identified in the Madrid Protocol Annex V to declare any historic sites located within ASPAs or ASMAs as HSM. Yet this has not occurred in the case of the sealing sites within the Byers Peninsula ASPA, despite the fact that the historic value of the sites is recognised in the ASPA Management Plan as contributing to the overall values of the ASPA. The reason for this failure may relate to the essentially political nature of an HSM declaration (Senatore 2019).

Relocation of cultural heritage and external representations of nature and cultural heritage

In a paper entitled "Twenty years of protection of historic values in Antarctica under the Madrid Protocol" (Barr 2018) this author discussed whether alternative methods of preserving material heritage should be considered in certain specific cases. The background was the fact that the number of monuments and sites that become listed as HSMs continues to rise and additionally that seven of the ten monuments to be listed from 2009 to 2015 are related to scientific bases and activities from after the IGY, with over half from the 1980s. It was therefore suggested by the ICG that alternative methods could be considered in appropriate cases and Barr (2018) addressed this suggestion.

Some monuments and sites whose construction technology and history are well documented can be digitally and archivally preserved for the future and thus available to a far wider audience of scholars and the interested public through 3D animations and virtual reality tours. Others might be better conserved and certainly more accessible by being removed to appropriate museums or other institutions outside Antarctica. Such a method could, for example, have been considered for the 2015 listing of the Russian oversnow heavy tractor (belted vehicle) 'Kharkovchanka' that was used in Antarctica from 1959 to 2010. The arguments for preserving such a mobile artefact at a polar museum in Russia could seem to outweigh the challenges of preserving it in situ and would make it available for the benefit of a wide audience, especially since it is described on the HSM List as 'a unique historical sample of engineering-technical developments made for exploration of Antarctica'. In many existing polar exhibitions the natural aspects of cold temperatures, landscapes, wind and sound are already produced in order to give the visitors a feeling of actually being in Antarctica (or the Arctic), and Virtual Reality (VR) is steadily being developed.

Although discussed within the CEP and in regard to the Madrid Protocol, this is not the only alternative to new HSM listings within the Treaty system and it may not receive much acceptance in cases where nations consider it advantageous to sustain their historical presence in Antarctica. From a cultural heritage point of view it is also unrealistic or professionally unacceptable in many cases. The finding and removal of Amundsen's South Pole tent was seriously discussed in 1993 when a private expedition proposed having it exhibited at the 1994 Winter Olympics in Norway (Barr 2021). The outcry in Norway against the plan, which would have decimated the intangible values of the image of the lonely tent at the South Pole and all it represented, ultimately led to the tent's inscription on the HSM list in 2005 even though it had not been seen since Robert F. Scott's party reached the Pole in January 1912, and despite the current location not being known. There is also the reality that many sites have an intangible associated sense of place that cannot be preserved by either digital representation or removal to museums.

Conclusion

The cultural heritage of the Antarctic consists of what are traditionally called monuments and sites, or in the HSM context Historic Sites and Monuments. This descriptor (sites and monuments) sits uneasily given the development of conservation philosophy internationally since the terms were adopted by the ATS. The HSM listing does not encompass all Antarctic cultural heritage worthy of listing and protection, and indeed it can also be said that many of the listed sites would never have been accepted by cultural heritage professionals. This of course reflects the politics of Antarctica. However, the possibility provided in Annex V of the Madrid Protocol of including sites in protected areas under the ASPA designation should help to secure some important heritage sites that have been in danger of being damaged by human impact, or that have not been regarded as of sufficient national interest to justify nomination for the HSM List. A thorough rethinking of the listing system with the assistance of professional cultural heritage expertise would be of huge benefit to the totality of Antarctic cultural heritage. Some of the potential topics for an evolving heritage regime within the ATS were foreshadowed in the discussion paper accompanying the 2018 Guidelines for the assessment and management of heritage in Antarctica (ATCM41_wp020_e).

The intertwining of culture and nature in Antarctica is obvious. Sites that would appear fairly mundane in more temperate areas, such as the explorers' huts of the Heroic Era, obtain an aura and deeper meaning where they are located for example in 'the windiest place on earth' (Mawson's Huts), also famously known as 'The Home of the Blizzard'. Carsten Borchgrevink's huts at Cape Adare, the first buildings to be erected on the continent (1899), are difficult to access owing to hazardous landing conditions and the largest Adélie penguin rookery in the world that surrounds the huts. These very natural conditions accentuate the history of the expedition that overwintered in challenging circumstances as the first scientific expedition to do so on the continent. The Scott and Shackleton huts on Ross Island sit between the grandeur of Mt Erebus and the mountain ranges visible across McMurdo Sound, and have a sense of place that could never be recreated in any other locality.

At the same time the examples above point to the intangible dimensions of the material cultural heritage, where the narratives behind the physical sites and monuments add a deeper level of experience to the existence of the material. Neither tangible nor intangible heritage exists fully without the other dimension. But without the tangible heritage the intangible would exist only as narratives, to be told and interpreted in the various ways chosen by the various narrators.

Acknowledgements

The author is extremely grateful to colleagues Mike Pearson, Bryan Lintott and Ximena Senatore for their wise and helpful comments and examples. In addition the two reviewers have helped to tighten up the text.

References

Antarctic Treaty (1959). Washington. https://documents.ats.aq/keydocs/vol_1/vol1_2_AT_Antarctic_Treaty_e.pdf

ATSm. Antarctic Treaty System, Area Protection and Management / Monuments. https://www.ats.aq/e/protected.html

Barr, S. (1994). Historical and Cultural Aspects of Conservation of Arctic Wilderness Areas. ICOMOS Nytt 1/94, 4-7, and DN-Notat 1994-13, 57-62, Strategies for Protecting Arctic Wilderness.

Barr, S. (2018). Twenty years of protection of historic values in Antarctica under the Madrid Protocol. The Polar Journal, 8:2, 241-264, DOI: 10.1080/2154896X.2018.1541547

Barr, S. (2021). Roald Amundsen's Tent at the South Pole. Antarctic Resolution. Ed. Giulia Foscari/UNLESS,540-543.

Barr, S. & Pearson, M. (2021). The Polar Regions. Routledge Handbook of Cultural Landscapes. Eds. Cari Goetcheus and Steve Brown (In print).

Burra Charter (2013). The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance.

CEP Handbook. ATS documents, Annex V.

Critical Heritage Studies (2012). https://www.criticalheritagestudies.org

Documents.ats.aq (1961). https://documents.ats.aq/ATCM1/fr/ATCM1_fr001_e.pdf

Frame, B., Liggett, D., Lindström, K., Roura, R.M. & van der Watt, L.-M. (2021). Tourism and heritage in Antarctica: exploring cultural, natural and subliminal experiences. Polar Geography, DOI:

10.1080/1088937X.2021.1918787.

Governor of Svalbard: Environmental protection. Available from:

https://www.sysselmesteren.no/en/the-governor-of-svalbard/environmental-protection/

Hughes, K. A. (2021). The Role and Impact of Antarctic Specially Protected Areas and Antarctic Specially

Managed Areas. Antarctic Resolution, Ed. Giulia Foscari/UNLESS, 139-140.

ICOMOS.org. https://www.icomos.org/en/about-icomos/mission-and-vision/mission-and-vision

IPHC (2004), Barr, S. & Chaplin, P. (Eds.). Cultural heritage in the Arctic and Antarctic regions. ICOMOS Monuments and Sites VIII, International Polar Heritage Committee.

IPHC (2008), Barr, S. & Chaplin, P. (Eds.). Historical Polar Bases – Preservation and Management. ICOMOS Monuments and Sites XVII. International Polar Heritage Committee.

IPHC (2011), Barr, S. & Chaplin, P. (Eds.). Polar Settlements – Location, techniques and conservation. International Polar Heritage Committee.

Lintott, B. (2020). Commemorating the Ross Sea Party: Antarctic heritage and international relations. The Polar Journal, 2020, Vol. 10, No. 1: 153-175, https://doi.org/10.1080/2154896X.2020.1757819. Routledge

New Zealand (2010). ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value.

Pearson, M. (2004). Artefact or Rubbish – A Dilemma for Antarctic Managers. Cultural heritage in the Arctic and Antarctic regions, ICOMOS Monuments and Sites VIII. International Polar Heritage Committee, 39-43.

Senatore, M. X. (2018). Antarctic Historical Sealing and Material Culture. Historical Antarctic Sealing Industry, 61–71. Scott Polar Research Institute.

Senatore, M. X. & Zarankin, A. (2011): Widening the Scope of the Antarctic Heritage: Archaeology and the "The Ugly, The Dirty and The Evil" in Antarctic History. IPHC, 51-59.

Senatore, M. X. & Zarankin, A. (2012). Tourism and the invisible historic sites in Antarctica. Results of ICOMOS 17th General Assembly, Paris, France.

Senatore, M.X. (2019). Archaeologies in Antarctica from Nostalgia to Capitalism: A Review. International

Journal of Historical Archaeology (2019) 23:755–771, https://doi.org/10.1007/s10761-019-00499-7.

Simmons, D. (2007). The Terror. New York, Boston, London.

UNESCO ICH (2003). https://ich.unesco.org/en/convention#art2

UNESCO MOW. https://en.unesco.org/programme/mow

UNESCO WHC. https://whc.unesco.org/en/list/

United Nations (1949). Universal Declaration of Human Rights.

Wehi, P., Hetaraka, T.W., Robinson, F., Hetaraka, P., York, J. (2021a). Māori Culture in Antarctica. Preserving Knowledge and Papat¬ūānuku. Antarctic Resolution, Ed. GiuliaFoscari/UNLESS, 536.

Wehi, P.M., van Uitregt, V., Scott, N.J. et al., (2021b): Transforming Antarctic management and policy with an Indigenous Māori lens. Nat Ecol Evol 5, 1055–1059 (2021). https://doi.org/10.1038/s41559-021-01466-4.

Winter, T. (2013). Clarifying the critical in critical heritage studies. International Journal of Heritage Studies, 2013, Vol. 19, No. 6, 532–545, http://dx.doi.org/10.1080/13527258.2012.720997

Endnotes

1. http://www.unesco.org/new/en/%20cairo/culture/tangible-cultural-heritage/
2. https://www.iccrom.org/video/what-heritage-poem-written-and-performed-students-lupani-school
3. One reviewer questioned whether this is not speculative, ie: that suggestions of intangible values are presented to justify the categorization of historical significance as intangible heritage for the sake of disappeared substance. However, every 'colonial' country has its 'discovery' place where Europeans first arrived, and in every case there is no physical evidence of the event. They are nonetheless regarded as foundational 'historic sites'. Examples are Plymouth Rock (the Mayflower landing site in Massachusetts) and James Cook's Botany Bay landing site in Australia
4.https://en.unesco.org/news/world-heritage-committee-deletes-liverpool-maritime-mercantile-city-unescos-world-heritage-list
5.https://www.theartnewspaper.com/comment/now-is-the-time-for-unesco-to-call-the-venetian-authorities-to-order
6.https://www.coolantarctica.com/Antarctica%20fact%20file/wildlife/southern_fur_seals.php
7.https://time.com/5837350/humpback-whales-recovery-hope-planet/
8.https://www.fire.ca.gov/media/5425/benifitsoffire.pdf
9.https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1920/Quick_Guides/AustralianBushfires

*

China and the Madrid Protocol, Past, Present and Future

Jiliang Chen, Nengye Liu

ABSTRACT

China's increasing presence in Antarctica and its more assertive approach in Antarctic Treaty processes has caused suspicion on its intentions, including its objectives in engaging the Madrid Protocol. This paper reviewed China's engagement, discourse and interest in mineral resources to understand the basis of China's position and the rationale of its more assertive stance. After reviewing the record of China's participation in the ATCMs, this paper argues that China position in the ATCMs has been consistent and its practice does not contradict the fundamental values and rules of the Antarctic Treaty or the Protocol so far. Its domestic political discourses suggests that China's anthropocentric and technocratic view of the environment is the basis for its "balancing protection and use" narrative. However, such a narrative does not challenge the core values of the ATS either. It is more relevant to China's political ambition than to its demand for minerals in the future. This paper suggests that a strategy document with openly and clearly defined interests, principles, and approaches from China would be helpful in facilitating policy collaboration in the ATS.

Key words

China, Antarctic Treaty System, Madrid Protocol, Environmental protection

Introduction

China's fast-growing logistical and scientific capability in Antarctica and more active participation in Antarctic affairs continue to draw attention and scrutiny[1]. In the last decade, China has added one icebreaker (Xuelong, or "Snow Dragon"-2)[2], one fixed-wing plane (Xueying, or "Snow Eagle"-601)[3], and a summer camp (Taishan Station) into its national polar program. China is also building a research station in the Ross Sea Region[4] and a satellite network (Binglu, or "Ice Pathfinder") on the orbit[5]. Observers of the Antarctic Treaty System (ATS) have been questioning China's intention behind its expanding presence in the white continent since before the new developments mentioned above[6].

At the same time, China has enhanced its participation in the Antarctic governance with increased numbers of paper submissions and interventions (Chen, 2021). In those engagements, China has been notably asserting the importance of using Antarctica in various fora. In recent years, China has been pushing for striking a "balance between protection and use" during the meetings of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), especially in the negotiations on marine protected areas (MPAs). In the 40thAntarctic Treaty Consultative Meeting (ATCM) held in Beijing in 2017, China hosted a special meeting named "Our Antarctica: Protection and Utilization". China has published a white paper on its Antarctic activities at that ATCM. The whitepaper was specific about its activities but rhetorical about its objectives[7]. Vagaries in China's Antarctic policy have led to suspicions about the country's long-term ambition on the Antarctic Treaty Area, with some worried about the potential for destabilization of the Antarctic Treaty System regime caused by China's desire for mineral resources[8].

Much of this concern rests on the fate of the 1991 Madrid Protocol), which has just marked its 30th anniversary. Known formally as the Protocol on Environmental Protection to the Antarctic Treaty[9], one the great achievement of this agreement is protecting Antarctica's unique and vulnerable environment under a prohibition of mineral resource activities, widely known as a mining ban. However, Article 25 provides an opportunity to review the mining ban 50 years from the date of its entry into force of the Madrid Protocol, which is 2048. While that date might appear distant, there is persistent speculation about Beijing's intentions. Thus, at the 30th anniversary of the signing of the Madrid Protocol in 2021, it is worth discussing China's role in the negotiations for and under the Protocol and take stock for the future. This paper reviews China's participation in this regime, its political discourse, and its interest in mineral resources to understand the basis of China's position and the rationale of its more assertive stance.

China's Participation in the Negotiations

China became a Consultative Party to the Antarctic Treaty in 1985 when the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA) was being negotiated. It did not play an instrumental role in the negotiation but still left some footprints. For example, together with other developing states which newly joined the Antarctic Treaty, China successfully highlighted the interests of developing countries by making the reference of "the interest of the international community as a whole" in the preamble. The weight of the developing states was encoded in various articles, such as Article 62.1 and Article 29.3 of the agreed text of the CRAMRA convention (Beck, 1989). China even made the

Chinese version of the CRAMRA text as "para-text"[10]. According to the few statements recorded in the meeting reports, China welcomed the agreement of CRAMRA[11] and the negotiation for an environmental treaty . However, in its statement at the special consultative meeting, which concluded in the Protocol on Environmental Protection, China claimed that "the balance" of "rational use and protection" has been "institutionalized by the way of the Environment Protocol"[12].

China ratified the Madrid Protocol in 1994, which means Beijing has committed and adhered to the mining ban in Antarctica as established by Article 7. In the years since, it has been rare to find any public debate or discussion in China about Antarctic mining. Until 2009, a diplomat who oversaw Antarctic affairs published a paper in the Journal of Ocean University of China stating that "the protection of Antarctica should not be simply interpreted as no use, rather environment protection should serve the purpose of reasonable and sustainable use … The mining ban has won preparation time for China's peaceful use of Antarctic resources" (Wu, 2009). This reference to "preparation time" catches the eye, particularly in light of the review provisions under Article 25. Assuming China has been consistent in its Antarctic policy, the term "preparation time" might explain China's understanding of the "balance between rational use and protection" when the Madrid Protocol was adopted.

What also augurs well for the viability of the Madrid Protocol is the investment China has made in its processes. Stemming from the Protocol is the Committee for Environment Protection (CEP), an advisory body to the ATCM which meets every year. To date, China has made 113 submissions to the CEP/ATCM annual meetings, including 43 submissions since 2012 when President Xi Jinping took office. China has made a series of discrete proposals beyond simply reporting its activities or delivering a statement. For example, in 2007, Australia and China jointly proposed an Antarctic Specially Protected Area (ASPA) for Amanda Bay in the east of the continent (ASPA169), while China alone also proposed an ASPA for the area of Mount Harding, Grove Mountains (ASPA168).

An interesting case-study was China's 2013 proposal for a new Antarctic Specially Managed Area at Kunlun Station, Dome A[14], which led to a series of discussions and iterations up to 2019. Given the limited activities being conducted by other Parties to the Madrid Protocol in that area, China could not convince them of the need for a framework for coordination[15]. Even so, the failed bid still demonstrated an effort by Beijing to work within the system.

To summarize, China's understanding of the possibility of mining in Antarctica is consistent with the Madrid Protocol. Such understanding did not prevent China from actively engaging in the environmental protection regime. The recent years' contestations involving China do not indicate intentions to fundamentally challenge the rules of the system.

China's Domestic Discourse on Antarctica

To understand China's position on "balancing protection and use" and its participation in the ATS, in the absence of a public strategy, its political discourse and related political narratives can provide useful references.

Since the first Chinese Antarctic expedition, the national leader Deng Xiaoping's inscription "Make

a Contribution to the Peaceful Use of Antarctica for Humanity" has been the guiding slogan of the national Antarctic activities. The slogan framed the national ambition in an internationalist narrative and engraved the value of "peaceful use" into China's mission in Antarctica. In 2014, a new slogan of "Understand, Protect and Use (or exploit) Antarctica" was introduced by President Xi Jinping when he visited the Chinese polar research vessel in Hobart, Australia[16]. This slogan presents a pragmatic approach to the Antarctic. In the published texts, it now co-exists with Deng's slogan rather than replaces it. The updated narrative needs to be put into a broader context with narratives of environmental policy and foreign policy, and the political discourse since Xi took office in 2012.

China's current discourse on environmental protection shares the core value of "balancing protection and use". The "ecological civilization" (EC) as the dominant environmental narrative has been highlighted in the various top-level political documents and adopted in China's Constitution[17]. It represents an anthropocentric view of the environment (Chen, 2021). In elaborating the narrative in the Communist Party of China (CPC)'s documents, the conflict between development and environmental protection can be reconciled by properly recognizing nature's economic value. The natural spaces need to be protected according to the services they provide to work properly for human society and economy[18]. The 'ecological red line' is a spatial protection policy tool based on this rationale[19]. This philosophy assumes that there is sufficient knowledge to make accurate decisions regarding nature. However, scientists may argue that the ecosystem's complexity is far beyond our understanding, and thus precaution needs to be taken (Wilson, 2017). Assessed against the value framework proposed by the Millennium Ecosystem Assessment[20], the narrative of the EC appears to lack the consideration of resilience, option values, and non-utilitarian values.

There has been an evident rise in nationalism in China's political discourse since the introduction of the narrative "great rejuvenation of the Chinese nation" (Carrai, 2020; Stevens, 2020). Such a rise is shaping the meaning of China's narrative in its foreign policy (Passeri,2020). For example, the narrative of "being a responsible great power" has been used to demonstrate China's commitment of becoming a responsible member of the international community since its introduction in the late 1990s[21]. However, the latest CPC national congress report used this narrative to encourage China's active participation in the reform of the global governance system[22]. Another example is the narrative of "Community with Shared Future for Humanity" (CSFH) and its variants[23] introduced by the Xi leadership. Those are the dominant narratives for China's foreign policy since the late 2010s. While admitting that CSFH is based on the principles and ideologies of current international law, a senior diplomat[24] claimed that the CSFH is an ideology that aims to adjust the current western-centric global governance system (Xu, 2018).

In short, "balancing protection and use" has been the key narrative for China in its domestic policy and international negotiations. The political discourse in China is compelling the Chinese delegations to be more assertive in the negotiations and even reform international regimes using the Chinese narratives in all international fora.

For China, it would be risky to pursue such influence when its interests in Antarctica are not defined. Without clearly defined interests, it would be challenging to calculate the benefit. It would also be challenging for China to reconcile its anthropocentric environment narrative with the Antarctic

Treaty System's core values in defining its interests in the Antarctic. The white paper of China's Arctic Policy presents a case of such an effort. The narrative of Community of Shared Future for Humanity was well embodied in the rationale that the Arctic is of the concern of the international community as a whole. However, the white paper's tone was not assertive as China is not an Arctic state but only an observer to the Arctic Council.

With a firm belief in the anthropocentric and technocratic view of the environment and an ambition of being more influential member in the international community, It is anticipated that China would be sticking to the position of "balancing protection and use" and playing a more assertive role in the Antarctic fora. However, the narratives discussed above do not contradict the values of "peace", "science", and "cooperation" highlighted by the Antarctic Treaty. The newer but more pragmatic narrative of "understand, protect and use Antarctica" leaves room for interpretation in practice but also demonstrates China's interest in the stability of the ATS.

How real is China's mining interest in Antarctica?

Before assuming that the future date of 2048 looms with the potential of Beijing seeking to overturn the mining ban, it is important to assess China's interest in Antarctic minerals and consider how China's mineral demand is changing at present.

The statistics of academic papers published in the Chinese academic database (CNKI) can provide an

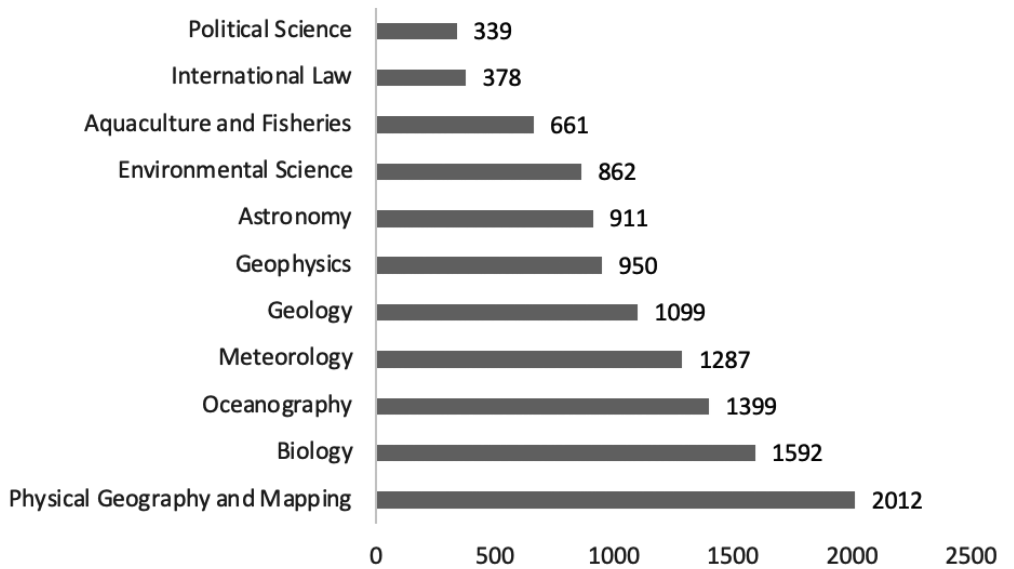

Figure 1. *Numbers of Antarctic research papers published on the Chinese Academic Database CNKI according by Subject (as for November 21, 2021)*

overview of the Chinese Antarctic Research. As shown in Figure 1, though physical geography and mapping has demonstrated the highest productivity in paper publishing, China's Antarctic research portfolio is highly diversified. It is hard to argue that exploiting the mineral resource is the main interest driving China's participation in the ATCM and CEP processes.

China's demand for minerals is being shaped by global changes such as the global response to climate change. The Paris Climate Agreement is aiming to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels[25]. Assessments have shown that in order to achieve the 1.5-degree target, very high shares of reserves considered economical in 2018 would not be extracted (Welsby, et al., 2021). Such a scenario will leave the reserves in Antarctica out of consideration for exploitation. China's progress in achieving its pledge of achieving carbon-neutrality by 2060[26] will also reduce China's demand for hydrocarbons.

2030 is the deadline for China plans to peak its greenhouse gas emission. It is also the year China expects its population to peak[27] and finish its urbanization (Chen, et al., 2015). This turning point also has implications for China's demand for non-fuel minerals. An assessment in 2019 concluded that "Most major minerals will reach peak demand before 2025" but "In 2035, most of the strategic emerging minerals (such as lithium, cobalt, nickel, graphite, rare earth, and platinum) will still maintain demand growth." (Wen, et al., 2019). According to a World Bank report, due to the energy transition needed for combating climate change, "metals which could see a growing market include aluminum (including its key constituent, bauxite), cobalt, copper, iron ore, lead, lithium, nickel, manganese, the platinum group of metals, rare earth metals including cadmium, molybdenum, neodymium, and indium—silver, steel, titanium and zinc" (World Bank, 2017). If the energy transition ends between 2050 and 2060 as currently planned, the related demand for minerals would drop accordingly.

Besides, China's readiness suggests a more real prospect of mining in the deep seabed. With the establishment of the United Nations Convention on the Law of the Sea (UNCLOS) in 1982 and the entry into force of the International Seabed Authority (ISA) in 1994, exploration activities for mineral resources in the deep seabed, or the Area, began to be regulated under exploration contracts. ISA has entered into 15-year contracts for exploration for polymetallic nodules, polymetallic sulfides and cobalt-rich ferromanganese crusts in the deep seabed with 22 contractors[28]. Chinese contractors have already acquired 5 contracts and conducted extensive research, surveys, and technical trails for mining in the Area. In terms of regulation, China actively participates in the ISA negotiations. It is supporting the work towards a regional environmental management plan (REMP) in cooperation with contractors from India, Germany, and Korea[29]. China's readiness for deep seabed mining is also demonstrated by the domestic legislation of the Law on Exploration for and Exploitation of Resources in the Deep Seabed Area in 2016.

In summary, there are many uncertainties associated with China's future demand for minerals. It is hard for any country to have a specific plan for open mining in Antarctica to meet the demand in the 2050s. China's persistence on the "balance of protection and use" can be understood as merely an effort to keep the window of opportunity open.

Closing Remarks

Though China's participation in the ATS in recent years has raised notable concerns, this paper argues that its position is consistent and its practice does not contradict the fundamental values and rules of the Antarctic Treaty or the Protocol so far.

China's practice in the ATS and its domestic political discourse demonstrates its aim to become a more influential player and its growing confidence in its approach to environmental issues. However, for the ATS, China's practice and narrative do not present a risk of discourse shifting yet.

China has a very diversified Antarctic research portfolio, and mineral resources are not necessarily the dominant interest. China's assertion on "balancing protection and use" is more relevant to its political ambition than to its demand for minerals in the future. The future of Antarctic mineral resources lies in the global transition to green economy which is far beyond the mandate of the ATS. An open Antarctic strategy similar to the White Paper of China's Arctic Policy would be helpful in facilitating policy collaboration with China in the ATS. Openly and clearly defined interests, principles, and approaches could inform and guide the discussions with China by all relevant delegations in the negotiations. However, it would be challenging for China to define "the interest of the international community as a whole" and reconcile this with China's national interest.

Acknowledgements

The authors would like to thank research assistance of Sarah Vanderfield, JD Candidate and Assistant of the Centre for environmental Law, Macquarie University.

References

Arrobas,D. et al,. (2017) The Growing Role of Minerals and Metals for a Low Carbon Future (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/207371500386458722/The-Growing-Role-of-Minerals-and-Metals-for-a-Low-Carbon-Future

Beck, P. J. (1989). Convention on the Regulation of Antarctic Mineral Resource Activities: a major addition to the Antarctic Treaty System. Polar Record, 25(152), 19. doi:10.1017/s0032247400009943

Carrai, M. A. (2020). Chinese Political Nostalgia and Xi Jinping's Dream of Great Rejuvenation. International Journal of Asian Studies, 1–19. doi:10.1017/s1479591420000406

Chen, J. (2021). China's political narratives and Antarctic diplomacy. Australian Journal of Maritime & Ocean Affairs, 13(1), 61-78.

Chen, Y., Liu, L., & Zhang, Y. (2015). China's Urbanization and Carbon Emissions Peak. Chinese Journal of Urban and Environmental Studies, 03(03), 1550021. doi:10.1142/s2345748115500219

Wu, Y. (2009). Mineral Resources from the Evolution of the Antarctic Treaty System. Journal of Ocean University of China (Social Science Edition), No. 5, 11-13 (in Chinese)

Passeri, A. (2020). Towards the "Great Rejuvenation": State Nationalism, Shifting Identities, and Foreign Policy Choices in Contemporary China. Rekindling the Strong State in Russia and China: Domestic Dynamics and Foreign Policy Projections, 40.

Stevens, F. M. S. (2020). China's long march to national rejuvenation: toward a Neo-Imperial order

in East Asia? Asian Security, 1–18. doi:10.1080/14799855.2020.1739651

Welsby, D., Price, J., Pye, S. et al. (2021). Unextractable fossil fuels in a 1.5 °C world. Nature 597, 230–234 https://doi.org/10.1038/s41586-021-03821-8

Wen, B, et al,. (2019). China's Demand for Energy and Mineral Resources by 2035. Strategic Study of Chinese Academy of Engineering, 1(25), 68-73. available at: https://www.engineering.org.cn/en/10.15302/J-SSCAE-2019.01.010

Wilson, E.O. (2017). Half-Earth: Our Planet's Fight for Life Reprint Edition, Liveright, ISBN-13 : 978-1631492525

Xu, H. (2018). Community with Shared Future for Humanity and the International Law Studies on International Law, Issue 5: 3-14 (In Chinese)

Endnotes

1. C.f. Anne-Marie Brady, "China's Expanding Antarctic Interests," Australia Strategic Policy Institute (August 2017); Elizabeth Buchanan, "Antarctica: A Cold, Hard Reality Check", The Strategist, 19 September 2019.

2. "China's first homemade polar icebreaker delivered", Xinhua, 2019, available at: http://www.xinhuanet.com/english/2019-07/11/c_138218279.htm

3. C.f. Cui, X., Greenbaum, J. S., Lang, S., Zhao, X., Li, L., Guo, J., & Sun, B. (2020). The Scientific Operations of Snow Eagle 601 in Antarctica in the Past Five Austral Seasons. Remote Sensing, 12(18), 2994. MDPI AG. Retrieved from http://dx.doi.org/10.3390/rs12182994

4. C.f. In pic: "China's 5th research station in Antarctic on Inexpressible Island", Xinhua, 2018, (In Chinese), Available at: http://www.xinhuanet.com/english/2020-03/13/c_138874031.htm

5. C.f. "China's polar-observing satellite completes Antarctic mission", Xinhua, 2020, (In Chinese), available at: http://www.xinhuanet.com/english/2020-03/13/c_138874031.htm

6. C.f. "Polar power play", The Economist, 2013; Jane Perlez, China, "Pursuing Strategic Interests, Builds Presence in Antarctica", New York Times, 2015

7. China's Antarctic Activities, State Oceanic Administration of China, 2017, No longer available online. C.f. "China unchecked in Antarctica", ABC news, 2019, available at: https://www.abc.net.au/news/2019-03-30/china-in-antarctica-inspection-regime/10858486?nw=0&r=HtmlFragment

8. Adopted 4 October 1991, entered into force 14 January 1998, (1991) 30 ILM 1455.

9. Chinese is listed as a language of the convention text on the website of the Ministry of Foreign Affairs and Trade of New Zealand, A Chinese official participate the negotiation confirmed that it is a "para-text" rather than official text. https://www.mfat.govt.nz/en/about-us/who-we-are/treaties/convention-on-the-regulation-of-antarctic-mineral-resource-activities/

10. C.f. meeting report of the Fourth Special Antarctic Treaty Consultative -Meeting on Antarctic Mineral Resources, Session 12, available at: https://www.ats.aq/devAS/Meetings/Past/37

11. C.f. meeting report of the Eleventh Special Antarctic Treaty Consultative Meeting, Session 1, available at: https://www.ats.aq/devAS/Meetings/Past/41

12. C.f. Report of the XI Special Consultative Meeting of the Antarctic Treaty, available at: https://www.ats.aq/devAS/Meetings/Past/45

13. he first proposal was proposed at ATCM XXXVI in 2013 as WP008, available at: https://www.ats.aq/devAS/Meetings/Documents/78

14. Article 4.1 of the Annex V of the Madrid Protocol states that Antarctic Specially Managed Areas may

be designated "toassist in the planning and co-ordination of activities, avoid possible conflicts, improve cooperation between Parties or minimise environmental impacts. "

15. C.f. news on the website on the Chinese embassy in the USA: "Xi Jinping Visits Chinese and Australian Antarctic Scientific Researchers and Inspects Chinese Research Vessel 'Snow Dragon'", available at: https://www.mfa.gov.cn/ce/ceus//eng/zgyw/t1212943.htm

16. C.f. the preamble and Article 89(6) of the Constitution of China (2018 version), available at: https://www.chinajusticeobserver.com/law/x/constitution-of-china-20180318

17. Thirty Lectures on Xi Jinping's Thought on Socialism with Chinese Characters for the New Era ,Central Department for Propaganda, P244 (in Chinese)

18. C.f. Technical Guidelines for the Delineation of Ecological Protection Red Lines, Ministry of Ecology and Environment of China, 2015, (In Chinese) ,available at: http://www.mee.gov.cn/gkml/hbb/bwj/201505/t20150518_301834.htm

19. 12.Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-being: Biodiversity Synthesis.World Resources Institute, Washington, DC. https://www.millenniumassessment.org/documents/document.354.aspx.pdf

20. C.f. Wu, Bing. (2014). "The Identity Construction of China's 'Responsible Great Power' Since the Reform and Opening Up", Socialism Studies, Issue 4: 138-145 (In Chinese)

21. Part XII, Report of the CPC's 19th national congress, 2017, (In Chinese) ,available at: http://www.chinadaily.com.cn/interface/flipboard/1142846/2017-11-06/cd_34188086.html

22. Such as: ocean community with a shared future ; a community of common health for humanity Xu Hong, the director of the Law and Treaty Department of China's Ministry of Foreign Affairs.

23. Article 2.1(a) if the Paris Climate Agreement, available at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

24. President Xi announced carbon neutrality target at his speech at the 75th session of the UNGA. Full text available at: https://news.cgtn.com/news/2020-09-23/Full-text-Xi-Jinping-s-speech-at-General-Debate-of-UNGA-U07X2dn8Ag/index.html

25. According to the Greenbook on Population and Labor published by the Institute of Population and Labour Economics, Chinese Academy of Social Sciences of China in 2019 (In Chinese)

26. The list of contractor is available at: https://www.isa.org.jm/exploration-contracts

27. See in the interview with the secretary general of COMRA, available at: https://chinadialogueocean.net/10891-china-deep-sea-exploration-comra/

*

Contributors

Susan Barr

Dr. Susan Barr is British and has lived and worked permanently in Norway since 1973. She has degrees in Scandinavian Studies from University College London and Historical Archaeology from the University of Oslo. In 1979 she became the first full-time Cultural Heritage Officer for the Norwegian Arctic and from late 1982-1998 she worked at the Norwegian Polar Institute, then in Oslo, with responsibility for the historical archives and polar history. From 1998-2016 she was responsible for polar heritage at the Norwegian Directorate for Cultural Heritage in Oslo and finished there as Theme Director for polar heritage. She is now an independent researcher concentrating on polar history and heritage. Susan has enjoyed extensive field work through the years in most areas of the Arctic and also in Antarctica and South Georgia. She has authored many articles and books and is currently responsible for polar history in the Norwegian Store Norske Encyclopaedia web version. In 2000 she founded the International Polar Heritage Committee (IPHC) of ICOMOS and has been President and now Vice-President since. Amongst other voluntary positions she was President of the International Arctic Science Committee (IASC) 2014-2018, member of the Norwegian Research Council's Polar Programme Board 2007-2019 and is currently UArctic Chair and member of UArctic Academic Advisory Board – Mimir and member of the EU-PolarNet 2 Policy Advisory Board. She has been on the Board of the Fram Museum in Oslo since 2004. In 2019 she was appointed Honorary Life Member of ICOMOS Norway for services to Polar Heritage. Email: snbarr@gmail.com

Daisy Gilardini

Daisy Gilardini is a conservation photographer who specializes in the Polar Regions, with a particular emphasis on Antarctic wildlife and North American bears. She is from Switzerland originally, and is now based in Vancouver, Canada. She fell in love with Antarctica during her first trip there in 1997. She has since devoted most of her time to photographing the Polar Regions. In 24 years of polar exploration, she has joined more than 90 expeditions to Antarctica and the Arctic. Among her accomplishments, she has skied the final degree to the North Pole. She is a member of the International League of Conservation Photographers (ILCP) and the SeaLegacy Collective, a fellow of the New York-based Explorers Club, and member of the Royal Canadian Geographical Society. She represents a number of prominent, industry-leading brands in the photography field. She is an ambassador for the following companies Nikon, Gitzo, Lowepro, Eizo, SanDisk and WesternDigital. Daisy's images have been published internationally in leading magazines such as National Geographic, BBC Wildlife, Canadian Geographic, Nature's Best and Outdoor Photography. Her images have also been used by high-profile NGOs such as Greenpeace and the World Wildlife Fund, among others. Since 2018, she has been a photographer in residence with Canadian Geographic and she has been

nominated Greenpeace Antarctic Ambassador. Her work has been recognized by some of the world's most prestigious photography awards, including BBC Wildlife Photographer of the Year, Travel Photography of the Year and the Nature's Best Windland Smith Rice International Awards. E-mail: daisy@daisygilardini.com

Chen Jiliang

Chen Jiliang is a researcher at Greenovation Hub, a Chinese environmental NGO. He holds a bachelor's degree in Environmental Science and a master's degree in Environmental Management. Before joining the Greenovation Hub, Mr.Chen had worked for the Institute for Environment and Development and the Heinrich Boell Foundation(a German political foundation). He has been working on international environmental policy since 2007 and regularly participated in international environmental negotiations such as the UN climate negotiation and the Antarctic Treaty-related meetings. His current research interest is the governance of the global commons including Antarctica and the living resources in the high seas. E-mail: jiliang@ghub.org

Jessica O´Reilly

Dr Jessica O'Reilly, Associate Professor of International Studies at Indiana University Bloomington, is an environmental anthropologist who studies how scientists and policy makers participate in environmental management, both in regard to the Antarctic environment and global climate change. She is the author of The Technocratic Antarctic: an ethnography of scientific expertise and environmental governance (2017, Cornell University Press). She is currently conducting an ethnographic study of the Sixth Assessment Report cycle of the Intergovernmental Panel on Climate Change. Dr. O'Reilly attends the Antarctic Treaty meetings as an advisor to the United States delegation and works with the Antarctic and Southern Ocean Coalition on Antarctic climate issues. E-mail: jessyo@gmail.com

Nengye Liu

Dr Nengye Liu is Associate Professor and Director of the Centre for Environmental Law at Macquarie University, Sydney, Australia. A/Prof Liu is the lead editor of two books: "The European Union and the Arctic" (Brill, 2017), "Governing Marine Living Resources in the Polar Regions" (Edward Elgar, 2019), and has published 50+ refereed journal articles and book chapters over the past decade. He is currently serving as Co-Chair of American Society of International Law's International Environmental Law Interest Group as well as Member of the Governing Board, IUCN Academy of Environmental Law, representing Oceania. Moreover, he sits on the editorial board of Marine Policy and Ocean Development and International Law. E-mail: nengye.liu@mq.edu.au

Ricardo Roura

Dr. Ricardo Roura is a polar region specialist with extensive experience in research, analysis and advocacy in Antarctica and the Antarctic Treaty System. He first went to Antarctica in his late teens and participated in twelve Antarctic expeditions, including wintering-over, with among others Greenpeace, the Argentine Antarctic program, and University of Canterbury (NZ), while increasingly becoming involved in Antarctic Treaty System fora as a representative of ASOC. He has also conducted research in Svalbard with the Arctic Centre, University of Groningen (NL), where he completed his Ph.D. He has published on Antarctic/polar topics including tourism, impact assessment and monitoring, protected areas, cultural heritage, and geopolitics. He is a senior adviser of the Antarctic and Southern Ocean Coalition and its representative to the Committee for Environmental Protection. He aims to keep Antarctica as an inspiring natural place, and the Antarctic Treaty System honest. E-mail ricardo.roura@asoc.org

Antarctic Affairs

RULES OF PUBLICATION

• The articles, which are previously unpublished, have a maximum length of 10,000 words.
• Each article should be preceded by a maximum of five key words and an abstract, which should not exceed 200 words.
• The author/s should include a bio for the Contributors section of the Journal. The bio should not exceed 300 words and should include at least the academic institution, governmental agency or company in which they are employed, and an e-mail.
• The articles could be written in English or Spanish.
• In case of using third-party materials in the article, authors should secure the required permission. Using short excerpts of text as well as certain other kinds of materials is often permitted for the purpose of review and evaluation, on a restricted basis.
• Articles could include charts and graphs that support the developed thesis.
• American-style spelling should be used throughout the article.
• For headings and structure of the articles, authors should refer to the following **template**. In case it is not possible to download from the link, contact the Managing Editor.
• References should be included in the text by name and year in parentheses (in-text citations), for example (Werner, 2010). When more than three authors are cited use "et al.": (Roura et al. 2012). The list of all references should appear at the end of the article under the title "References". The list should be alphabetically sorted. Citations should follow APA style: author or authors, year of publication of the article (in round brackets), article title, journal title, volume of journal, issue number of journal in round brackets, page range of article, DOI or URL.
• The Journal uses endnotes, not footnotes, to provide additional information. Endnotes should be kept to a minimum and numbered consecutively. All endnotes should appear at the end of the article under the heading "Endnotes".
• All acknowledgments or declaration of interest statements should be included at the end, before the References.
• The original manuscripts should be submitted electronically in "Microsoft Word" or compatible. Images should be sent in jpg format and in high resolution.
• The Journal reserves the right to edit and correct items, including certain portions separate and square up the particularly relevant or bold text, respecting the spirit of the original.
• The Editorial Board of the Journal of Antarctic Affairs will peer review all articles and select the ones for publication.
• The Journal does not charge for submission or publication.

Inquires

• Direct all inquiries to the Managing Editors at info@antarcticaffairs.org

VOLUME VIII - 2021

ANTARCTIC AFFAIRS

www.agendaantartica.org

AGENDA ANTARTICA

Antarctic and Southern Ocean Coalition

www.asoc.org