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James Barnes ∞ Manfred Reinke ∞ Denzil Miller

Osvaldo Urrutia ∞ Christopher Jones ∞ Lyn Goldsworthy

Antarctic Affairs

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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.

AGENDA ANTÁRTICA

Agenda Antártica is a non-governmental organization (NGO) 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

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Antarctic Affairs

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Message from the Managing Editor

Dear readers:

Welcome to the fifth volume of Antarctic Affairs. This is a special edition as it is dedicated to publishing the memories, reflections and experiences of those who have held leadership roles in technical discussions and decision-making processes regarding Antarctic policies in recent decades. For this volume, former representatives of CCAMLR, the Secretariat of the Antarctic Treaty and non-governmental organizations have contributed articles.

The first article of this edition was written by James Barnes, founder of ASOC and former Executive Director of the organization. Barnes recounts his more than 40 years of experience working for the conservation of Antarctica through four key issues that the continent has experienced in the last decades: the establishment of CCAMLR, the prohibition of mining, the approval of the Environmental Protocol, and the creation of a network of Marine Protected Areas in the Southern Ocean. This article perfectly summarizes the most important historical facts related to the governance of Antarctica and describes how the various initiatives were developed. It also gives us a good glimpse of how ASOC, the coalition of NGOs that works for the conservation of the white continent and that enjoys observer status in the meetings of the Antarctic Treaty Consultative Meeting and CCAMLR, was constituted.

The second article concerns the role of the Antarctic Treaty Secretariat since its creation in 2004. Manfred Reinke, who ended his mandate as Executive Secretary of the Antarctic Treaty in 2017, evaluates the role of the Secretariat and how it has helped to move forward the objectives of the Antarctic Treaty and the environmental protection of the white continent. This article describes in detail the functions of the Secretary and how they have been implemented, the dynamics of their implementation, as well as their long-term challenges.

The four remaining articles feature CCAMLR, the international organization that aims to manage and conserve the marine resources of the Southern Ocean, including the creation of marine protected areas in the seas surrounding Antarctica. Denzil Miller, former Executive Director of CCAMLR, reflects on the progress and achievements that have led the organization to be regarded highly on the international stage. Miller also includes memories of his role as Executive Secretary of CCAMLR and ends his article with the challenges ahead for the organization.

The fourth article of this edition is by Osvaldo Urrutia, who focuses on the problems that CCAMLR has in implementing the process of evaluating compliance for the conservation measures of the organization. The author, former chair of the CCAMLR Compliance Evaluation Process Committee, shares his experience by detailing not only the function of the organization but also by providing possible solutions to the problems identified in the article.

Fifth, Christopher Jones, former president of the Scientific Committee of CCAMLR, and delegate of the United States to the organization for more than 20 years, focuses on the CCAMLR's 's greatest challenges regarding the management of available scientific information, which is essential to ensure the conservation of Antarctic marine living resources.

Message from the Managing Editor

Finally, this volume includes an article by an environmentalist with a long history conserving the Southern Ocean, Lyn Goldsworthy. Lyn has been attending the CCAMLR meetings for more than 30 years in order to uphold the conservation and precautionary principles that represent the basis of this convention. Lyn recounts in her memoir how civil society has played a leading role promoting the conservation of the Southern Ocean. In turn, she shares with us how NGOs have influenced the success of numerous achievements that have led CCAMLR to obtain international recognition.

In closing, I would like to thank all of the authors, translators, the Editorial Committee and The Pew Charitable Trusts for financing and making possible the publication of this edition.

Juan José Lucci

ASOC Prologue

The Antarctic Treaty System, with its associated agreements and conventions, represents a system that is many times complex to understand for those who are not intimately involved in this issue. Understanding the functioning of the annual meetings, the meetings of the working groups, the vast work between sessions and understanding how all this system has evolved over the years represents a real challenge. That is why in this edition we decided to reflect the experience of different people who, through their performance in different roles, bring us closer to understanding the universe of the Antarctic Treaty System. Undoubtedly, the articles published here offer us a vision of multiple topics that are central to it but do not cover all the initiatives and all the work that has been done and is currently being done in that context. However, these documents offer us a very comprehensive view of the functioning and the existing challenges regarding the system in order to advance and ensure the protection of Antarctica, both on land and at sea.

The Antarctic Treaty is an unparalleled agreement given its characteristics and its geopolitical implications. The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) represents an agreement that is considered a model in the international management of marine resources, having as its main objective the conservation (as it says in its name) of the Antarctic marine environment.

The meetings of these international organizations are highly complex and require the participation of highly qualified professionals. In the preparation of this edition we had the honor of receiving articles from renowned practitioners who from their places as representatives of the Antarctic Treaty Member Countries, or from their role as members of non-profit organizations have spent many years ensuring the proper functioning of the different structures of the system. That is why we are happy to offer the readers these articles that allow us to understand a little more about the structure of the system and the vehicles used to meet the proposed objectives. Undoubtedly, this type of system requires creativity given that the issues are evolving and therefore the elaboration of new structures or mechanisms over time is required. In addition, it is imperative to consider a high degree of caution when facing the protection of an ecosystem such as Antarctica where the impact of climate change is still uncertain.

Towards the end of the preparation of this volume we were surprised by the premature death of our colleague and friend Mark Epstein. Beyond his academic and professional achievements in environmental issues and nature protection, Mark was a person committed to the conservation of Antarctica. Perhaps his commitment and enthusiasm for Antarctica were forged during his visit to the White Continent when he witnessed the collapse of the vessel ARA Bahía Paraíso in January 1989 and imagine the impact that such events could have on Antarctic waters and wildlife. His interest in Antarctic matters led him to become the Executive Director of the Antarctic & Southern Ocean Coalition (ASOC) until, due to health reasons, he had to leave his post. Despite his fragile health, Mark continued to invest his own resources and much energy in the conservation of Antarctica. With great sadness we received the news of his death. It is because of this that we have decided to dedicate this volume to his memory and celebrate the life of Mark and his efforts to ensure the protection of Antarctica.

Dr. Rodolfo Werner *

Editor

** Adviser to The Pew Charitable Trusts and the Coalition for Antarctica and the Southern Ocean (ASOC); Member of the board and scientific advisor of the Antarctic Wildlife Research Fund; Director of the Advisory Council of the Agenda Antártica.*

6.

A Reminiscence on Antarctic Governance and Transparency: The NGO Role

James N. Barnes

Abstract

This article describes how the Antarctic and Southern Ocean Coalition (ASOC) was formed and developed, how it contributed to the development of CCAMLR, the long campaign on a World Park instead of a minerals treaty, the negotiations of the Antarctic Treaty Environmental Protocol, and the movements to create Marine Protected Areas (MPA) in the Southern Ocean. In this article I also want to acknowledge the wonderful work and effort of the many people that have contributed to achieve these goals over the years.

Key words

Antarctic Treaty, CCAMLR, ASOC, Environmental Protocol

Introduction

Taking a step back from the immediate issues facing the Antarctic Treaty System (ATS) today, I'd like to paint with a broad brush regarding some of the significant achievements of the Antarctic Treaty Consultative Parties (ATCPs) during the past forty years. In particular my objective is to elucidate the NGO role in those achievements by sharing vignettes about particular moments and some of the people involved who were most important to ASOC and to me.

Given the geopolitics of the mid-1950s, the twelve governments which negotiated the Antarctic Treaty from 1957 to 1959 came up with a clever, somewhat opaque agreement, an astounding accomplishment for its time. By allowing the seven claimant nations to maintain assertions of national sovereignty over claimed portions as a polite fiction at least while the Treaty remained in force, while pragmatically accepting the non-claimant position that the entire Antarctic Treaty Area should be managed in common without national restrictions imposed in any operative way, an interesting modus vivendi was set in motion[2].

The ATCPs didn't invite or keep informed even its second-tier member states (Non-Consultative Parties). SCAR (Scientific Committee on Antarctic Research), the non-governmental organization on which the governments depended most, likewise wasn't invited to participate, although several SCAR members served as scientific advisors on national delegations. The ATCPs chose not to inform the UN about their stewardship of the region[3]. Official reports from AT meetings remained private if not secret, although a few academics were able to review older reports and wrote informed books and papers[4], and of course the official reports were available for legislative oversight in AT countries[5]. One striking thing about the earlier reports is how little they actually say — one can't really learn much from them about Antarctic Treaty Consultative Meeting (ATCM) discussions, debates and decisions.

During the years from 1959 until the late 1970s there were no observers at ATCMs from any realm, whether scientific, logistical, UN-related or NGO. The number of full members was tiny in comparison to the General Assembly and wasn't representative of the world community. This chart shows the growth of ATCPs and Non-Consultative Parties over the years[6].

One could argue that the Antarctic Treaty at that time was sort of a private "boys club" since virtually every Antarctican was male. In that context, the last time I heard the "SCAR Marching Song" was in 1985, sung by a group of male scientists at the Beardmore Glacier Workshop. Lee Kimball, a key organizer of the Workshop and a prominent NGO expert on Antarctica[7], shut the song down after the third verse, and it was never publicly heard again, at least not to my knowledge. The ATS has come a long way since then.

From the beginning there was fierce resistance to having a permanent Secretariat. What served as a mirage of one was a 'body' that moved to whichever country was hosting a meeting, and thus the collective 'memory' of ATS decisions was ill-maintained. I recall John Heap (U.K.) serving as a de facto one-man secretariat in keeping up the 'master' handbook of decisions, with voluminous pages of maps and rules for protected areas and species. That was an ongoing UK project of long standing,

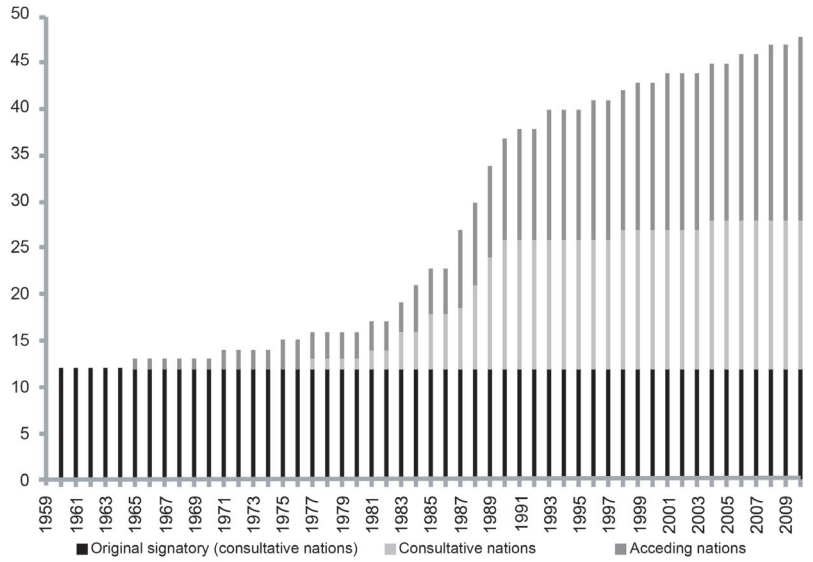

Fig. 1. *Número de Partes Consultivas a través del tiempo, divididos en miembros signatarios, miembros consultivos y miembros adherentes (no consultivos). Notar el gran crecimiento que tuvo la membresía durante la década del 80.*

which served as the unofficial record until the Antarctic Treaty Secretariat began operating many years later in 2003[8].

Two major gaps in the Antarctic Treaty were lack of regulation of commercial activities such as fishing, mining, tourism and bioprospecting, and absence of a process for protecting the environment, whether site-specific, regional or area wide. The negotiators knew they were leaving out resource activities but felt unable to tackle them in 1957.

Beyond declaring a few sites and species 'special' and publishing the 1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora, the ATCPs largely left environmental protection on the sidelines in the early years. While the Agreed Measures finally became legally in force in 1982, they still were neither binding nor enforceable and played little role in decision making thereafter. They were, however, very important for the particular sites and species chosen, demonstrating SCAR's early commitment to quality data and accurate mapping.

In 1972 the ATCPs negotiated the Convention on the Conservation of Antarctic Seals (CCAS), their initial foray into resource management and the second element of the Antarctic Treaty System. It was mostly a feel-good step as no one was harvesting seals, but still useful.

In the mid-1970s the then-twelve ATCPs began discussing behind closed doors two resource issues of more urgent concern.

Fishing: The out-of-control, unregulated fishing in the Southern Ocean in the period 1950 to 1980, alarmed scientists from a number of nations. Factory fishing fleets from Russia, Poland, Japan and several other nations took large catches of fish, as well as krill, a foundation species about which little was known, but for which dreams of stock size became fevered. Under this pressure, and without any basic science to guide fishing, several stocks collapsed and there was great concern about the growing krill fishery. That induced the ATCPs in 1975 to ask SCAR for a detailed assessment on krill and its role in the marine ecosystem. The assessment was presented at the 1977 Treaty Meeting and the ATCPs agreed to start negotiating a fishing regime in 1978.

Minerals: In the midst of a perceived global energy crisis that made putative Antarctic oil and gas deposits suddenly interesting, some states desired to open up the region to development, so long as it was controlled by ATCPs and not the UN. Application of the Common Heritage principle was anathema to the AT states. After the first special minerals meeting in 1975, a consensus evolved towards negotiating an agreement covering both prospecting and commercial activities. Politically, less urgency was attached to dealing with minerals while there were pressing reasons to do something about fishing, which also was seen as easier to address. The minerals negotiation would have to wait for fishing to be resolved.

This article briefly describes how ASOC was formed and developed, how it contributed to the development of CCAMLR, the long campaign about a World Park rather than a minerals treaty, negotiation of the Environmental Protocol to the Antarctic Treaty, and movement towards creating Marine Protected Areas (MPAs). All of these steps involved the efforts of scores of people and I want to acknowledge their superb work over the years. The story of ASOC's successes is theirs, plus many more who helped at various times[9].

Development of ASOC

In 1977 I began working at the Center for Law and Social Policy (CLASP), a public-interest law firm in Washington, as a lawyer on its International Project under the direction of Leonard Meeker. We were advocates for what were termed "unrepresented interests", and conceptually Antarctica fell nicely into that basket, as did Law of the Sea (UNCLOS) and the tanker safety initiatives of the International Marine Organization (IMO). There was little public knowledge of what went on behind the closed doors of those fora, and no idea how the public could influence what U.S. delegations were promoting or opposing. The Project's lawyers in the mid-1970s — Dick Frank, Eldon Greenberg and Len — opened the doors to public participation in those areas. With Len's help I picked up where Dick and Eldon left off as they became the Administrator and General Counsel of the National Oceanic and Atmospheric Organization, respectively.

I learned the most about Antarctic reality as a result of something President Carter did his first year in office, which changed the direction of my life. He insisted that all Public Advisory Committees, created by statute in 1972, be opened to participation of stakeholders, including relevant federal agencies, environmental organizations, scientists, academics and companies. Previously Advisory Committees on arms control and human rights had invited a few NGOs to participate on delegations, but most were closed to civil society. Carter's support for the Committees meant greatly broadened

participation, and much more transparency.

I was fortunate to be named to serve on several of those committees beginning in 1977, including UNCLOS, oil-tanker safety at the IMO, and Antarctica. In each of those three fora, non-governmental experts received low-level security clearances with access to voluminous information that had theretofore been largely secret. Advisory Committees were especially active when negotiations were being planned or under way, and the years 1977 to the late 1980s produced a torrent of international environmental agreements.

Through the Antarctic Advisory Committee I met experts from the State Department, NOAA, National Science Foundation, Marine Mammal Commission, Polar Research Board, National Academy of Sciences, Coast Guard and other government agencies providing the logistics and science on the ice, designing and managing long-term science programs. We met some of the scientists who actually carried out work there, independent researchers and academics, tour operators and fishers. From meetings and background documents provided to the Committee I learned about recent international discussions concerning development of oil and gas resources, and what to do about unregulated fishing. What I read and heard alarmed me for two reasons:

1. They were both secret discussions, without any public input, public record or basic transparency about the impending negotiations over resources that were in the high seas beyond recognized national jurisdiction.

2. Substantively, they were focused on economic and commercial benefits with relatively little thought being given to science, wildlife and the health of Antarctic ecosystems, much less something so arcane as 'wilderness values'. There was very little understanding of how Antarctic ecosystems worked, although quite a lot of excellent science already was underway[10]. The initial objectives for a fishing convention were extremely modest. The focus of the minerals discussions was how to allow companies to apply for exploration permits with the least amount of environmental scrutiny as possible, while keeping control of the region out of the United Nations and the Common Heritage principle.

Sharing what I was learning with colleagues from WWF, Friends of the Earth, Sierra Club, Audubon Society and Monitor International, I proposed that we create a coalition as a vehicle for spreading information about Antarctic policy and environmental issues, and carrying out joint advocacy to protect the region. That was agreed and the Antarctic and Southern Ocean Coalition was launched in mid-1978, with many organizations around the world joining over the next few years.

ASOC was ambitious in its advocacy, envisioning Antarctica as a "World Park" — a phrase dreamed up at the Second World Parks Congress in September 1972. To ASOC that meant dedicating Antarctica to peace, science and environmental protection, with no minerals activities allowed and with fishing controlled based on scientific research and quotas that take ecosystem impacts into account. These ideas informed much of the advocacy undertaken by ASOC and its member organizations from 1978 to 1982 tracking CCAMLR's birth, the anti-minerals campaign led by Greenpeace from 1983 to 1989, and the Protocol and mining ban campaigning during 1990 and 1991.

We needed access to Antarctic Treaty meetings. When the Advisory Group process began in the U.S. in 1977, no one knew the parameters of 'participation'. NGOs pushed to include actual participation in negotiations as delegation members, and a few government people were receptive. Elliot Richardson, head of the Law of the Sea negotiation, opened the door for me in 1977 for UNCLOS, and I participated actively until the negotiations concluded. As an aside, Elliot also invited Sylvia Earle to join the delegation, and we worked together on deep-sea protection provisions for UNCLOS. In more recent years Sylvia has collaborated with ASOC on Marine Protected Areas. She is a hero in the pantheon of ocean protectors.

Patricia Scharlin (Sierra Club) and I were invited to be private sector advisors on the U.S. ATCM and CCAMLR negotiation delegations in 1978. Each country has its own approach to including NGOs on international delegations. Besides the U.S., Australia, New Zealand and the U.K. were relatively open to ASOC colleagues participating on their delegations beginning in the late 1970s and early 1980s:

Australian Foreign Minister Andrew Peacock gave ASOC its first spot on an Australian Government Delegation, inviting Michael Kennedy as an advisor at the 1980 Canberra CCAMLR meeting. Australian ASOC members have served on almost all Antarctic delegations since the early 1980s, with Lyn Goldsworthy playing a particularly important role over the long term.

In New Zealand Alistair Graham was nominated by ECO, an umbrella NGO, to be the first NGO on the delegation to the 1985 minerals negotiation. In 1986 he was the first N.Z. NGO invited to serve on an ATCM delegation. Peter Barrett, a prominent scientist and Antarctic researcher, was the second NZ NGO on a minerals delegation at the Tokyo meeting in October 1986. Mike Donoghue was invited to advise the 1986 CCAMLR delegation, while Tim Gentle got the nod in 1987 and Janet Dalziell was chosen in 1989. ASOC members have normally been invited to advise every NZ Antarctic delegation since 1986. Alistair may well hold the all-time record for NGO service on Antarctic delegations, adding up his years in both N.Z. and Australia.

In the early 1980s the U.K. began inviting WWF scientists to advise their Antarctic delegations, which has continued to today, bringing a wealth of experience and information into the government's policy decisions. WWF's international family has been one of ASOC's most important long-term partners.

Brazil, Denmark, Chile, Poland, South Korea and Ukraine also have included NGO advisors on Antarctic delegations occasionally, which has provided its own fascinating window into how differently delegations function. But most ATCPs and CCAMLR Members have never included an NGO on any of their Antarctic delegations.

Through this access, ASOC colleagues met people on all delegations, learning how ATS negotiation processes work, how SCAR functions, and the more important decision makers at the meetings. Always, there were a few individuals who helped guide the progress of a meeting, a few who were reservoirs of helpful information, and of course a few blockers. It was only prudent to get to know them. ASOC and its members developed personal relationships with many delegates. For the first time, it was possible for NGOs to see what was and wasn't happening in the lead up to and during

formal meetings and negotiations. In that context, it is important to know which agencies within a government are pro or contra conservation in order to form alliances, and to work with 'like-minded' countries to make progress or head off bad developments.

Knowing what was on the table, who said what and who was responsible for various decisions allowed NGOs to report to their members as well as to journalists, the U.N. and the public at large. Providing accurate and timely analysis and facts at every stage of discussions, including successive drafts during negotiations, became a key facet of ASOC's advocacy, outreach and media work.

The information flowing from NGOs helped open up the ATS to a considerable degree.
Perhaps the most important independent source of scientific, economic and political information about Antarctica in the late 1970s and 1980s was the International Institute for Environment and Development (IIED), an NGO where Richard Sandbrook and Barbara Mitchell oversaw numerous reports and conferences about Antarctica[11]. Another well-informed NGO was Lee Kimball, who worked with IIED-US and other organizations to promote dialogue and share information. She found interesting ways to bring together specialists from different realms to talk off the record, and her reports and insights were always invaluable[12]. Both Barbara and Lee researched and wrote prodigiously about Antarctica politics and science, and through their organizations helped spread accurate information into mainstream media as well as to specialists.

Lee played the preeminent role in organizing the famous Beardmore Glacier meeting in 1985, hosted by the U.S. at the height of the minerals negotiation. Improbably, a mixed group of scientists, diplomats, government experts and NGOs were flown there from NZ to spend a week talking day and night while experiencing the glories of Antarctica[13]. Few slept, there was so much to see and share. Roger Wilson, Coordinator of the Greenpeace campaign, and I were invited to represent environmental organizations. I like to think that some of the later breakthroughs began there, through the greater understanding that seems to have flowed from the gathering. Most of us had never been to the Antarctic, and everyone had a good time and learned a lot. The beauty of what we saw was overwhelming, as was viewing the steep 40-year trajectory of CO2 in the upper atmosphere at the McMurdo station. The trip made a deep impression on me.

Early on, ASOC forged a working relationship with the International Union for Conservation of Nature and Natural Resources (IUCN) , to which most of our Member Groups belonged. It is a hybrid non-governmental organization, bringing together conservation-focused scientists, legal and policy experts in and out of government, environmental organizations, government agencies and some states. Resolutions are debated every three years at its triennial General Assembly, and since the late 1970s ASOC and its partners have submitted detailed Antarctic Resolutions at every General Assembly. Once approved, they are useful diplomatically. IUCN's excellent international connections facilitated ASOC's advocacy activities, providing many allies and contacts. Beginning in 1982 IUCN was invited to participate in CCAMLR meetings and in 1987 the ATCM opened its doors to IUCN. It was sometimes argued by governments that because IUCN was an umbrella NGO, no others needed to be admitted.

There were three main levels to ASOC's strategics for influencing the course of negotiations and the evolution of the ATS:

Involvement in national policy development. As I've noted, in the U.S. this occurred through the Public Advisory Committee, serving on U.S. delegations, and by working with Congress through hearings and with staff in their monitoring and oversight role. In the U.K., Australia and N.Z. there were similar modalities for NGOs to utilize, but in other AT countries practices vary widely and only a few have been receptive to direct NGO participation.

Involvement at the international level by being designated as "observers" or "experts", by serving on national delegations at ATS meetings, and by demonstrating outside ATS meetings. In making the case for ASOC to be invited to participate directly, we followed long-standing practice at the UN and other International Government Organizations derived from Article 71 of the UN Charter.

Working in other international fora to put pressure on ATS states to open up the meetings and documentation and involve a larger number of states. This mostly took place at the UN General Assembly, but ASOC utilized relationships with a wide variety of international organizations to spread Antarctic information, including IUCN and IOC.

At all three levels ASOC and its member groups succeeded in effecting changes that made available much more information to the public and expanded participation to more observers. More generally, NGO advocacy helped induce ATCPs and CCAMLR members to accept civil society and international participation in the ATS by opening up their meetings to broader participation of nations, organizations and experts[14].

ASOC finally obtained Observer status with CCAMLR only in 1988[15], after a mini-campaign to convince Members. That followed many 'trial' years when ASOC was invited to attend coffee breaks and receptions, and sometimes allowed to distribute the international newspaper ECO on premises[16].

Although ASOC petitioned regularly to be admitted to ATCMs from 1980 on, always at least one nation would say 'no'. Which one changed from year to year, a game as there were several naysayers. But there was a similar informal, quasi-regularized status as at CCAMLR: we were invited in small numbers to coffee breaks and receptions, and our publications were generally tolerated on premises. The NGO newspaper ECO tried to explain what was actually happening at meetings, with some humor thrown in, and was generally well-received by delegates. It was shared around the world as a principal news source regarding many of the negotiations and meetings.

ASOC finally was invited to participate as an Expert Observer to the ATCM in 1990 for the two-year negotiation of the Environmental Protocol. At the conclusion of negotiations, ASOC's status was normalized along with relevant UN agencies, the tourism industry group IAATO and IUCN. ASOC has used its status with the ATS since then to promote pro-environmental initiatives and hold governments accountable for their stewardship[17].

It must be noted that any observer or expert's right to participate is always just one vote away: A single ATCP or CCAMLR Member could strip ASOC or any similar organization of its credentials. Threats to that effect have been made from time to time but not actualized. Participation in some working groups still is restricted, particularly in the CCAMLR context, and the parameters of

observer speaking rights at meetings isn't clear. Sometimes ASOC is invited to speak last, for example. But considering the panoply of opportunities available to receive timely information and participate today, I am reasonably satisfied, and optimistic about the future of NGO work with the ATS.

1970s - Fishing and CCAMLR

The negotiation of CCAMLR took place in various venues and among different-size groups, beginning with Recommendation VIII-10 in 1975, which called for a Special Consultative Meeting to be held. The 1975 ATCM also asked SCAR to provide an assessment of available knowledge and ongoing research regarding krill's role in Antarctic marine ecosystems. SCAR created a Group of Specialists on marine living resources in the Southern Ocean in 1975 and held an international workshop with John Gulland as Rapporteur. Gulland's report noted the wide interest in Southern Ocean resources, citing the UN Development Program, UN Environment Program, UNESCO, IOC, IUCN and the Food and Agriculture Organization (FAO)[18].

SCAR and SCOR (Scientific Committee on Oceanographic Research) developed a detailed proposal to support the BIOMASS research program[19]. Inigo Everson published a voluminous FAO report in September 1977, "The Living Resources of the Southern Ocean: Southern Ocean Fisheries Survey Programme", which added to the body of knowledge on krill and other Antarctic living resources as well as indicating the interest of the UN.

In 1977 ATCM Recommendation IX-2 laid out interim guidelines for harvesting, called for more research and agreed on a Special Consultative Meeting to develop a new regime. SCAR for its part launched BIOMASS in 1977, a hugely complex and important scientific experiment focused on krill's place in the ecosystem and its lifecycle. International coordination was crucial to bringing together all the ships and equipment needed[20].

The ATCPs convened the first negotiating session in Canberra from February 27-March 16, 1978 at which a proposed draft convention was prepared[21]. Another formal session was held in Buenos Aires from July 17-28 that year, at which dozens of proposed changes to the draft were introduced and a new draft released[22]. They concluded the final draft of the Convention on the Conservation of Antarctic Marine Living Resources in Canberra on May 20, 1980.

Led by Russia, Poland and Japan but with similar inputs from Norway, fishing states were lobbying for as few controls as possible. They wanted to continue intensively targeting one or two species, seriatim. There were also fishing interests in other countries, but only a few Parties that could be said to really be pro-conservation. In that context, the initial view of the negotiation looked murky to environmental organizations. In a consensus system, one needs a certain momentum to make changes.

Conservationists supported the novel idea of an 'ecosystem-as-a-whole' approach, which would require all fishing to be based on adequate science and highly precautionary. We didn't want to see additional collapsed fisheries, thought the region's wilderness values and scientific research were more important than commercial exploitation, and wanted to ensure that fisheries and associated activities

didn't have adverse effects on ecosystem structure and dynamics.

Australia offered to host the first negotiating session in Canberra from February 27 to March 16, 1978. As the conference opened Chairman Rowland intoned, "Gentlemen, please take your seats," ignoring the six women present. Later he apologized for that omission, and thereafter opened meetings properly.

Prior to the first negotiation, Bob Hofman (Scientific Program Director the Marine Mammal Commission, an Antarctic seals expert and key adviser on the delegation) and I had had an inspiration. Since most of the esteemed delegates knew little of the marine environment, much less the intricacies of managing the Southern Ocean, SCAR should be invited to present a lecture about the "Antarctic Marine Ecosystem". We had in mind Dick Laws, Director of the British Antarctic Survey and a SCAR executive. The initiative was supported by the head of the U.S. delegation, we presented the idea to Dick, and he agreed. The change in agenda was approved by heads of delegation.

On March 1 the Chair invited Dick to present a lecture on behalf of SCAR and no country spoke against it. The meeting room was darkened and he gave his talk, using an overhead projector with large printed slides to outline the realities of Antarctic marine ecosystems, the unknowns, the natural boundary (the Antarctic Convergence) and appropriate conservation principles for a fishing regime. That was an enlightening 90 minutes, and the tenor of the meeting changed. Soon all delegations had accepted the Convergence as CCAMLR's boundary — albeit with a few cutouts to accommodate Parties. That decision to extend jurisdiction beyond the Antarctic Treaty boundary meant even more new responsibilities for the diplomats to ponder[23].

Suffice it to say that there were issues within the meeting, with disagreements over the wording of key articles, and even the basic goals of the new organization, much less how to pay for it all — the new organization wouldn't come cheaply. Scientists such as Bob Hofman and Dick Laws, and SCAR scientists more generally, were working with colleagues on every delegation, discussing the rationale for the text of Articles I and II and what they would mean in practice[24]. SCAR strongly supported the principle that adequate scientific information must be available on which to base sound analyses and decisions, a hot topic among fishing nations unused to sharing their data or doing much science.

IUCN was represented on the inside as an observer. ASOC was present on both the inside, through a few people on national delegations, and outside where Friends of the Earth and Greenpeace led demonstrations. They published several issues of ICE, a predecessor to ECO, in order to let the press and public know what was happening. It is a fair record of our preoccupations, and sense of humor, when the meeting began[25]. Friends of the Earth were demanding that no exploitation be allowed, urging delegates to protect the Antarctic as a "Natural Wilderness Area and World Heritage" and for the seven claims to be renounced. The issue of ICE published on March 10, 1978 by FoE and Greenpeace shows their analysis of the situation then, which was very negative. ICE was disseminated to colleagues around the world and the international press[26].

The governments decided to take a pause for reflection. Obviously they were in no position to conclude the negotiation any time soon. ASOC, IUCN, IIED and others disseminated information widely over the next two years, while monitoring ongoing informal discussions among governments.

Friends of the Earth continued to campaign for totally protected status for Antarctica, with support groups in Australia, N.Z., U.S., U.K., France, Germany and Japan[27].

ASOC and IUCN decided to host small gatherings of friendly scientists from both government and civil society to review the wording of the draft articles and develop ways to better underpin the ecosystem approach. Lee Talbot, then Director of IUCN, was very supportive of holding informal workshops[28]. Bob Hofman and Dick Laws provided the scientific impetus for a small group to work on ideal wording for Article II, our main preoccupation. Hofman and Laws agreed with ASOC that the phrase "rational use" of living resources must meet the principles of conservation provided in paragraphs Article II, while fishing states wanted 'rational use' to be separated from conservation[29]. We didn't want just another regional fisheries arrangement built on a MSY (Maximum Sustainable Yield) framework. The workshop's recommendations were endorsed by the U.S., U.K., Australia and N.Z., which were carrying out demarches with other delegations about the draft text.

Finally it was agreed to hold a negotiation in Canberra to conclude the new Convention. On May 7, 1980 the meeting commenced, with all delegations starting by saying they hoped to conclude it while there. ASOC and its allies were present, publishing ECO[30] and lobbying delegates. ASOC requested official observer status to the meeting, which was denied. IUCN was invited, so one ASOC ally was inside officially, and several colleagues served as private sector advisers on delegations.

As the meeting opened, while it was clear that Article II was not yet agreed, optimism was in the air. However rather quickly hopes began to be dashed, as Russia insisted there had been a 'gentlemen's agreement' earlier that no more changes to most articles would be made. Thus, it wasn't accepting any of the new textual amendments worked out during the preceding year. It seemed the negotiation might be scuttled, or that some seriously weak articles would have to be accepted as the price to be paid for having anything[31]. Friends of the Earth and others supporting full protection published ICE under the banner of the Antarctic Defence Coalition[32].

After additional inter-delegation lobbying during the next few days, the fishing states finally agreed to a form of wording for Articles I and II that was acceptable to the conservation states, if not as explicit as many had hoped. The list of functions in Article 9, implicitly a draft work program for the new CCAMLR institutions, was agreed with some last-minute twists and turns, and on May 20 the new instrument was signed into being[33].

CCAMLR came into legal force on April 7, 1982 and its organs began operating officially after the two-year start-up phase. One way or another, ASOC and its member groups have participated actively whatever our official status. Today ASOC continues to focus attention on krill conservation, given its crucial role in the marine ecosystem. Rodolfo Werner has led this work for the past twenty years[34]. ASOC has lobbied for much greater scientific research so that the ecosystem principle can function properly — science-based management can't work without adequate data on an ongoing basis[35]. Among other issues that ECO and ASOC have focused on at CCAMLR are ending pirate fishing; marine protected areas; climate change; rules about protecting seabirds; ice-certification of vessels; a legally binding Polar Code; and the meaning of Article II and ecosystem management[36].

1980s - Minerals and CRAMRA

Having tackled fishing, the ATCPs turned their attention to minerals. In 1983, following several preparatory discussions, the ATCPs agreed to begin negotiating a Minerals Convention. It would continue taking place behind closed doors. As NGOs viewed it, the proposed convention would open the region to minerals development, including oil and gas exploration and eventual drilling, and while there were some safeguards in the text, they were weak and unenforceable. Already there was a lot of relevant hydrographic and seismic data available, driven in part by the global energy crisis in the mid-1970s. Secret reports were circulating among companies and some governments about immense oil and gas wealth there. One could buy a thick binder of data for $10,000 in the early 1980s. One sensed a certain hysteria about it all. In actuality, it was clear that the costs of extraction, developing adequate technology and the distance from major markets would place development well into the future.

Whatever the precise delineations of their reasons, the governments wanted to avoid diplomatic rows over claims because of prospecting or worse. Soon New Zealand agreed to host the first negotiating session. Chris Beeby, a senior New Zealand diplomat, was tasked with developing and negotiating a text. He would play a pivotal role for the next decade[37].

ASOC's member groups wanted to mount a World Park campaign to counter the minerals negotiation. Each member group possessed useful expertise, and collectively our scientific, media and advocacy knowledge and prowess was good.

David Brower and Friends of the Earth affiliates in Australia, France, N.Z., U.K. and U.S. brought important international media contacts and campaign expertise.

Peter Scott and Cassandra Phillips in the U.K. worked closely with WWF offices in several countries to raise the issues to high levels, liaising with ASOC members Greenpeace, International Fund for Animal Welfare (IFAW) and Friends of the Earth on information and advocacy in Europe.

In Australia Michael Kennedy, Alistair Machin and Lyn Goldsworthy at the Fund for Animals coordinated advocacy there among ASOC members Australian Conservation Foundation, Wilderness Society and WWF. Their long-term teamwork was crucial in convincing the Government to support ASOC initiatives generally, and finally a minerals ban.

In New Zealand, Cath Wallace, Barry Weeber, Alistair Graham and Roger Wilson organized the environmental community beginning in the early 1980s to oppose the proposed Minerals Convention, which was being drafted by their countryman Chris Beeby. Cath received the Goldman Environmental Prize for her pioneering work on the campaign.

In France, Brice Lalonde at Les Amis de la Terre (Friends of the Earth) and Greenpeace lobbied officials and mounted small demonstrations to obtain pro-world Park media coverage, but it was low-key compared to Germany.

The coordinator of the successful Greenpeace campaign for a whaling moratorium at the International Whaling Commission (IWC) was Cornelia Durrant. By pure luck of the draw, we were friends and

housemates in Washington, DC and she agreed to help. A key scientist on the Greenpeace IWC team was Sidney Holt, who was very supportive of protecting Antarctica, not least because it is home to huge numbers of whales. Cornelia introduced us. Cornelia and Sidney had learned a lot about international lobbying while campaigning for the whale moratorium, which was put to good use on the new Antarctic campaign. Kelly Rigg joined us shortly thereafter, helping with every aspect of the work. She moved to Washington from the Boston Greenpeace office with her husband, Steve Sawyer[38], and quickly became indispensable. Those were fortuitous intersections.

For the kind of global effort we had in mind, only one organization could fill the bill: Greenpeace. By late 1982 Greenpeace Director David McTaggart had not decided whether to endorse a global campaign to block the minerals regime, which was recommended by some parts of the organization. While the key Greenpeace boards in the U.S., U.K., Germany, Netherlands, Australia, N.Z. and Denmark hadn't devoted many resources to Antarctica, there was support for a campaign. Cornelia, Sidney and I drafted a memo for David outlining why a campaign would make sense for Greenpeace, with a timeline and draft budget.

I recall a key 1982 meeting on Sidney's houseboat in London, with David, Cornelia, John Frizell and several others, during which the plan was discussed. After a few additional days together at David's home in Lewes, where there was plenty of time to discuss various scenarios and ponder unknowns, David asked what victory would look like, and how long it would take. We told him it would be an uphill struggle, would take years and wouldn't come cheap, and that we believed the public would respond enthusiastically to the positive message of protecting the pristine Antarctic environment. "How many years," he asked. "Perhaps ten," I replied. "Well let's get it on!" he exclaimed.

Roger Wilson was named Greenpeace's first Antarctic Campaign Coordinator. The two of us managed many aspects of the quickly evolving international campaign during the next few years. We had enormous amounts of help from an informal coordination group, which expanded as needed, and the growing team. There were many wonderful people involved in one way or another with this effort. Besides international staff hired by Greenpeace to work with national offices in key countries, there was excellent support from their specialized marine, communications, direct actions and media teams.

Beginning with the January 1983 first session in Wellington, Greenpeace and ASOC were at every negotiating session, mounting demonstrations, doing media work and lobbying delegates[39]. Our assessment of the governments' efforts after round 1 was harsh[40]. At the second meeting in Bonn July 11-22, 1983 ASOC and Greenpeace intended to garner world media for the first time. Greenpeace-Germany had a superb direct actions team, which took care of the daily demonstrations with many sorts of plastic penguins and students in penguin costumes massed together at the entrance to the negotiations[41]. Wherever the ATCPS went, demonstrations were put together by Greenpeace and local ASOC affiliates. Those demonstrations are a story unto themselves, including standoffs with the police that sometimes got testy. They were pretty effective in mobilizing public opinion for protection.

Greenpeace International had experienced staff dealing with vessels, and everything having to do with expedition logistics was their domain. It was a daunting challenge to undertake regular Antarctic expeditions and establish a useful base camp. Early on, the Greenpeace-US Yacht Donation Program

run by Ed Simmons in Florida was given a vessel that was more or less Antarctic worthy. Ted Turner, founder of CNN, gave Greenpeace around $400,000 towards the vessel's upgrade, and more for a pad and helicopter. By the mid-1980s the team was ready to try, and over the next several years they carried out the mission with distinction, setting up the Greenpeace base on Ross Island and keeping it resupplied annually.

Both Greenpeace and WWF had professional media teams, and within ASOC more broadly a number of member groups various countries had excellent media capacity, including Friends of the Earth International and its affiliates, the Sierra Club and others who helped spread information. We did our best to develop 'systems' to keep our intelligence updated, refine strategies, synchronize messaging and meet timelines we didn't control. In his spare time, Roger developed a useful database program for us, which was ahead of its time.

The integrated campaign team was able to utilize international contacts of people in the informal global coordination group. I would mention first Sir Peter Scott, who along with his associate Cassandra Phillips, had deep connections with the World Wildlife Fund, IUCN and other organizations, as well as several royal families. Peter had been to Antarctica many times, following his father, Robert Falcon Scott. Peter was deeply knowledgeable, impeccably courteous and gave excellent advice. His assistance to the campaign continued over a long number of years. Peter was an important mentor to me and a source of great inspiration. He wrote the foreword to my book "Let's Save Antarctica", published in Australia by Greenhouse in 1982.

Elisabeth Mann Borgese was another mentor who introduced me to an amazing constellation of people. Her International Ocean Institute (IOI) in Malta hosted the first Pacem in Maribus conference in 1972, and regularly thereafter around the world, bringing together an amazing group of people. Always promoting peace, science, cooperation and environmental protection, Elisabeth introduced me to new avenues for discussing Antarctica's future with decision makers, as well as providing a fountain of moral support. She knew the battle would be long, and gave us good advice about strategies and tactics. Her associates who became close collaborators included Sidney Holt, Maxwell Bruce - a wry QC with the right to practice both in Canada and the U.K., and Patricia Birney, perhaps the happiest academic I ever met. Her enthusiasm for work was catching, and she knew a prodigious amount. Operating in realms that I often little understood, Elisabeth helped teach people about the Antarctic and found ways to assist ASOC's efforts to protect it.

During the period 1984-1986 the campaign tracked every twist and turn of the minerals negotiations as the governments met in Tokyo (May 22-31, 1984)[42]; Hobart (April 18-25, 1986)[43]; and Tokyo (October 27-November 12, 1986)[44].

Following its first attempt the year before, the second Greenpeace expedition during the 1986-87 Antarctic summer season successfully established a base on Ross Island, in January 1987. After that, public support grew exponentially, with the base being a profound aspect of the campaign's resonance with supporters. The main political purpose in establishing the base was simply to show that an NGO can meet the formal criteria for membership in the AT, e.g. demonstrating commitment to scientific research by operating a station, and thus has as much right to be there as a government. A second political goal of the base and the annual expeditions was to document impacts of government

bases, logistics, fishing and whaling.

As Ricardo Roura, Chief Scientist at the camp, has written, the Greenpeace base was well-positioned for viewing U.S. and N.Z. operations up close, and Antarctic expeditions generally provided opportunities for Greenpeace to document and publicize what was actually happening in Antarctica[45]. The realities were far worse than we had imagined, particularly waste dumps near major stations[46]. The inspection system had not thus far identified those as a violation of any rule. Armed with photographic and video evidence, it was easy to compare the damage being done just from "science" to what miners and drillers could do.

Politically, the presence of Greenpeace on the ground and its documentation of operational realities led to changes by various governments. Partly this resulted from millions of people around the world being informed and pushing for a World Park, and partly through ATCP embarrassment at the world seeing graphic images of their stations and operations[47].Greenpeace resupply trips documented whaling activities, construction by France of an airstrip at Dumont D'Urville, fishing by-catch from longlining operations, and the large ice wharf of refuse at McMurdo, which was dynamited and sunk in the bay every year[48].

Others have written in detail about the minerals regime negotiation and the World Park campaign, so there is no need to go into much detail here[49]. Suffice it to say that the NGO strategy was always multifaceted and designed for the longer term, and the Greenpeace presence in Antarctica complemented the political strategy effectively. We lobbied inside the meetings to improve the draft regime to make it as hard as possible for mining applications to receive approval, while working outside to convince Australia, France, Belgium, Italy and others to walk away from the draft convention, thus breaking the consensus. Many delegations were divided internally over minerals. We needed only a single country to turn away from CRAMRA, but two would be more secure, and that became the goal.

In 1986 Kelly Rigg succeeded Roger Wilson as Greenpeace Antarctic Campaign Director. Beginning in 1987 ASOC and Greenpeace developed an alliance with Jacques Cousteau, through Bertrand Charier, Director of the Cousteau Society in Paris. We agreed to share our political intelligence and developed a joint lobbying strategy with common messaging. Although Cousteau didn't join ASOC, the joint work unfolded seamlessly.

Cousteau's films, magazines and books helped raise public awareness worldwide. He even started a special children's Antarctic Magazine in France and the U.S. that was focused on the campaign. Strategically, he focused on President Mitterand and Prime Minister Michel Rocard, with whom he had a good relationship. Rocard was known to be sympathetic to environmental causes and to have a soft spot for Antarctica.

With the campaign growing more sophisticated and global, ASOC, Greenpeace and other partners were actively engaged on many levels, from the UN to national level political strategies, and of course the remaining negotiating sessions: Montevideo (May 11-20, 1987)[50]; Wellington (January 18-29, 1988)[51] and the final conference in Wellington (May 2 to June 2, 1988)[52]. The minerals campaign instigated a form of theater from 1983 to 1988, as governments roamed around the world negotiating

while ASOC, Greenpeace, WWF, Friends of the Earth, Fund for Animals and others demonstrated outside negotiation venues. Always a few ASOC people were inside on national delegations. As the years slid by, our efforts to get media coverage and inform the global public about what was at stake were increasingly successful. Millions of World Park petitions were signed.

However, that didn't stop the momentum inside the ATCP negotiating rooms towards concluding the Minerals Convention. The Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA) was adopted in Wellington on June 2, 1988. While it includes some useful environmental protection measures thanks to NGO advocacy, there were many flaws from the NGO perspective. This issue of ECO shows how negatively ASOC looked at the final deal[53]. The campaign would continue.

ASOC and its partners refocused efforts to convince countries to abandon CRAMRA, with Cousteau as key interlocutor to Rocard in France and Lyn Goldsworthy leading a multi-pronged NGO effort in Australia to convince Prime Minister Robert Hawke.

In Australia it had taken patient advocacy for several years by Lyn, Michael Kennedy, Alistair Graham and others to convince Hawke and his cabinet to reject the minerals agreement[54]. In France, President Mitterrand endorsed Rocard's position[55]. It was a diplomatic sea change when Rocard and Hawke agreed to reverse course in 1989, throwing their support to the World Park proposal with a minerals ban. Suddenly the tables were turned, and the broken consensus became an advantage for the World Park side. The two prime ministers developed a joint demarche to bring other countries on board and a few quickly agreed, providing momentum.

Others have written at length about Cousteau's impact on the success of the minerals campaign, so I won't go into detail here[56]. Suffice it to say that it was interesting to work with him and his team, and without their help at the end, the campaign might have failed. One ATCP alone standing up against the combined might of the others might have been too much for Australia to have borne. The Cousteau organization played the key role in changing the French position on the Minerals Convention, assisted by the persistent efforts of Brice Lalonde at Les Amis de la Terre (Friends of the Earth). With both France and Australia strongly adhering to their decisions to reject CRAMRA and others steadily joining them, there was little choice but to accept the broken consensus. CRAMRA was moribund. What would fill its place?

1990s - Environmental Protocol and Mining Ban

Fortuitously, ASOC and IUCN had been developing a legal template for a World Park for a couple of years before the minerals regime was rejected. Drafted under the guidance of David Bederman, a law professor at Emory University and Chair of the ASOC board, lawyers, scientists and policy experts from a number of NGOs crafted a model World Park Convention. It included a legally binding environmental protection requirement with transparent assessment, an indefinite minerals ban, and legally binding annexes for regulation of tourism, protection of wildlife and liability for harm to the environment. The NGO draft was used by French, Belgian, Italian, German and Australian diplomats in drafting portions of what became the Environmental Protocol.

Also very useful to the negotiators was text on protection of the environment and environmental assessment from the scrapped Minerals Convention, concepts and language from the CCAMLR Convention, and the Agreed Measures.

Politically the Greenpeace-ASOC campaign, again supported by Jacques Cousteau, took the World Park message to larger and larger audiences as NGOs pressed for a permanent mining ban. Although there were several holdouts among ATCPs about accepting CRAMRA's demise, targeted advocacy resulted in changes to their positions.

At the first negotiating session for the Protocol held in Viña del Mar, Chile on November 19, 1990 ASOC finally was invited inside as an official observer[57]. The international campaign team was there in full force, lobbying delegates and briefing the press. Good progress was being made, and ASOC was optimistic as the first session ended on December 5[58]. Meanwhile, the UN General Assembly overwhelming passed a Resolution on Antarctica on November 27 outlining common heritage principles regarding Antarctic resources whether banned or not. That was blithely ignored by the ATCPs but had some utility internationally.

The second negotiating session commenced in Madrid on April 22, 1991. Momentum was building towards a positive conclusion. The Greenpeace expedition was just returning from a trip to the Antarctic Peninsula having documented all sort of government activities, and that information helped support the lobbying. ASOC and Greenpeace were present with a large team to keep the pressure on, and ECO was published as usual[59]. After a week of work, the negotiators agreed to return to Madrid in September to finish the job. Public pressure continued throughout, targeted as seen necessary to keep things on track. Fortuitously, IUCN released a new Strategy for Antarctic Conservation in 1991, written during the prior year in concert with SCAR, ASOC, WWF and several other organizations[60]. Martin Holdgate, then the Director General of IUCN, became a strong advocate for the Protocol and minerals ban, which extended NGO strength given IUCN's range of contacts.

On October 4, 1991 the new Protocol was completed! That story has been well-reported and I have nothing much to add, other than it was a very swift negotiation given its scope[61]. After the years tied up on CRAMRA negotiations, I hadn't imagined that its replacement could move forward so quickly. The governments' fear about possible unregulated minerals activities and what that implied for claims, coupled with continued interest by the UN, no doubt helped underpin the diligent pace.

At the ATCM that year in Bonn, Germany ECO highlighted the importance of swift ratification of the new Protocol[62]. Under the consensus rule, every ATCP had to ratify before it could come into force legally, although the Parties agreed to treat it as operative in many respects. The new institutions began to function, with the Committee for Environmental Protection starting to play a significant role in environmental assessment and planning[63]. ASOC mounted a targeted ratification campaign focused on the small group of difficult countries, assisting some of them with materials in their own languages. Sadly, the U.S. proved to be one of the recalcitrants, but the combined weight of Vice President Al Gore, Senator John Kerry and Jacques Cousteau moved the U.S. position to full support for the Protocol. Japan, South Korea and Russia also were slow to agree, but in 1998 the Protocol came into force. It was the end of a long saga whose result was much more positive than

we had imagined possible in 1982.

Implementing the Protocol and campaigning to fill its gaps on liability for environmental damage, tourism and bioprospecting has been an ASOC preoccupation at ATCMs for the past twenty-five years[64]. Implementation never ends, and is an ongoing struggle. ASOC's team of experts played an unheralded role as the Protocol began to operate, with media interest in Antarctica waning because of the minerals ban victory and the Protocol[65]. Negotiation of a liability annex alone consumed years of Alan Hemmings and my time, not to mention the governments' resources. Tourism regulation has required considerable research and lobbying to achieve even modest progress, with Ricardo Roura, Alan Hemmings and Tina Tin carrying out much of the work for ASOC. The complex issue of Russia drilling into Lake Vostok was treated very seriously by ASOC, with Ricardo taking the lead on that. Bioprospecting has been a vexed issue for the ATCPs the past fifteen years. In spite of excellent outside research by UNEP, pressure from a few Parties, led by Netherlands, and ASOC's advocacy led by Ricardo and Alan, little has been accomplished and it remains essentially an unregulated industry[66].

Marine Protected Areas in CCAMLR: The 2000s

In the 1990s IUCN, ASOC and several Antarctic scientists began promoting MPAs but the idea lacked political traction until the mid-2000s. CCAMLR's approach to its mission has evolved slowly to the point that large MPAs have been on the agenda since 2009, after years of preparatory meetings. NGOs drove the discussion of MPAs both at ATCMs and CCAMLR meetings, and without them, little progress would have been made.

Beginning in 2002 IUCN, working closely with ASOC, prepared papers on MPAs to assist CCAMLR, and the two organizations lobbied governments over the next few years to move forward. ASOC introduced its first paper about MPAs at the 2004 CCAMLR meeting, "Protection of High Seas"[67]. It called for CCAMLR to ban bottom trawling in the Southern Ocean and steps to meet the Biological Diversity Convention's goal of establishing a global network of marine reserves and protected areas by 2012. The CCAMLR Commission was sufficiently motivated by the discussion that year that it urged the Scientific Committee to proceed with MPA work as a matter of priority and endorsed the holding a special MPA workshop, with Polly Penhale, Chair of WG-EMM, as Convener.

That proved to be one of the most important steps in the MPA discussion. The Workshop on Marine Protected Areas met in Silver Spring, Maryland from August 29 - September 1, 2005. ASOC was not able to secure an invitation but IUCN played an important role including submitting a key background paper. Lee Kimball introduced IUCN's "Marine protected areas in the context of CCAMLR: a management tool for the Southern Ocean"[68]. SCAR also had a major role, presenting the results of the SCAR Biology Symposium held earlier in July in Curitiba, Brazil. The Silver Spring workshop was a success and its report provided a major impetus to progress on MPAs[69].

WWF organized an important international workshop on "Bioregionalisation of the Southern Ocean" in Hobart in September 2006, providing methodologies for assessing and choosing MPAs[70]. WWF

made sure that Antarctic scientists from key countries were there, including Russia. At the CCAMLR meeting that year, ASOC introduced its first in-depth Information Paper on MPAs, "Achieving a Network of Marine Protected Areas in the CCAMLR Area"[71]. At the 2007 CCAMLR meeting ASOC introduced "A System of Comprehensive Marine Protection - Some Policy Considerations", calling for rapid steps to meet the 2012 international target and outlining the responsibilities of ATCPs as well as CCAMLR Members[72]. ASOC and IUCN worked together to keep a high profile on the MPA issue, focusing especially on the Ross Sea. In 2008 ASOC began featuring David Ainley's Ross Sea proposal in information papers at ATCM and CCAMLR meetings.

At the 2008 CCAMLR meeting ASOC introduced "The Ross Sea: A Candidate for Immediate Inclusion in a Network of Marine Protected Areas"[73]. At the 2009 ATCM ASOC introduced "Marine Protected Areas in the Antarctic", covering international practice and the legal basis for Antarctic MPAs[74], and "A Ross Sea MPA: Preservation for Science"[75]. The proposal encompassed most of the greater Ross Sea ecosystem, calling for all fishing and whaling there to be stopped. That was a vision that motivated ASOC and its member groups, as well as capturing the public's attention. At the 2009 CCAMLR meeting ASOC's paper, "CCAMLR's 3-Year Challenge: Delivering a Comprehensive and Representative Protected Areas Network of in the Southern Ocean" as a blueprint for action by the Members[76].

Around this time, David became partners with Peter Young (Last Ocean Trust, N.Z., who was working on a Ross Sea film) and John Weller (Last Ocean U.S., a photographer who captured beautiful images of Antarctica). Thereafter their work was featured year by year at ATCMs and CCAMLR meetings, including exhibitions and seminars. In 2012, after years of preparation, they released "The Last Ocean", an award-winning feature documentary viewed at festivals around the world. Peter's film and John's still images were crucial in the global campaign to inform the public and put the Ross Sea solidly on CCAMLR's agenda.

At the 2010 CCAMLR meeting ASOC introduced "The Case for Including the Ross Sea Continental Slope and Shelf in a Southern Ocean network of Marine Protected Areas"[77] and hosted a reception with a presentation by John Weller. One sensed possible momentum because of the looming 2012 goal, but at the same time there were numerous reasons why various CCAMLR members hadn't yet endorsed the Ross Sea or an ambitious network. We needed to find new ways for the campaign to convince delegates to agree on Antarctic MPAs.

ASOC and its member groups' resources collectively were good, particularly Pew, WWF and Greenpeace, with long-term campaigners in Australia, N.Z., UK, Argentina and the U.S., as well as member group staff in Chile, Brazil, Japan and South Korea. The issue had gained substantial momentum, but clearly we lacked the level needed to win a large MPA in the Southern Ocean. ASOC, Pew, Greenpeace and WWF decided to form the Antarctic Ocean Alliance (AOA) in order to motivate a large public base, generate more media and carry out enhanced advocacy. Steve Campbell was AOA's first director, overseeing a significantly enhanced campaign with new teams in China and Russia and expanded teams in South Korea, Australia, N.Z., the U.S. and the European Union. By using social media it was possible for the AOA to raise public expectations in key countries, with regular missions to all key countries for face-to-face discussions with negotiators, followed by targeted letters and emails to decision makers.

At the 2011 CCAMLR meeting ASOC pressed "The Case for a Ross Sea Marine Reserve," demonstrating that the Ross Sea meets all CCAMLR and international criteria for protection [78]. The U.S. National Oceanographic and Atmospheric Administration hosted an important Ross Sea workshop from March 27-29, 2012, led by Dr. George Watters (National Marine Fisheries Service) and Dr. Polly Penhale (National Science Foundation. Its report underpinned the U.S. political position on the MPA proprosal at CCAMLR.

At the 2012 ATCM and CCAMLR meetings, supported by AOA's expanding campaign team, ASOC published "Antarctic Ocean Legacy: A Marine Reserve for the Ross Sea", with detailed maps and information about various ecosystem components for the MPA, the first time delegates had seen the whole story laid out so visibly [79]. An overview blueprint of an MPA network was published at the same time, "Antarctic Ocean Legacy: A Vision for Circumpolar Protection" [80]. These were major campaign initiatives of a type and sophistication we hadn't been able to do before.

Several celebrities were engaged to help generate a public face for the campaign and energize social media. Leonardo Dicaprio, a well-known actor who works on ocean protection, and Sylvia Earle, a scientist and the doyen of ocean protectors who started "Mission Blue", helped put forward a vision of what a protected Ross Sea could mean. Their Twitter and Facebook feeds helped mobilize new public support. When Peter Young's film "The Last Ocean" became available for use in 2012, it was a perfect tool for the moment, with the political situation inside CCAMLR fluid and more and more countries supporting protection for the Ross Sea. Greater public awareness and advocacy were putting pressures on delegations, and their ministers.

At the beginning of negotiations the U.S. and N.Z. tabled competing versions of a Ross Sea MPA, to the glee of fishing stations. Obviously that was a foolish move. After a couple of years of haggling about details, they sensibly agreed to put forward a joint proposal in 2012 [81]. Its scientific basis was accepted by the Scientific Committee, even though it left out important sub-areas of the Ross Sea region as compared to the original proposal from ASOC-AOA. ASOC agreed to support the joint U.S.-N.Z. plan. Given the politics of CCAMLR, that was as good as it was going to get [82].

At the 2013 CCAMLR ASOC and AOA presented "Antarctic Ocean Legacy: Securing Enduring Protection for the Ross Sea", along with a printed booklet filled with maps and information [83]. Many delegates said how helpful it was in showing clearly what was on the negotiating table. ASOC and AOA introduced several other papers to help the negotiators, including "The Opportunity to Create an Antarctic Ocean Legacy" [84], "Climate Change and Ocean Acidification: Benefits of Marine Reserves and Marine Protected Areas" [85], "Applying the Precautionary Principle to Marine Reserves and Marine Protected Areas" [86] and "Duration of MPAs" [87].

In 2014 the IUCN World Parks Congress met in Sydney. There were many presentations on MPAs generally, which was one of three themes, and Lyn Goldsworthy presented a paper on Antarctic MPAs to help keep the political momentum going at CCAMLR [88].

The history of the next two years of negotiations on the Ross Sea proposal was tortuous. Suffice it to say that the size of the area protected went steadily downhill while important areas were left out, in order to pick up the votes of Russia, Japan and Ukraine [89]. In the end, a large Ross Sea MPA was designated

by CCAMLR on October 27, 2016 — indeed the largest in the world at that time [90]. While that was a significant step forward, ASOC still supports maintaining "The Last Ocean" as a reserve and climate monitoring zone, with commercial fishing phased out. That is just a dream for now.

ASOC is working to ensure that the Ross Sea MPA as designated is researched and managed appropriately to ensure maximum protection there, and that other priority areas are protected, including East Antarctica, the Weddell Sea and the Antarctic Peninsula [91]. One can have no foregone conclusions about the pace of success given the political and economic factors involved in CCAMLR's consensus decision making. But the scientific rationales for their designations are strong, and I have an inchoate hunch that the governments will eventually establish a serious MPA network that we can all look back on with pride.

Conclusions

Antarctica has fared reasonably well as the ATCPs moved from operating behind a wall of great secrecy with virtually no public input or scrutiny, to the relatively transparent system operating today. The evolved governance system works ponderously, ticking along with many formalities and rarely a sense of urgency. Thus far it has kept the peace in the Antarctic, and most member nations carry out useful scientific research, increasingly longer-term and important to global society. Most try to honor their commitments to protect the environment articulated in the AT, Protocol, CCAMLR and Measures, Decisions, regulations and guidelines, some legally binding, some hortatory. Although there have been transgressions, progress has been made on many issues, albeit incrementally and at a snail's pace from an NGO perspective.

After working in this field for forty years, I have learned that governments can be motivated to do things they didn't think they really wanted to do, and that once they engage on that path, more doors often open. The ever-expanding group of ATCPs has taken several important steps toward more professional and transparent governance, gathering their collective power to:

-Create a pioneering approach to managing fisheries based on an 'ecosystem as a whole' principle.
-Reject opening the region to minerals development.
-Establish the Environmental Protocol to cover most human activities in the region, including a prohibition on mining and drilling through a sophisticated, multi-step moratorium that essentially is indefinite.
-Open their meetings to participation by a reasonably wide range of inter-governmental and non-governmental organizations with relevant expertise.
-Develop ways of reporting accurately and publicly on their meetings, decisions and scientific results.
-Promulgate regulations and rules that are generally appropriate and useful, although there are many gaps remaining.

Make greater use of the very important Antarctic Treaty right of inspection of any facility. Scarcely utilized in earlier years, today inspections are more normalized as well as much more comprehensive, including environmental protection checklists. Broader and more frequent inspections increase transparency, which helps strengthen compliance.

-Open a path for CCAMLR to designate Marine Protected Areas, with scientific and NGO inputs on a number of large potential MPAs including the first one established in the Ross Sea in 2016.

ATCM and CCAMLR meetings today provide important roles for scientists, national program managers (COMNAP[92] is another important NGO in the ATS), and the different international UN, professional and civil society organizations given official status. ASOC, along with IAATO (the tourist observer) and IUCN are invited on a normalized basis. Except for meetings of the Heads of Delegation and some CCAMLR working groups, most business is conducted transparently, and reported on in a balanced way, as every nation must be satisfied before the reports are final. Meeting documents are made public in the four official languages following each meeting.

Great challenges remain for these "emperors" of Antarctica, but the foundation is reasonably solid because of the changes effectuated beginning in the early 1980s. I am particularly upbeat about the future as I contemplate the amazing NGO colleagues who have led the effort to hold the governments accountable.

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Rodolfo Werner, Andrea Kavanagh, Cassandra Brooks, Tina Tin, Sian Prior, Jessica O'Reilly, Bob Zuur, Karen Sack, Peter Young, John Weller, Virginia Gasçon, Adriana Fabra, Rob Nicoll, Julian Chen, Jie Hyun Park, Grigory Tsidulko, Irina Mikityuk, Gennadi Milinevsky, Randy Helten, Beth Marks Clark, Gerry Leape and Claire Christian.

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The Antarctic Treaty Secretariat 15 years after its foundation

Manfred Reinke

Abstract

Forty-five years after the signature of the Antarctic Treaty, the Antarctic Treaty Consultative Meeting XXVI in Madrid established the Secretariat of the Antarctic Treaty with its Measure 1 (2003). The Secretariat went into operation on 1 September 2004. Consultative Parties to the Antarctic Treaty had developed a new concept of a Secretariat. Created under the Antarctic Treaty, the Antarctic Treaty Consultative Meeting does not have an international legal personality. As a consequence, the Secretariat was founded as an entity under Argentine law and was internationally privileged through a headquarters agreement between the Consultative Parties and the government of Argentina. Patrizia Vigini published an analysis of the Secretariat after three years of its operation. This paper analyzes the performance of the Secretariat eleven years later. In doing so, it follows the requirements described in Measure 1 (2003). After 14 years of operation the Secretariat enjoys a stable position of operation and successfully supports the work of Antarctic Treaty Consultative Meetings and the Committee for Environmental Protection. It can be considered as an essential improvement to the functioning of the Antarctic Treaty System.

Key words

Antarctic Treaty System, Secretariat of the Antarctic Treaty

Introduction

Forty-five years after the signature of the Antarctic Treaty, the Antarctic Treaty Consultative Meeting XXVI in Madrid established the Secretariat of the Antarctic Treaty with its Measure 1 (2003)(Antarctic Treaty Consultative Meeting 2003b). The Secretariat went into operation on 1 September 2004. PartiziaVigni(Vigni 2007) regarded this foundation as "one of the most relevant manifestations of the ability of the Antarctic Treaty System (ATS) to develop progressively from a basic treaty framework to a quasi-institutional regime" when she evaluated the "achievements and weaknesses three years after its establishment". Now after 14 years of operation it is time to evaluate the work of the Secretariat again.

Much has been published about Antarctica, its geography, its history of discovery, its value for science, and its role in the global climate system, but public awareness remains low. Nevertheless, Antarctica's size representing 10% of the world's terrestrial surface, its geological history as an old continent having once been close to what today forms southern Africa and Australia, and its status as the only land beyond national jurisdiction continue to make it a destination for geopolitical and strategic considerations (Dodds 2017).

Geopolitical, economic and scientific interests developed in the nineteenth and early twentieth century, when private persons and countries deployed expeditions to the Southern Continent for discovery, science, whaling and sealing (see e.g.(SCAR ACTION GROUP History of Antarctic Research 2009)).

In the aftermath of the Second World War, countries with distinct interests in Antarctica began diplomatic initiatives to keep Antarctica outside of international tensions that were arising in the context of the Cold War and bi- and multi-lateral diverging interests in this region. Hanessian(Hanessian 1960) gives a detailed description of the complicated negotiations stretching over more than ten years until the signature of the Antarctic Treaty in December 1959.
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The Antarctic Treaty (Conference on Antarctica 1959) does not constitute an international organization but obliges in its Article IX : "Representatives of the Contracting Parties… shall meet … at suitable intervals and places, for the purpose of exchanging information, consulting together on matters of common interest pertaining to Antarctica, and formulating and considering, and recommending to their Governments, measures in furtherance of the principles and objectives of the Treaty …". These meetings are known as Antarctic Treaty Consultative Meetings (ATCMs). Consequently,when Measure 1 (2003) "Secretariat of the Antarctic Treaty"(Antarctic Treaty Consultative Meeting 2003c) was adopted, the Secretariat was created as an organ without a body. At the time of its creation, this presented some peculiarities vis-a-vis other similar international structures (Vigni 2007). Since legislative requirements of some Consultative Parties did not allow the creation of a secretariat with an international personality under such circumstances, in this specific case, Parties agreed and Argentina accepted that the Secretariat receive its legal personality in Argentine territory only and that immunities and privileges be granted through a headquarters agreement (implemented as Argentine law 25.888(Argentina 2004)).

Functions of the Secretariat

Article IX.4 of the Antarctic Treaty (Conference on Antarctica 1959) provides that "[t]he measures referred to in paragraph 1 of this Article shall become effective when approved by all the Contracting Parties …". At ATCM XIX (Antarctic Treaty Consultative Meeting 1995b) in Seoul, the meeting adopted Decision 1 (1995)(Antarctic Treaty Consultative Meeting 1995a). This Decision changed the way of adopting recommendations by specifying three different categories:Measures, Decisions and Resolutions. A Measure is a "text which contains provisions intended to be legally binding once it has been approved by all the Antarctic Treaty Consultative Parties…"(Article IX.4 of the Antarctic Treaty). A Decision is a text on an internal organizational matter and becomes operative at adoption or at such other time as may be specified. A Resolution is an adopted hortatory text.

Measure 1 (2003) "Secretariat of the Antarctic Treaty" (Antarctic Treaty Consultative Meeting 2003b) became effective on 6 October 2009. Decision 2 (2003)"Provisional application of the Secretariat Measure"(Antarctic Treaty Consultative Meeting 2003a) bridged the gap between the adoption and the entry into effect of Measure 1 (2003) by providing that "the Secretariat shall act in accordance with Articles 1, 3, 4 (paragraph 1) and 5 (paragraphs 1, 3 and 4) of the Measure, on a provisional basis…". This allowed the meeting in 2003 to take all further steps to start the operation of the Secretariat on 1 September 2004.

The Measure also states that "[t]he Secretariat shall constitute an organ of the ATCM. As such it shall be subordinated to the ATCM" and that "[t]he Secretariat shall perform those functions in support of the ATCM and the CEP which are entrusted to it by the ATCM."

Article II of this Measure states twelve functions that the Secretariat has to execute under the direction and supervision of the ATCM.

The first function deals with the Secretariat support for the organization of the ATCMs and CEP Meetings. Based on this provision, the Secretariat has developed a comprehensive support scheme for host governments and the meetings. Each year, one Consultative Party takes the role as host government and invites other Consultative Parties, Non-consultative Parties, Observers and Experts to an Antarctic Treaty Consultative Meeting in its country pursuant to Article IX of the Antarctic Treaty. In cooperation with host governments, the Secretariat has developed and maintains a detailed "Organizational Manual". It describes in-depth the division of tasks and costs between the host government and the Secretariat. As laid down in Measure 1 (2003), the Secretariat is responsible for document management. It collects and organizes the documents for the meeting and has them translated beforehand, acts as secretary to the meeting, and assists in the preparation of the reports of the meeting and the measures to be adopted by the meeting. The host government issues the invitations for the meeting and is in charge of the agenda and the schedule. It is also responsible for the facilities and services of the meeting, including audio/visual and information technology equipment and all conference personnel other than the Secretariat staff, translators and interpreters. The Secretariat guides the host government in the structuring of the meeting website that is open to the public. It also manages the password protected meeting section on its website which refers to the management and distribution of meeting documents, online registration and schedules.

The detailed description of the requirements allows host governments to implement an accurate budget for the meeting well in advance and reduce risks of organizational and technical failures. At the end of each ATCM the host government and the Secretariat jointly improve the organizational manual.

Technological development has allowed the meeting to move from a paper-based to a mostly paper-free meeting. From ATCM XXXII in 2009 to ATCM XL in 2017 the amount of printed paper was reduced by 95% during the meetings. On the other hand, this has considerably increased the demands on reliability, quality of service, and performance of the IT systems at the meeting, including high-speed Internet access.

The Secretariat provides secretarial support to the Chair of the Meeting and to the Working Group Chairs. The Executive Secretary is Secretary to the Meeting and to the ATCM Chair in cooperation with his counterpart from the secretariat of the host government. The Secretariat provides experienced secretaries either from its staff or contracts able secretaries from Consultative Parties.

Final Reports of Antarctic Treaty Consultative Meetings document the outcomes and are therefore of highest political value. Measure 1 (2003) tasks the Secretariat to "provide, with assistance of the host government, secretariat support for meetings held under the Antarctic Treaty and the Protocol. […] Secretariat support shall include: […] vi) Assisting the ATCM, in drafting the meeting documents including the final report". Reports are adopted in Working Groups, sessions of the Committee for Environmental Protection (CEP) and finally at the last plenary meetings of the ATCM and CEP. In conjunction with the ATCM and host governments, the Secretariat has developed a sophisticated rapporteur system over several years, which supports the special quality needs of the meetings. The system now comprises five internationally recruited professional rapporteurs, two national rapporteurs provided by the host government, a chief rapporteur and an editor. To this purpose, the Secretariat has developed a document management system which allows the electronic distribution of and commenting on drafts to facilitate the communication between rapporteurs, editor, chairs and delegates. External translators contracted and overseen by the Secretariat perform translations of the CEP report and Measures, Decisions and Resolutions during the meeting.

The next functions defined in Article II concern the support of intersessional work of the ATCM and the CEP and the coordination of communication and exchange of information amongst Parties required under the Antarctic Treaty and the Protocol. The intersessional work for the ATCM and CEP comprises a number of tasks. The Rules of Procedure of the ATCM and CEP (Antarctic Treaty Consultative Meeting 2016) request the Secretariat to post a preliminary version of the Final Report of the meetings in the four official languages on the ATCM homepage within three months of the end of a Consultative Meeting, and to distribute the printed final version within six months. The Secretariat implements intersessional contact groups on the restricted discussion forums of the Secretariat's website on request for the ATCM and CEP. Intersessional contact groups are key instruments for intersessional discussions between Parties and the preparation of proposals for upcoming ATCMs. The Secretariat also facilitates the exchange of information under Article VII of the Treaty (Conference on Antarctica 1959) that requests Parties to inform on:

"(a) all expeditions to and within Antarctica, on the part of its ships or nationals, and all expeditions to Antarctica organized in or proceeding from its territory;
(b) all stations in Antarctica occupied by its nationals; and
(c) any military personnel or equipment intended to be introduced by it into Antarctica".

Various measures of Antarctic Treaty Consultative Meetings have further specified this obligation. In 1991, the Environment Protocol added new requirements concerning the exchange of environmental information. During the last decade,the Secretariat has developed and implemented an Electronic Information Exchange System (EIES) as a central repository for exchanged information under the direction of the ATCM. ATCM XXXV (Antarctic Treaty Consultative Meeting 2012c) decided in its Decision 4(2012)(Antarctic Treaty Consultative Meeting 2012b) to exclusively use the EIES to exchange information in accordance with the Antarctic Treaty and the Protocol on Environmental Protection. The EIES is frequently used for operational purposes in Antarctica by Consultative Parties.

Further requests for Secretariat intersessional activities include the updating of the inspection report database; the updating of the databases for ASPA (Specially Protected Areas), ASMA (Specially Managed Areas), and HSM (Historic Sites and Monuments); and the preparation and upload of new Site Visitor Guidelines.

Other requests include the preparation of Secretariat Papers concerning updates on current states of discussions, for example in 2016/17 on the current state of recommendations of the 2012 CEP Tourism Study, or on the status of the 30 recommendations on climate change agreed at the ATME in Norway in 2011.

Further functions under Article II refer to the necessary coordination and contact with other elements of the Antarctic Treaty system and other relevant international bodies and organizations under guidance of the ATCM. The Secretariat was created as a mere administrative organ of the ATCM. Parties are very clear in their view that the ATCM cannot be represented by the Secretariat or the Executive Secretary because this might appear as the constitution of an undesirable institutionalization. Therefore, Parties usually restrict the attendance of the Executive Secretary to annual meetings of the Observers of the ATCM: CCAMLR (CCAMLR n.d.), SCAR(SCAR n.d.) and COMNAP (COMNAP n.d.). To avoid any misunderstanding, the Executive Secretary even attends CCAMLR Meetings in a special role as invited guest and not as an official delegate. In any case he only reports the decisions of the ATCM in order to make other international regimes aware of the activities and objectives of the ATS.

Article II also requests the Secretariat to circulate amongst the Parties any other relevant information and disseminate information on activities in Antarctica. In the early years of the Secretariat, the Executive Secretary developed the idea of a "Clearing House", where all relevant information about Antarctica would be linked. The exponential growth of information on the Internet in the last decade and new technical developments like social media including Facebook and Twitter technically outdated this concept. Nowadays, information about governmental and private activities in Antarctica finds their own ways of distribution through social media or special portals. Nevertheless, high

quality, accurate, non-political and up-to-date scientific advice is important for the Committee for Environmental Protection and the ATCM. In this regard, an important activity, which however lies outside of the scope of the Secretariat, is the development of the Antarctic Environments Portal. With Resolution 3 (2015) Parties welcomed " the development of the Antarctic Environments Portal ("the Portal") as a mechanism to provide state-of-knowledge reports on priority or emerging issues, which can be drawn on to support effective management and governance of the region, including effective implementation of the Protocol"; (Antarctic Treaty Consultative Meeting 2015b)(Antarctica New Zealand and Landcare Research 2015). The Antarctic Environments Portal is hosted by Gateway Antarctica and the University of Canterbury, Christchurch, New Zealand. It is funded by the Tinker Foundation, until 2018. Additional support is provided by the Scientific Committee on Antarctic Research (SCAR) and the Australian Antarctic Division.

Under Article II, another core function of the Secretariat is "to record, maintain and publish, as appropriate, the records of the ATCM and CEP and of other meetings convened under the Antarctic Treaty and the Protocol". No central depository for the records existed before the establishment of the Secretariat. Host governments were requested to retain a complete set of documents in their archives (Final Report ATCM XIII 1985, para 32(Antarctic Treaty Consultative Meeting 1985)). One of the first tasks of the new Secretariat was to collect and digitize all Final Reports of ATCM and CEP Meetings in the four Treaty languages. The collection of Final Reports in English is complete but the Secretariat continues to search for versions in French, Russian and Spanish.

Before the ATCM IX, London 1977, all documents submitted to Antarctic Treaty Consultative Meetings were classified. Discussion at ATCM IX resulted that "it was generally agreed that there should be increased efforts to make both [information and documents] more available to the public"(Final Report para 15 (Antarctic Treaty Consultative Meeting 1977)). Representatives resumed discussions at following ATCMs. Eventually at ATCM XIV, Rio de Janeiro 1987, the meeting adopted recommendation ATCM XIV-1 Public availability of ATCM documents: "Starting with the XVth Consultative Meeting, Delegations should indicate, when submitting an Information Document, if they intend that document not to be made public. In the absence of such an indication, the Document will be publicly available as from the closure of the Meeting at which it was submitted"(Antarctic Treaty Consultative Meeting 1987). The Secretariat was able to recover most of the meeting documents of former ATCMs in English but there are still considerable gaps in the collection in the other Treaty languages. All recovered documents were digitized and are available online through the website of the Secretariat.

Another important function under Article II is to "assist the ATCM in reviewing the status of past Recommendations and Measures adopted under Article IX of the Antarctic Treaty". The Secretariat presented its Secretariat Paper SP009 (Secretariat of the Antarctic Treaty 2007)at ATCM XXX, New Delhi 2007. It described the status of past recommendations and showed that the ATCM had adopted 339 Recommendations, Measures, Decisions and Resolutions between 1961 and 2006. Area protection and management was the single largest part, followed by other environmental issues. Together, they made up almost half of the recommendations. The next largest part was that of institutional and legal matters, followed by operational matters, monuments and information exchange. Between ATCM XXIX, Edinburgh 2006, and ATCM XXXVIII, Sofia 2015 the Secretariat

issued 10 Secretariat Papers on this topic in cooperation with the CEP, COMNAP and SCAR. The ATCM adopted in this period Decision 1 (2007)(Antarctic Treaty Consultative Meeting 2007), Decision 1 (2011)(Antarctic Treaty Consultative Meeting 2011), Decision 1 (2012)(Antarctic Treaty Consultative Meeting 2012a), Decision 1 (2014)(Antarctic Treaty Consultative Meeting 2014), Decision 2 (2015)(Antarctic Treaty Consultative Meeting 2015a)and Decision 3 (2017)(Antarctic Treaty Consultative Meeting 2017), which established lists of Recommendations and Measures that were designated as spent or no longer current. This function under Article II has now ceased.

The last function under Article II mandates the Secretariat to take responsibility for maintaining and updating an Antarctic Treaty System "Handbook"under the guidance of the ATCM. The Secretariat described the "Handbook" in its Secretariat Paper SP008 at ATCM XXXIII, 2010 in Punta del Este, Uruguay (Secretariat of the Antarctic Treaty 2010) as follows: "Measures adopted by the ATCM have been compiled, since 1977, in the "Handbook of Measures in furtherance of the Principles of the Antarctic Treaty". At ATCM XII (1983)[(Antarctic Treaty Consultative Meeting 1983b)], Parties adopted Recommendation XII-6 [(Antarctic Treaty Consultative Meeting 1983a)], which recommended that the handbook be renamed the "Handbook of the Antarctic Treaty System". It also required that it be brought up to date by the host government as soon as possible after each Consultative Meeting, and that it should contain an introduction outlining the background and history of the Antarctic Treaty as well as a preface to each section, as appropriate, giving a brief background to the measures set out in that section. It was required that the final reports of the ATCMs also be included in the Handbook". Following an extended discussion about possible new formats and contents of such a Handbook and taking into account new technologies, the Meeting adopted Decision 1 (2010)(Antarctic Treaty Consultative Meeting 2010) which tasked the Secretariat to publish a new compilation of relevant documents. It reads under paragraph 6) "that the production of the Compilation will be without prejudice to any action with regard to a "Handbook of the Antarctic Treaty System". However, the Secretariat is not required to take any action under Article 2, paragraph 2(k), of Measure 1 (2003) until so requested by the ATCM". Consequently, at this time, the presence of the Internet with its embedded information systems started to substitute the former "Handbook of the Antarctic Treaty System".

This concludes the evaluation of the Article II of Measure 1(2003). It demonstrates that the Secretariat has met and meets the challenges of this Measure and thus fulfils the requirement to effectively assist the Antarctic Treaty Consultative Meeting and the Committee for Environmental Protection in performing their functions.

Legal status

The Headquarters Agreement attached to Measure 1 (2003)(Antarctic Treaty Consultative Meeting 2003c) between the ATCM and the Argentine Government states in its Article 2 "Legal capacity": "The Secretariat as an organ of the ATCM has legal personality and capacity to perform its functions in the territory of the Argentine Republic". Vigni(Vigni 2007) expressed concern in her paper that the "geographically and substantially limited legal capacity of the Secretariat raises some problems for the functioning of this organ both within the ATS and the international community". Due to the

well-defined division of tasks between the host government and the Antarctic Treaty Secretariat in the organization of Antarctic Treaty Consultative Meetings, as described above, such a critical situation due to the lack of recognition of legal personality of the Secretariat or of the ATCM has never arisen. In this context, it was extremely helpful that the home governments of former and actual Executive Secretaries issued them diplomatic passports and that the Secretaries were fully accredited by the Argentine government. This also facilitated the exercise of the privileges in Argentina in accordance with the Headquarters Agreement.

The model of a geographically-limited legal capacity for a Secretariat was also used later for the creation of the Secretariat of the Arctic Council in Tromsø, Norway (Arctic Council Secretariat 2013). It states in similar words in its Article 2: "The Secretariat has legal personality and capacity to perform its functions in Norway." Delegates of the ATCM expressed in personal communication their view that there is a general reluctance of governments to create new international organizations if it is not absolutely necessary for their functioning.

Financial regulations

The Secretariat was and is sufficiently funded to fully perform its functions. From 2012 onwards, Parties adopted a zero nominal increase of its budget. Nevertheless, the Secretariat was able to implement its programs without any restrictions of its services. This was certainly supported by a low international inflation during this period. Finances of the Secretariat follow a bi-monetary approach where salaries are paid in US dollars and local expenses are paid in Argentine pesos. Even though Argentina faced high inflation rates well above 10% during the last years this was mainly compensated by the gradual devaluation of the peso against the US dollar. The Secretariat could fully exercise its financial privileges granted in the Headquarters Agreement (Antarctic Treaty Consultative Meeting 2003c) even during periods of extended currency and exchange restrictions. The Argentine government always provided full support in the negotiations with national authorities to enforce the Secretariat's rights under this agreement.

Conclusions

After 14 years of operation the Secretariat enjoys a stable position of operation and successfully supports the work of ATCM and CEP. The carefully developed provisions worked well during this period.

As intended, the Secretariat has considerably improved the organizational level of the ATCM by institutionalizing in particular communication pathways during the intersessional periods, as well as archive and document handling. Even though most of the tasks of the Secretariat are of an administrative nature, the ATCM and CEP have increasingly requested content preparation for discussions during the meetings.

One of the future challenges is the further development of the EIES to a comprehensive source of

information for operation – in particular for inspections under Article VII of the Antarctic Treaty – and for environmental governance. As to date, the quality control of data submitted from Parties is exclusively their responsibility. First steps are already initiated requesting a closer cooperation with COMNAP, which is in charge of coordinating national operations to Antarctica. To this purpose COMNAP maintains a comprehensive database of installations in Antarctica. The development of a comprehensive data quality assessment framework could improve the integrity, accuracy and reliability, serviceability, and accessibility of the data within the EIES, thus making it more useful for governance purposes.

Another challenge will be the coming-into-force of Annex VI to the Environment Protocol concerning liability arising from environmental emergencies (Measure 1 (2005)(Antarctic Treaty Consultative Meeting 2005)). Annex VI, the so-called Liability Annex, defines new roles for the Secretariat. Under its Article 5 – Response Action – it obliges Parties that are involved in a response action to an environmental emergency caused by a third party to accordingly inform the Secretariat. Furthermore, it established a fund to be maintained by the Secretariat under its Article 6 to compensate third parties for their environmental response under the decision of the ATCM. As to date, the Secretariat is well prepared to carry out these tasks.

Vigni(Vigni 2007) concluded that "[t]he creation of the Secretariat must be considered as an improvement of the ATS in terms of impartiality, effectiveness, and continuity in the enforcement of Antarctic provisions." Eleven years later this view can be fully supported.

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THE CAMLR CONVENTION: A PERSONAL REFLECTION ON MORE THAN THREE DECADES IN THE TRENCHES

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ABSTRACT

This article reviews the history and conservation efforts of CCAMLR to protect the marine living resources of the Southern Ocean. In this article I reflect on the achievements and challenges that this international organization had in its more than 30 years of existence in order to conserve the Antarctic resources and become a globally recognized intergovernmental institution regarding to the management of marine resources. This article contains many of the significant events that took place in the institution when I held the role of Executive Secretary of CCAMLR.

Key Words

CCAMLR, krill, Antarctic toothfish, Southern Ocean

THE CAMLR CONVENTION: A PERSONAL REFLECTION ON MORE THAN THREE DECADES IN THE TRENCHES

Article II of the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention) contextualises a precautionary (PA) and ecosystem (EBM) based approach to conservation and management in the Convention Area south of the Antarctic Polar Front[1]. Since inception in 1982, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) has implemented the conservation, fisheries management, ecosystem and biodiversity protection framework mandated by the Convention.

A key conservation principle of this framework emphasizes 'conservation', including 'rational [2]use' (Article II.2) when harvested resources are managed directly and other management requirements are addressed more broadly (Article II.3). The approach is also central to CCAMLR's PA and EBM management intent. However, situational and procedural uncertainty continue to challenge the effective development of management and conservation measures.

Put simply, the Convention's objectives aim to sustain Antarctic marine living resource (AMLR) conservation consistent with the Convention's general objective (Article II.1). To implement its mandated conservation and management approach, CCAMLR collects what data it can, while also weighing-up the extent and effects of inherent uncertainties in both data and, or, available knowledge. So called 'deficiencies' or 'gaps' are then evaluated when making management decisions. Attached formulation, adoption and revision of management measures ('Conservation Measures' in CCAMLR parlance – CMs) draws on "the best scientific evidence available" (Article IX.1.(f) and CCAMLR Resolution XXVIII.10).

Since attending my first CCAMLR meeting in 1984, I have consistently seen CCAMLR CMs striving to:

- Set target levels for the sustainable fishing of harvested species;
- Account for ecological-relationships between harvested, dependent and related species, including restoration of depleted populations;
- Minimise the risks of irreversible ecosystem changes not potentially reversible over two to three decades, and
- Account for natural, environmental or human-induced effects, and/or changes, other than harvesting.

This conservation approach is still without a real precedent and continues to evolve with time. It stands alone as a comprehensive and unique example of sustainability-focused, precautionary-based resource management in the modern era. CCAMLR has gained a significant reputation in a world where environmental responsibility, food security and civil license have grown in global political importance. Here, CCAMLR differs from other organisations with origins in Maximum Sustainable (MSY) and single-species harvesting principles. The Convention's conservation principles, precautionary and holistic ecosystem focus are still central to such differences when CCAMLR is compared with other marine governance and fisheries management regimes today.

A decade and half passed after the Convention was signed before relevant 1995 FAO Code of Conduct for Responsible Fisheries ('Code of Conduct') provisions, drawn from the 1995 United Nations Fish Stocks Agreement (UNFSA) (Articles 5,-6 and Annex II), were used to inform development of the

1995 FAO Technical Guidelines for a Precautionary Approach to Capture Fisheries and Species Introductions ('Precautionary Guidelines'). CCAMLR, particularly its PA, served as a 'blueprint' for these advances and was 'first out of the blocks' in this regard.

Currently, five fisheries illustrate CCAMLR's fishery management efforts - the Antarctic krill (Euphausia superba), South Georgia Patagonian Toothfish (Dissostichus eleginoides), South Georgia Icefish (Champsocephalus gunnari) and Heard Island D. eleginoides fisheries, as well as the Ross Sea Toothfish (Dissostichus spp.) exploratory fishery. The attached organisational processes and structures have complemented institutional statutes, with operationalization of Convention objectives exemplifying management actions directed at - (a) finfish fisheries, (b) new and exploratory fisheries, and (c) krill fisheries. The details of CCAMLR management actions addressing these fisheries clearly illustrate the principles guiding the organisation's scientifically-based, integrated and generalised management approach. Recognizing that ineffective compliance enforcement undermines management measure efficacy particularly efforts to counter irresponsible, as well as illegal, unreported and unregulated (IUU), fishing in the Convention Area, recent efforts to develop an institutional Compliance Evaluation Procedure (CCEP) stand out as innovative and precedent-setting for CM compliance monitoring and assessment.

Additional examples illustrate how CCAMLR has gone about developing scientifically-based CMs to not only regulate fishing, but also address the its ecosystem implications and potential effects. Consequently, consideration is being given to such matters as mitigating by-catch, accounting for targeted stock recruitment uncertainties and allowing for sensible levels of harvested-stock escapement to fulfil ecosystem needs. This was the basis for the krill precautionary catch limits first agreed in 1991. It also led to development of a krill catch 'trigger level', which if approached would require areal distribution of precautionary catch levels to spread the potential risks of localized overfishing. In their entirety, these outcomes constituted the first, and still only, such management strategy globally.

In developing its suite of PA-directed CMs, CCAMLR has exhibited a remarkable unity of purpose. In particular, new and exploratory fisheries CMs (CMs 21-01 and 21-02) gather essential information during early-stage (new and exploratory), fishery development. Exploratory fisheries measures introduced Small Scale Research Units (SSRUs) (e.g. CMs 21-02, 33-03, 41-01) as a tool to minimise the risks of over-concentrated fishing and to facilitate information-gathering aimed at enhancing available knowledge of harvested stock distribution, dynamics and abundance during the 'early' phases of a fishery's development. SSRUs are open to commercial and research fishing, with attached catch limits for target and by-catch species, or closed to fishing activities. Like CCAMLR PA-based decision rules for developed fisheries (i.e. krill and finfish), sustainability reference points and the best scientific advice available are used in formulating exploratory fishery CMs.

In 2002, Small Scale Management Units (SSMUs) were identified for parts of CCAMLR Statistical Area 48 (West Atlantic). The purpose of SSMUs is to geographically subdivide precautionary catch limits into smaller spatial management units; in the Area 48 case to guide future krill catch limit and fishing activity management. Various krill ecosystem dynamics models help evaluate catch limit allocation options using plausible levels derived from model parameter values. However, progress

on universal SSMU implementation for krill fisheries continues to be slow, if not negligible, in the face of concerns about fishery, krill, and predator interactions. The issue is complicated by perceived changes in krill availability attributable to variability in the species' distribution caused by immigration, emigration and other possible factors such as changing ocean circulation/currents. Complex work of this kind continues, despite the urgency of perceptions that the krill fishery is expanding and will continue to expand significantly in the future. To some extent these concerns have been ameliorated by interim distribution of the krill catch trigger level (CM 51-07) until the 2020/21 fishing season in Subareas 48.1, 48.2, 48.3 and 48.4. But SSMU implementation remains limited as does the final decision, mandated by CM 51-07, on apportioning krill precautionary catch limits in Area 48 generally.

Equally, CCAMLR still has yet to implement specific stock rebuilding strategies other that area, and/or fisheries, closures. It has also to take explicit account of the CCAMLR Ecosystem Monitoring Program (CEMP) data in CM formulation, especially in its efforts to separate fishing-induced changes from other potential effects on target species such as krill.. Such effects include varying predator demands for krill, species composition and environmental changes such as ice distribution. Both CCAMLR's assessment and decision-making processes allow such other concerns to be included in CM development. In particular, exercising precaution for the krill fishery is seen as important for mitigating risks of irreversible changes (Article II.3.(c)) in the Antarctic marine ecosystem as a whole. For krill in particular, inherent risks attached to injudicious, irresponsible, harvesting flow from its status as a keystone species, as well on-going uncertainties attached to the species' dynamics in relation to ocean warming and changing sea-ice distribution. Therefore, recent growing CCAMLR concern has come to focus on potential climate change implications for the Antarctic marine ecosystem This has meant that more explicit consideration of climate variability is seen as necessary to better understand ecological interactions between harvested and other species as well as with a changing marine environment.

Apart from krill being central to the Antarctic marine ecosystem as demonstrated by Article II objectives, other examples of CCAMLR's ecosystem-based management endeavours have emerged over the years. These include monitoring of ecosystem 'health', via CEMP, while spatial management over the past decade and a half has contributed to general environmental and biodiversity protection. However, while potential climate effects on CCAMLR fisheries are being considered, attached socio-economic implications of such effects are unlikely to be adequately addressed for some time yet. Without further insights on economic, and other, forces influencing CCAMLR fisheries development, an absence of this key information only makes predicting future fishery development(s) more difficult. The situation persists, despite new and exploratory fishery CMs being key to the effectiveness of CCAMLR's regulatory framework. In fact, progress on identifying the relevant socio-economic forces driving fishery development continues to be rudimentary and has only recently begun to build momentum globally.

Attached to CCAMLR widening consideration of climate change implications, there is growing recognition that these implications are an important element to be addressed by the organisation's management and conservation efforts. A focus on aligning the potential effects of harvesting has emerged within the context of both long and short term ecosystem changes, as well as within

broader CCAMLR conservation strategies. Global trend-setting CMs have thus been agreed (marked '*' in the next paragraph) to augment more customary measures. Four measure categories have evolved to address - (a) compliance, (b) general fishery matters, (c) fishery regulations and (d) protected areas[3]. Non-binding Resolutions also elaborate salutatory, or 'soft', invocations aimed at enhancing 'good practice'.

Key examples of CMs in the categories above include; (a) CCAMLR Members' licensing and inspection obligations (CM 10-02), *port inspections of vessels carrying Antarctic marine living resources (AMLR)(CM 10-03), *automated satellite-linked Vessel Monitoring Systems (VMS)(CM 10-04), *Catch Documentation Scheme (CDS) for Dissostichus spp. (CM 10-05), promoting compliance by Contracting/Non-Contracting Party vessels (CMs 10-07 to 10-08), *transhipment notification (CM 10-09), *CCAMLR Compliance Evaluation Procedure (CM 10-10); (b) *notification of a new fishery (CM 21-01), *exploratory fisheries (CM 21-02), *krill fishery notification (CM 21-03), gear regulations (CMs 22-01 to 22-09), data reporting (CMs 23-01 to 23-07), *research (CMs 24-01, 24-02, 24-04), *minimisation of incidental mortality from 1991 (CMs 25-02 to 25-03), *environmental protection (CM 26-01); (c) general fishery measures (CMs 31-01 to 31-02), fishing seasons/closed areas/fishing prohibition (CMs 32-01, 32-02, 32-09, 32-18), *by-catch limits (CMs 33-01 to 33-02), *new/exploratory fishery by-catch limits (CM 33-03), toothfish fishery measures (CMs 41-01 to 41-11), icefish fishery measures (CMs 42-01 to 42-02), *krill fishery measures (CMs 51-01 to 51-07) including *general measures for scientific observation in krill fisheries (CM 51-06),* interim distribution of the krill catch level /XX, (CM 51-07); (d) *protection of CEMP sites (CMs 91-01), and *marine protected areas (CMs 91-02 to 91-05). As a general framework for establishing MPAs, CM 91-04 provides a unified approach to underpin CCAMLR's endorsement of the need to establish an MPA network in the Convention Area,

From an EBM perspective, specific note is taken of CMs dealing with: *interim prohibition of deep-sea gillnetting (CMs 22-04), *bottom fishing (CMs 22-05 to 22-07), *protection of vulnerable marine ecosystems (VMEs) (CM 22-09). Important CCAMLR resolutions ('Re.') include: banning of driftnet fishing (Res. 7/IX), CDS implementation by Acceding States/Non-Contracting Parties (Res. 7/IX), use of non-CDS implementing ports ((Res. 15/XXII), application of VMS in the CDS (Res. 16/XIX), flags of non-compliance (Res. 19/XXI), international actions to reduce seabird incidental mortality during fishing (Res. 22/XXV), fishing vessel safety measures (Res. 20/XXII, 23/XXIII), 34/XXXI), combating IUU fishing in the Convention Area by Non-Contracting Party vessels (Res. 25/XXV, 32/XXIX), using specific krill tariff classifications (Res. 27/XXVII), ballast water exchange in the Convention Area (Res. 28/XXVII), climate change (Res. 30/XXVIII), best available science (Res. 31/XXVIII) and vessels without nationality (Res. 35/XXXIV).

The complex, diverse and wide-ranging list of CCAMLR-implemented management and conservation initiatives underscores the organisation's importance, flexibility and trend-setting approach to its responsibilities. The Commission's recognition of a need to be openly consultative in seeking consensus on CMs is a major contributor to its innovative PA and EBM efforts.

On balance, CCAMLR's maturity as a marine governance and conservation institution stands alone. With this comes recognition that it is 'the global leader to follow'. Having evolved for nearly

four decades, CCAMLR has not only absorbed modern conservation and sustainability norms, it has benefited from its regional, broader-than-fisheries remit. The latter includes a rich pedigree of environmental stewardship, inherited from strong cooperative policies within the Antarctic Treaty System[4] and the 1961 Antarctic Treaty (Article IX.1.(f)) itself. In a global sense, this evolution has benefited from international advances in fisheries management since the 1990s. In particular, the emergence of international instruments such as the Code of Conduct, Precautionary Guidelines and UNFSA have helped CCAMLR assume it rightful place as a significant proponent of good fishery management and environmental protection practices in the modern age.

In pursuing the Convention's mandate, CCAMLR has demonstrated time-and-time again that its EBM management and conservation approach does not need to be over-elaborate, and/or unduly complicated. As part of its pragmatic and realistic efforts, the organisation continues to address complex conservation norms well beyond a harvested single-stock dynamic. By meeting one of the most profound challenges that modern fisheries managers face, CCAMLR's efforts to operationalize holistic marine ecosystem management approaches stand 'above and beyond'. CCAMLR continues to demonstrate positive progress in meeting the Convention's conservation and management objectives, coupled with a realistic appreciation of attendant compliance and enforcement needs.

Despite obvious successes, scientific differences, sometimes coupled with political interference, may magnify contentious issues. Nonetheless, CCAMLR continues to deliver timely decisions on responsible management of its fisheries. In contrast, incomplete monitoring of AMLR international trade suggests that broader consideration of this particular issue is required; something that is not necessarily confined to CCAMLR alone. A stronger commitment by CCAMLR Members will certainly help to improve understanding of AMLR fishery economics in a global trade and market context. The monitoring of AMLR trade is another compelling reason to ensure that technical capacity for addressing the Convention's information needs is uniformly spread throughout the Commission's membership. Only then will no Member run the risk of being 'left behind' when decisions are taken to secure fishing opportunities and/or to identify conservation options.

From time-to-time, CCAMLR's ability to fully meet Convention objectives has been limited by the need to accommodate widely divergent, and/or self, interests. This can lead to detrimental consequences[5] for particular fisheries under the Commission's control. Such circumstances are often perceived as individual Members protecting their own interests, even though these interests may impact Commission Members more broadly. For example, there have been instances when consensus on appropriate CMs has been deferred, often resulting in protracted debates where compromise and consensus have been difficult to reach. Again, the most recent debate has focused on how the CCEP might be applied; a situation which many CCAMLR Members viewas undermining the Procedure's application and effectiveness.

A perennial challenge highlights an ongoing need for additional knowledge about Antarctic marine ecosystem dynamics, particularly concerning - (a) exposure to various impacts (including potential climate impacts) and (b) sensitivity to associated social-ecological/social-human processes. While the Commission continues its efforts to mitigate potentially-detrimental impacts on both fisheries and the ecosystem, a key to evaluating management mitigation cost-efficacy remains the extent to

which the 'social-ecological', or 'human', subsystem as well as the ecosystem ('natural') subsystem are valued within the CCAMLR conservation-management paradigm. If CCAMLR fisheries are likely to impact the ecosystems in which they take place, either directly and/or cumulatively, then these impacts must be monitored and fully assessed so that consequent management action is as well-informed as it can be. This has not always been the case and in some cases is seen as a failure of CEMP-derived information to be constructively used in CM formulation.

Adhering to Convention principles, potential interactions between krill fishing and the Antarctic marine environment assume significant prominence, particularly if associated social-ecological systems are forced into states unacceptably challenging CCAMLR's legitimacy and/or sustainable management approach. It is interesting to note that the impending emergence of a substantial krill fishery was a key motive for negotiating the Convention in the first place. Consequently, should ecological, economic or resource thresholds ('tipping points') be reached, reactive management alone will not achieve sustainable outcomes for target stocks. CCAMLR's current management regime is thus unlikely to provide adequately responsive and effective mitigation policies, strategies or actions in the long-term unless proactive solutions are sought, given thought and effectively implemented. Again, the need for a uniform, coherent and consistent level of conservation management remains paramount, together with the need for adequate, cross-institutional scientific capability, objectivity and capacity. A linkage of all Article II's conservation principles is an essential per-cursor for all the Convention's objectives to be effectively met.

Under prevailing circumstance, future sustainable and responsible fishing in the Southern Ocean obviously depends on effective implementation of, and compliance with, robust CMs. In particular, the krill fishery's potential future expansion, and the species' ecological importance, strongly emphasise the need for effective compliance enforcement in particular. Most notably, the attendant ecological and economic risks of a systemic compliance failure in this particular fishery holds substantive implications for the Antarctic marine ecosystem as a whole. The endemic and negative effects of IUU fishing on some toothfish stocks from the mid-1990s only emphasise the importance of compliance enforcement to meeting Convention objectives. This prevails despite CCAMLR having achieved considerable success in combating IUU fishing for toothfish in particular.

CCAMLR's regulatory and management framework continues to offer a pragmatic and cost-effective approach to conserving the krill resource in particular, as well as finfish stocks and the Southern Ocean marine ecosystem's future sustainability generally. The attached management processes have evolved progressively to offer suitable PA and EBM orientated approaches consistent with Convention Article II objectives. However, development of a formally-structured, holistically-focused and predominantly risk-based CCAMLR management approach continues to be slow, with details of a feedback approach for the krill fishery having been discussed for more than a decade and only afforded serious consideration since 2013. In this respect, important future CCAMLR risk 'impact ratings' should explicitly include the effects of ecological variability, increased uncertainty concerning stock status and potential environmental impacts such as climate change. For these reasons, CCAMLR monitoring of catches and harvested stock sustainability levels remains a key priority, as does improving knowledge of ecosystems dynamics and functioning. Attendant, and important, socio-ecological consideration are also important

to mobilise sufficient 'political capital' for addressing important issues. In effect, compliance enforcement and diligent CM implementation are 'two sides of the same coin' as they both underwrite conservation and biodiversity protection in the CCAMLR Area.

Collectively, or alone, CCAMLR management efforts are not a panacea for the institution's enduring success. This requires ongoing Member commitment and the involvement of a dedicated and highly professional scientific cadre[6], if the organisation is to sustain its place at the cutting-edge of best international marine conservation practice. The fragility of CCAMLR's consensus-based decision-making is both a strength and weakness here, although it has demonstrated remarkable flexibility in dealing with complex challenges posed by ecosystem-based, marine resource governance that includes both marine biodiversity protection and ecosystem conservation elements. Nonetheless it has, on occasion, fallen victim to the 'power of one' where a dissenting party has blocked consensus. This is a 'real and present danger' if international cooperation in the Commission should be undermined by national interest(s), and if CCAMLR should distance itself from the Antarctic Treaty's conservation 'ethic'. In my mind, CCAMLR's conservation and management outcomes over the next 30 years will depend heavily on the extent to which the krill fishery is able to absorb commercial harvesting pressure in the face of potentially profound ecosystem consequences that are likely to arise should the species be subjected to over-exploitation. CCAMLR's continued pursuance of conservation, including sustainable (i.e. "rational") use, remains the key to addressing this particular challenge, as does the promulgation and use of objective, considered and fearless scientific advice.

With some CCAMLR management procedures, needs and considerations remaining 'under cooked', ineffective or incomplete, it can be realistically inferred that CCAMLR still has some way to go in meeting its future challenges. The organisation cannot afford to 'rest on its laurels', or become complacent, if it is to retain its place as the marine conservation 'leader to follow'. As Lisa Haisha (SoulBlazing Institute) puts it:

"Great leaders don't set out to lead, they set out to make a difference. It's never about the role always about the goal"

While there may be dark interpretations attached to this quotation, I see it as extremely relevant to CCAMLR since it is not only about making a difference, but also strongly guided by Convention Article II objectives. To me, John C. Maxwell's words resonate most strongly when CCAMLR continues to unequivocally demonstrate globally that it is:

"A leader who knows the way, goes the way and shows the way"

REFERENCES

1- *The Convention Area's boundaries are stipulated in Convention Article I.4 as applied to the "Antarctic Convergence" which equates to the geographic location of the Antarctic Polar Front.*

2- The term 'rational use' has been debated since the late 1980s (e.g. CCAMLR, 1989, paragraphs 65 to 75; CCAMLR, 1990, paragraphs 8.1 to 8.14 and CCAMLR, 1991, paragraphs 6.13 to 6.23). Currently, there is general agreement that the term is consistent with the Convention's objective of conserving Antarctic

marine living resources with 'rational use' being an important inclusion in the CCAMLR context.
3- Annual Schedule of Conservation Measures in Force at https://www.ccamlr.org/en/conservation-and-management/conservation-measures.
4- Such as the 1991 Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol)
5- For example different perceptions of 'non-compliance' recently experienced when assessing certain fisheries with the CCEP.
6- CCAMLR has recognized the need for wider scientific burden-sharing by setting up a General Science Capacity Special Fund. At: http://www.ccamlr.org/en/publications/quality-and-provision-scientific-advice.

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The Compliance Evaluation Procedure of CCAMLR: Current Problems and Proposals for Improvement

Osvaldo Urrutia

ABSTRACT

The purpose of this paper is to present some difficulties faced by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) in the implementation of its Compliance Evaluation Procedure (CEP) and to propose possible solutions. The article is divided into two parts: the first presents some key definitions in compliance and implementation, together with a brief description of the work of the Standing Committee on Implementation and Compliance as a subsidiary body of CCAMLR. The second part describes the compliance procedure as important tool for promoting compliance and implementation with respect to CCAMLR members, identifying problems in their application and possible options for improvements. Behind the several difficulties identified looms one major issue that was once seen as a primary strength of CCAMLR: the rule of consensus.

Key Words

CCAMLR, Antarctic fishing, compliance evaluation procedure, implementation

Compliance and Implementation in the Context of CCAMLR

A) Basic definitions

Compliance and implementation go hand-in-hand. The Contracting Parties to the Convention for the Conservation of Antarctic Living Marine Resources (hereinafter referred to as the Convention)[1] assume the obligation to comply with its provisions and with the standards adopted under it by the Commission for the Conservation of Antarctic Marine Living Resources (hereinafter referred to as CCAMLR or Commission), which are binding in accordance with article IX number 6 letter (b). Implementation actions are those carried out by a State party in order to fulfill the obligations imposed by the Convention and the conservation measures dictated in accordance with article IX[2]. The "appropriate measures within its competence to ensure compliance with the provisions of this Convention" referred to in article XXI will be different depending on the national law of each country involved[3]. Of course, the fact that a State party[4] carries out implementation actions is no guarantee of compliance, as this depends on the appropriateness and effectiveness of such actions[5]. This is very much to be determined by the Commission through the work of its Standing Committee for Implementation and Compliance (hereinafter referred to as SCIC)[6].

The nature of the obligations emanating from environmental and natural resources management treaties or regimes, especially those addressing common areas and common concerns, makes the traditional dispute settlement mechanisms more often than not resisted by party States, and they usually do not achieve good results[7]. Like the vast majority of international multilateral organizations with competence in environmental subjects and fisheries matters, CCAMLR has developed its own system to oversee and encourage compliance with its rules[8]. Similarly, and like other multilateral environmental regimes, CCAMLR has opted for non-adversarial mechanisms or non-compliance mechanisms[9]. A good example of this is the work of the SCIC within CCAMLR and its Compliance Evaluation Procedure.

The reasons that explain the above are not new. Fundamentally, the violation of an international obligation, including those arising from a treaty, results in the international responsibility of the State. As Crawford recalls, in the event of a violation of a treaty, the Law of Treaties (Vienna Convention of the Treaty Law of 1969) and the general theory of State responsibility coexist[10]. In this regard, violations of CCAMLR norms, as they are attributed to a particular State, entail in principle the international responsibility of the State. The traditional tools that international law has available in the face of these cases are essentially unilateral actions that the affected States take against these violations, including countermeasures.

However, as Jutta Brunée puts it, the self-protection measures that one State adopts against another in cases of non-compliance have very limited effects when it comes to the protection of global or common goods—as is the case of Antarctic waters and their resources. There are several reasons for this, but it is sufficient to indicate, for example, the difficulties that arise in establishing causal relationships between non-compliance and injury, or how they could take countermeasures when it comes to obligations that have an erga onmes nature[11]. Moreover, measures of this kind are by definition confrontational and reactive[12], which is precisely something that should be avoided when

it comes to the protection and management of common goods. On the other hand, situations of non-compliance often occur due to the lack of capacity of the respective State, so that the mechanisms that facilitate or help their members to comply are likely to have more effective results than the confrontational mechanisms. Something similar can be said of international litigation. This is not to say that, as a matter of principle, traditional dispute settlement mechanisms should be dismissed[13].

What it has been said does not mean that non-compliance mechanisms are particularly effective. Its multilateral structure diminishes its effectiveness, and the implicit logic of reach agreement requires the formulation of concessions. CCAMLR also faces an additional difficulty: all of its decisions on substantive matters are adopted by consensus, including those on the subject of compliance[14]. It should also be highlighted that some inherent and intrinsic factors of the CCAMLR context add complexity as well. Achieving compliance with conservation and management measures in the Antarctic Ocean is not a simple task. Given the size and navigation conditions of the area, monitoring and control are particularly difficult, and inspections at sea are costly. As in practice the waters of CCAMLR are regulated as high seas, the promotion of compliance exhibits the typical limitations and challenges of the flag State jurisdiction, where there are ample disparities in terms of capacity, efficiency and determination in the exercise of such jurisdiction.

B) The Standing Committee on Implementation and Compliance (SCIC) as a specialized body within CCAMLR

As expressly acknowledged in article X of the Convention, it is for the Commission to adopt actions to improve compliance and implementation[15]. The Commission in turn delegates to SCIC the task of examining and evaluating the extent to which the Contracting Parties have complied with and implemented the existing conservation measures, and to make the recommendations accordingly.

Unlike the Scientific Committee, the SCIC is not an organ created by the Convention. The Convention does not expressly recognize the Commission's ability to create subsidiary bodies, and only the Commission Rules of Procedure do so (rule 36)[16]. The SCIC formally acts under the framework of the Commission, and of course all of its recommendations may be approved, amended, or rightly revoked by the Commission. In this sense, the SCIC strictly does not make decisions, but adopts recommendations that in practice translate into proposals that the Commission will evaluate to adopt as binding measures or other types of actions. This does not mean that the SCIC does not make decisions in a material sense: its recommendations are the result of a process of discussion, presentation of factual information and valuation that through consensus translates into written language (report) for consideration by the Commission.

1. The Functions of SCIC

The text of SCIC's mandate and organisation, which in practice serves as a real statute for this Committee, was adopted at the Commission's 21st meeting in 2002. SCIC replaced the former Standing Committee on Observation and Inspection (SCOI), which had been created in 1987 at the 6th meeting of CCAMLR[17]. Bearing in mind that paragraph 2 of the SCIC Terms of Reference and Organisation of Work, numbers i) and ix), it is possible to group and summarize its work in

three categories:

(a) Promote compliance and implementation of existing measures

The first and most important role has to do with the review and assessment of the extent to which the Contracting Parties fulfill and implement the conservation and management measures adopted by the Commission, the advice and formulation of technical recommendations to promote such compliance, and to adopt measures to prevent, discourage, and eliminate activities that undermine the objectives of the Convention. This attribution is essential in the work of SCIC and its main objective.

(b) Technical advice and recommendation of new measures or amendments to existing ones

The second is the formulation of recommendations to the Commission to improve those conservation measures —which are not clearly scientific, administrative or budgetary in nature, as in these cases they should be dealt with by a different subsidiary body—, concerning the management and regulation of fisheries. This does not preclude the recommendation of new measures. Some of these proposals come from previous deliberations where it was concluded that the best way to facilitate compliance is to modify the conservation measure itself, which can be attributed to its text being unclear and up for interpretation[18]. Coherent, accurate, and up-to-date conservation measures facilitate compliance, and connect this SCIC function to the previously mentioned.

Additionally, it is common for SCIC to be the first instance to discuss some of the proposals for new conservation and management measures. In practice, this requires using valuable time within the busy schedule of SCIC.

(c) International Cooperation

The third category is related to priorities for improving cooperation with other international organizations. While the importance of international cooperation should not be underestimated, the fact is that these matters do not occupy a predominant place on the agenda of SCIC. It is common for the Commission to delve deeper into aspects related to international or regional cooperation. This seems suitable as the aspects of cooperation involve decisions of political content that are in line with the Commission natural and most prominent role.

2. The Nature of SCIC's Role

Bearing in mind these stated functions, especially the first two, it should be concluded that the nature of the work of SCIC is essentially technical, in the sense that it requires the application of specific knowledge mostly of a legal nature with respect to fisheries, the environment, and even maritime regulation. It is therefore important that political considerations do not interfere with the work of identifying and evaluating cases of non-compliance, such as those relating to who the involved States are. Not only because they are intrinsically contrary to any impartial analysis of an incident of non-compliance, but also because it carries the risk of adopting inconsistent measures for similar cases.

That said, the SCIC is not a court or tribunal. Its functions do not resemble dispute resolution or adjudication. It is not a question of weighing the evidence or facts on the basis of judicial criteria, much less applying rights or standards proper of criminal law. SCIC's work consists of evaluating the degree of compliance, proposing corrective actions, and providing technical advice to achieve the state of compliance necessary. Additionally, SCIC should not lose sight of its systemic role in the proper functioning of CCAMLR: to identify general situations on non-compliance and difficulties of implementation beyond the particular case, in order to distinguish its causes and how to confront them.

Since each State is sovereign to choose the implementing mechanisms it deems necessary to achieve compliance—unless otherwise provided—, SCIC focuses mainly on considerable external results and objectivity. It is for this reason that the subjective motivation in cases of non-compliance—such as fault—should be irrelevant. Practice confirms this. This is not to say that SCIC is prevented from considering issues such as the nature of the offense, the extent of the damage or injury, or whether the situations are fortuitous cases or acts of God[19]. SCIC has considered these elements on more than one occasion and the Compliance Evaluation Procedure is not indifferent to these factors. SCIC decisions ought to consider and balance the importance to prevent situations on non-compliance in the future and to improve the implementation of existing measures, and the need to adopt actual remedial measures in those cases of non-compliance that deserve it.

The Compliance Evaluation Procedure as a tool of SCIC to promote compliance and implementation

The Compliance Evaluation Procedure (hereinafter referred to as CEP) is identified with the first two categories within the classification proposed in the previous section: its main objectives are the improvement of compliance and the identification of interpretation and implementation problems in the existing CCAMLR measures. Before analyzing its functions and dynamics, some preliminary questions will be addressed below.

A. Preliminary questions

1. Who holds the responsibility—the ship or the flag State?

Given the special legal status of the Antarctic continent[20], the jurisdiction in its waters is essentially that exercised by the flag State. The inherent jurisdiction of the port State is also relevant, and is exercised regularly by those conducting inspections on vessels that have operated in the Convention area. The same happens with measures that obligate members to exercise jurisdiction over their nationals if they are embarking on foreign-flagged vessels[21].

Most if not all the non-compliance cases that SCIC deals with are vessels operating in Antarctic waters under the flag of one of the members of the Commission. What must be evaluated then is whether there is infringement of the rules adopted by CCAMLR and whether the flag State –or the port State or the State of nationality, when appropriate— has exercised its jurisdiction accordingly and appropriately[22] The relevant point is that for the purposes of the compliance and implementation

mechanism of CCAMLR, the responsible entity for these obligations is not the fishing vessel, but the flag State. This is well understood by the Commission and SCIC. The Commission has pointed out that when considering the actions of its members, the implementation of the obligations on the part of a fishing boat is the responsibility of the flag State, and that the CEP is intended to assess the compliance of members considering their responses and the corrective measures taken to solve compliance problems[23]. Upon the recognition of a non-compliance situation, the corrective actions and technical advice are aimed at the flag State and not the ship: it is the duty of the first to implement such measures in respect of the latter.

In general, the reference in the following sections of this paper to non-compliance is understood to refer to scenarios where the implementation is insufficient, but this doesn't always coincide. It is perfectly possible and it often happens that a CCAMLR member has properly implemented its obligations, but the ship operating under its flag simply fails to comply with the rules applicable to it. In these cases, the relevant things to consider are the actions that the flag State adopts to correct such instances and prevent them in the future.

2. The CEP is not the only tool to promote compliance

While this paper focuses on the CEP, this is not the only tool that CCAMLR and SCIC use to promote compliance. For example, the evaluation of some measures is carried out separately from the CEP such as the Catch Documentation Scheme for Dissostichus given its nature and complexity, and the revision of fishery notifications, as they are a prerequisite for carrying out operations in the CCAMLR area. In the latter case, such a review is not entirely detached from the application of negative consequences for non-compliance. The case of Hongjin707 is a good example and makes it possible to clarify this statement. This ship carried out illegal fishing activities in the exclusive economic zones of Atlantic countries in 2013. South Korea did not validate the respective certificates of Dissostichus catches, in addition to applying fines. As part of the process followed by the South Korean authorities, the ship was supposed to get rid of its catches in a way that would not be of financial benefit to the ship-owner[24]. However, several members—including the United States and Australia—pointed out in 2016 their discomfort by the fact that apparently the ship did not get rid of its illegal catches. South Korea had that year submitted a the notification for the Hongjin 707 so that it would in fact be active in the Dissostichus fishery in Subareas 88.1 and 88.2 during the 2016/2017 season. Members vehemently opposed this alleging that South Korea was not fulfilling its responsibilities as the flag State. The pressure on South Korea meant that the Commission—with the consensus of South Korea—finally agreed not to approve the fishery notification, which in this context could be considered as a punitive measure.

SCIC also has direct sanctions for cases of non-compliance. The best example is the inclusion in the list of vessels that have undertaken illegal, unreported and unregulated fishing, or IUU fishing, in the Convention area. CCAMLR has two lists: one for ships flagged to CCAMLR Contracting Parties and the other for non-party States[25]. Being listed carries negative consequences for the ship, the ship-owner and flag State, especially when it comes to members of the Commission.

The existence of the CEP has contributed to address the most serious cases of non-compliance or

illegality committed by vessels flagged to CCAMLR members through the adoption of corrective measures under the CEP rather than by including them on the IUU list according to measure 10-06. This is not necessarily positive. Of course, not every case of non-compliance or illegal action should result in a vessel being included on such a list, but it does not seem sensible to rule out this discussion under the premise of dealing with such cases purely in the CEP. CCAMLR's conservation measures and SCIC practice should be clearer about what type of illegal actions would merit the inclusion on the IUU list. Today this does not occur, since Conservation Measure 10-06 (2016), which currently governs the matter, is too broad in its criteria. True, there is always the possibility that under the consensus rule the member whose ship will be affected may block such a Commission's decision[26]. But these are different issues. It is perfectly possible to deal with cases of serious illegality under the CEP without excluding the possibility of listing a vessel if it engaged in serious illegal fishing. SCIC could also recommend the inclusion of a vessel in the Draft List pursuant to paragraph 6 of Measure 10-06 (2016), i.e. from one year to the following year's Draft List.

B. The Compliance Assessment Procedure (CEP): structure and implementation

At the XXXI meeting of the Commission held in 2012, Conservation Measure 10-10 (2012) establishing CCAMLR Compliance Evaluation Procedure was adopted. It entered fully into force in 2013. Its objectives are twofold. The first is to systematize and improve how relevantinformation is collected, which is necessary for SCIC to analyze the cases of non-compliance. The second is to identify such situations of non-compliance and facilitate, through an appropriate procedure and under objective parameters, the deliberations of SCIC and its recommendations to the Commission, which may include corrective actions targeted at a specific CCAMLR member.

The overall purpose and justification of the CEP is not to establish responsibilities or apply sanctions, although it is certainly something that will need to be done in certain cases, especially in the face of recidivism. The most important part of the CEP is its systemic virtue: a mechanism that allows the Commission to identify regulatory loopholes, problems that prevent one or more members from meeting their obligations, and difficulties in implementation or differences in interpretation of conservation measures. When SCIC spends more time the degree of responsibility of a particular member and less in providing tools so that the member in question improves its non-compliance condition, then the discussion is unlikely to be fruitful for the objectives of CCAMLR. In the same vein, it is essential that the SCIC prioritises the aspects it considers most relevant when evaluating compliance, otherwise the discussion runs the risk of becoming irrelevant. To determine priorities means to define those measures whose implementation is considered more important, and to do it depending on the number or the seriousness of the cases. These priorities can vary over time, which is perfectly legitimate. SCIC should consider and discuss such prioritisation in a timely manner.

The CEP is a complex process in the sense that it has several well-defined stages. After a few years of practical application, its dynamics have improved and the Commission has made progressive changes in the text of the relevant conservation measure (CM 10-10). To understand some of its difficulties, it is advisable to briefly explain the procedure, where each step plays a specific and justified role:

1. The Preliminary Report

The Secretariat prepares the preliminary report. This document contains all possible cases of non-compliance whose occurrence came to the attention of the Secretariat between August 1st and July 31st of the following year, for which it must consider the data from any relevant source. During the first years of implementation of the CEP, not all CCAMLR conservation measures were part of the process, which was understandable given the uncertainty as to the extension and complexity of the exercise. At present, breaches of any existing measure, as well as Part D of the International Scientific Observation System, must be included in the CEP.

Note that in this first step the Secretariat only informs the relevant member of its own incidents or possible violations, not those of other States[27]. This approach is appropriate because it allows ruling out factual errors before the incidents of non-compliance and their background are informed to all Commission members.

It is essential for the SCIC to have all the necessary information to allow its members, both intersessionally and at the annual meetings, to analyze each incident in its merit and to adopt recommendations. The Secretariat uses the means at its disposal to collect relevant information, including what the members themselves report. Pursuant to article XXIV, paragraph 2 (b) of the Convention, an implicit feature of the inspection and observation systems is the purpose of verifying compliance with CCAMLR conservation measures. The information that comes from both systems is vital to the success of the CEP and the deliberations of SCIC. They contribute to minimise situations where discrepancies attributed to different versions affect the assessment of non-compliance situations[28].

A relevant issue in this regard is to reinforce the work of the scientific observers. While the observer climbs aboard a ship for the purpose of collecting data, there is no reason to stop SCIC from considering the information provided by observers[29] and in fact this is done in practice[30]. In the same vein, the standard for refuting the observer should be especially high. It is also possible to think of other improvements that reinforce the work of inspectors and observers in order to obtain more and better information, which entails amendment of certain measures of CCAMLR. For example, the requirement to establish and operate video cameras on board while operating in the CCAMLR area should be explored, connected with the flag State and potentially with the Secretariat.

Another possible change that would reinforce the CEP procedure and help to prepare in advance the debates of the SCIC meetings is to support the intersessional involvement of the Chair of the SCIC. This would make it possible to understand in advance the sensitivities involved. For example, the Secretariat should immediately make the Chair aware of any relevant incident of non-compliance, so that the Chair can explore avenues of communication with the members' government agencies. This could include clarification of information in advance of the meeting and possible proposals of future actions by SCIC.

2. Disclaimers and self-qualification

The second step within the CEP is to give each member sufficient time to explain the possible situation of non-compliance, reject it or recognize it, and offer the means to endorse its position

regarding the possible qualification of the incident, including documental proof, photos, or other evidence. This self-qualification will determine the preliminary position of the respective member for the SCIC annual meeting, and predisposes other states to examine whether that qualification is correct or not[31].

The possible categories of compliance or non-compliance have not always been entirely successful in their application. The current version of Annex 10-10B reflects on the practical learning since 2013, where after five years (2013-2017) the text has improved on the basis of trial and error. Annex 10-10B includes the following compliance categories: minor non-compliant (Level 1); non-compliant (Level 2); seriously, frequently, or persistently non-compliant (Level 3). Three other qualifications are then included as well: additional information is needed; SCIC interpretation is required, or no compliance status assigned. All of these categories are given possible measures that SCIC should recommend to the Commission. In general, the text is appropriate and does not differ substantively from the practice of regional fisheries management organisations, where the logic of compliance assessment is exactly the same.

3. Summary report and discussion in SCIC

With the information provided by party States, the Secretariat must draw up a summary report, which contains explanations and disclaimers of CCAMLR members in relation to each of the possible incidents of non-compliance identified. It is on the basis of this summary report—available for the parties 42 days before the meeting—that SCIC must work during its annual session to discuss and adopt a provisional report; a document which in turn is to be considered by the Commission.

During its annual meeting, SCIC discusses on the basis of the summary report, with a view to adopt the provisional report. In general, the member whose possible breach is the subject of analysis presents facts that would contradict such a breach, or assuming the breach took place, indicates corrective actions or possible sanctions that already have taken place or the member intends to adopt. If the member accept the non-compliance situation SCIC is generally flexible in terms of corrective actions. If the member does not recognize the case as a situation of non-compliance the discussion expands to include aspects such as the available evidence, or possible interpretation of the measure in question.

An impartial observer is likely to experience some frustration by attending these SCIC meetings. It is increasingly common to witness extensive discussions on matters that are relatively simple to resolve, and listen to lengthy speeches of members seeking to justify breaches—total or partial—on the basis of dubious reasoning. In an organisation built upon consensus like CCAMLR, negotiation to address situations of non-compliance seems like an implicit risk—or a price—in exchange for maintaining the spirit of cooperation. Yet this is not sustainable over time: if compliance becomes a matter left to the discretion of member States, it no longer makes sense to take regulation seriously.

On top of this, it is not unusual to hear interventions from members who do not seem to understand the purpose of the CEP exercise. On the one hand, some prioritize the need to establish responsibilities and target those who present situations of non-compliance, even for minor infringements. On the

other hand, it is also worrying to witness others who endeavor to argue that they never do wrong or make mistakes, as if the whole issue is to avoid some sort of reputational stain. The truth is,in the logic of the CEP, it is less important the question of compliance itself than the reaction and measures adopted to deal with such a situation. As a result, a non-compliance status deserves a lower reproach than not taking appropriate measures to prevent similar situations from being repeated in the future. Of course, this is certainly different in situations of recidivism.

SCIC deliberates on the adoption of the provisional report, which must be adopted by consensus. The Commission then will discuss and adopt the final compliance report for the respective year.

4. Critical analysis: positive aspects

There have been several positive aspects of the CEP. The flow of information has substantially improved, and the systematized analysis facilitates the assessment of non-compliance cases. This legitimises the discussion and the adoption of corrective measures since members are continuously given the opportunity to submit and present its explanations and disclaimers.

There are three characteristics that have contributed to the positive evolution of the CEP process, despite its inherent complexities . It is then advisable to insist that they should be observed by SCIC on its deliberations:

(a)Analysis of available information and contrast with the text of current measures

The analysis and assessment of cases of non-compliance must be carried out on the basis of the text of the conservation measures, their interpretation according to the Convention and to the general rules of international law, and bearing in mind the facts and information available for each case. If SCIC concludes that the situation is not clear because the norm in question supports more than one interpretation, then it should be recommended as one of the pertinent changes to the Commission.

(b) Focus on a specific case for consideration along with the member as a whole

As a general rule, discussions should focus and be limited to each incident of non-compliance. Broader questions to CCAMLR members should in principle be avoided. This is why the current practice of presenting and addressing non-compliance cases following the measures breached instead of State by State—as it was done in some past instances—allows for the avoidance of such general questions. Certainly, if there are cases of recidivism or an excessive number of non-compliant situations in a specific season, it is a SCIC duty to discuss and propose corrective measures accordingly.

(c) Objective responsibility

A fundamental aspect is that SCIC understands that when evaluating cases of non-compliance, a strict rule of objective responsibility must be applied. This means that the violation of a rule or measure is established independently of subjective aspects such as fault by those who made or participated in the actions[32]. This does not exclude situations of force majeure, which in fact are in

some way considered in Annex 10-10/B of Measure 10-10 (2017).

5. Difficulties in the adoption of the provisional report

(a) The excessive extension of the CEP

Discussions within the framework of the CEP occupy more and more time on the SCIC agenda, and therefore of CCAMLR. There are actions that would allow the CEP's deliberations to be more efficient, some of which have already been suggested. One of them is to reinforce the work of the Chair of the SCIC between meetings, giving the possibility to explore consensus solutions in advance of the annual discussion, and to guide the interventions in this way. Improving the flow of information prior to the SCIC meeting in order to shorten the discussions during the meeting would also help. This point will be mentioned again in the conclusions.

(b) Allow time for appropriate advice from the Scientific Committee

Some of the cases of non-compliance require clarification and advice from the Scientific Committee. This is an issue that goes well beyond the exercise of the CEP, and affects the work of the SCIC and even the Commission. In general, the advice that the Scientific Committee provides to the Commission and other subsidiary bodies such as SCIC should not be generated in tandem with the meeting of the SCIC and only a few hours before the meeting of the Commission. In terms of compliance, this has generated problems.

For example, one of the difficult issues during the 2013 meeting was the analysis of the catch per unit of effort (CPUE) of three South Korean ships from the Korean company Insung, which seemed anomalous. When this issue arose in the SCIC debate, some members wanted to deal with the issue in terms of compliance, while others were unclear because the Scientific Committee was still reviewing the issue (the following year it was confirmed that it was a serious case of non-compliance). The discussion was long and complex, because the advice of the Scientific Committee was not yet closed and therefore the Chairman of the Scientific Committee, when speaking to the SCIC, could not provide all the answers[33]. This kind of situation could be solved in a way that seems radical, but that in the practice of most regional organisations with competences like CCAMLR is already common: the meeting of the Scientific Committee should take place months in advance of the SCIC and Commission meetings. This would allow for a report from the Scientific Committee that is well settled in advance of the SCIC and Commission meetings, facilitating the work of the latter[34].

(c) The abuse of consensus

One of the most insoluble difficulties in the dynamics of the CEP is the fact that the recommendations for cases of non-compliance—even in serious instances—must always be adopted by consensus, which allows the member in question to have the ability to block or veto any attempt to take corrective action that it may dislike[35]. This could be due to legitimate discrepancies, but the possibility that a member may block consensus to the end is devastating to the procedure itself. There are several examples of the above, but the one that seems to be the most dramatic occurred

in 2017, where for the first time consensus was not reached in the adoption of the compliance report in SCIC and in the Commission (both provisional report and final). Paragraph 3.25 of the Commission report notes that the Commission adopted a report on Compliance (Annex 8) which includes the 18 cases considered by SCIC but without having assigned a compliance category in the case of China relating to MC 10-04. This is a procedural obligation, certainly far from the most important of the measure in question[36]. However, the discussion of whether or not China had breached this obligation took up an important chunk of the SCIC's time, generated unnecessary tensions, and finally did not have a satisfactory outcome. It is not the intention of this paper to enter into the background analysis of the case in question, but this situation confirms the apprehensions that have been formulated in this work.

The generic question that arises is whether consensus is desirable all the time. In terms of compliance, decisions by consensus are not always possible or desirable, as the party concerned can block the decision that the organization intends to adopt. There are fairly clear experiences in multilateral fisheries agencies that suggest more efficient approaches, such as the possibility of voting when consensus is exhausted[37]. However, it is highly unlikely that this will happen in CCAMLR, both because such a change must be made by consensus—and not everyone will agree with it—as for some States it is essential to maintain consensus as a decision making rule throughout the entire Antarctic Treaty System[38].

The following question is then how is it possible to limit the negative effects that the veto to consensus carries in the work of the SCIC? Unfortunately there is not much that can be done. Traditional responses exist: more and better negotiation and persuasion. But there is also a limit to negotiation when it comes to compliance issues. That is why consensus is not an end in itself, because there is a point at which negotiating the category or degree of compliance simply means altering the facts under consideration. This has other negative consequences, including the perception of the organization's effectiveness as a whole. Of course, this is not a desirable scenario and should be maintained as something strictly exceptional. The point here is that the lack of consensus seems better than altering the nature of the facts at the price of reaching an agreement. What remains for those members who maintain their discrepancies is simply to leave in writing in meeting report their reasons and positions. The report should account for the majority and minority positions, with express attribution to each member who so desires. This is close to what happens in practice.

Conclusions: Identifying improvements

The present paper has exposed several problems that affect the evaluation of compliance in CCAMLR from both procedural and substantive aspects, as well as proposed possible improvements. By way of conclusion, the following points summarise these proposals:

1. Access to information and efficiency in the procedure

CCAMLR members who face non-compliance situations should take a more active role in making available to the SCIC all possible information, including relevant questions and questioning, prior to

the annual meeting. In other words, after the summary report concerned CCAMLR members should concentrate on having everything necessary to facilitate the discussion under the CEP, avoiding gaps during the meeting and thus contributing to shorten the discussions. This exchange of information can be done both directly and through the Secretariat. In this, the Chair of the SCIC can also play a role.

Also, the access to the summary report should not be limited to the members of the Commission only. At this point it is not inconvenient that this information, although still preliminary, should be made available to non-governmental and fishing organizations that participate annually in the CCAMLR meeting, and in general to all those who have observer status. This would be an incentive to provide useful information if that is relevant or possible and to improve the transparency and legitimacy of the procedure as a whole.

2. Optimise advice from the Scientific Committee on compliance issues

The problems that may arise from holding the Scientific Committee meeting on the same date as the SCIC have been exposed. This paper postulates that the meeting of the Scientific Committee should be carried out a few months in advance of the SCIC and Commission meetings, so that the latter have all the relevant scientific information (even beyond compliance and implementation) in anticipation of their sessions. This would be important in facilitating deliberations in both the SCIC and the Commission. Moreover, itis usually common practice in several regional fisheries bodies and other multilateral environmental regimes.

3. Role of the SCIC Chair

It is desirable that the Chair of the SCIC should play a more active intersessional role, which can help to prepare the most complex cases of the annual meeting jointly with the members of the Commission that face non-compliance issues. By doing this the Chair may propose specific and bespoke solutions to the incident, and thus to optimise the use of time at the meetings. The same is perfectly applicable to the Chair of the Commission once the report has been adopted and the differences persist.

4. Prioritise

SCIC should prioritise its two main functions, as explained in this paper: to promote and evaluate compliance and implementation, and to improve existing measures. The agenda should be prepared with both tasks outlined clearly. In the same vein, prioritization within the CEP is equally relevant. Delegations at SCIC should be clear about the priority objectives and the importance of the CEP. Intersessional work is key, but the organisation across e-groups only seems insufficient. That is why the intersessional role of the Chairs of both the SCIC and the Commission can help in this regard.

5. Do not lose sight of the rules that guide the compliance evaluation

This paper has also proposed the following rules as a starting point for the consideration and analysis

of non-compliance cases in the CEP, which are confirmed by the practice of CCAMLR members: analysis of available information and contrast that information with the text of the actual measures; focus on the incident and not on the overallreview of the member as a whole, unless facts merit that; and draw conclusions on an objective responsibility approach leaving aside aspects such as fault.

6. The importance of consensus, but not as an end in and of itself

As a general rule of regulation, consensus is desirable and is one of the structural pillars of CCAMLR and the Antarctic Treaty System. However, this rule does not always work well in compliance and implementation. Although it would be desirable to have alternatives to the consensus in addressing situations of non-compliance—as in other organizations with CCAMLR-like competencies—, changes of this nature are highly unlikely. It seems realistic to assume that under the current scenario, for SCIC trying the best possible and persuasive approach is what should be done.. That said, consensus cannot be an end in and of itself. It is understandable that there are sometimes insurmountable differences in assessing and appreciating non-compliance cases, and there is not much left to do when despite all efforts the consensus is not achieved. CCAMLR members should not fail to express and record their positions and objections in writing for the meeting report. This points to a precedent that can be used in the future to ease positions in similar cases.

The CEP plays a key role in evaluating and promoting compliance with CCAMLR rules and standards. Its application has exhibited accomplishments and problems. CCAMLR has the tools, the experience, and the capacity to overcome the current difficulties and continue to refine this mechanism, in the future, for the better performance of CCAMLR itself.

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1- 1329 UNTS 47. Adopted on May 20, 1980, entered into force on April 7, 1982.

2- CCAMLR utilizes the word "execution" to refer to implementation. This paper uses the word "implementation" to refer to the same phrase.

3- Article XX number 1: "Each Contracting Party shall take appropriate measures, within its competence, to ensure compliance with the provisions of this Convention and the conservation measures adopted by the Commission which are binding in accordance with Article IX of this Convention." Paragraph 2 adds that "each contracting party shall transmit to the Commission information on the measures taken in accordance with paragraph 1 above, including the imposition of sanctions for any violation of this Convention."

4- Although this article focuses on the members of the Commission, it should be remembered that Article X states that the Commission will call attention to any non-party State whose nationals and vessels affect the implementation of the objectives of the Convention. This is added to the provisions of Article XXII, in the sense that the Contracting Parties shall endeavor to prevent any activity contrary to the objectives

of the Convention. The latter rule does not distinguish between party States and non-party States, so both provisions are an appropriate starting point to substantiate the actions CCAMLR adopts against national and non-party States that undermine the objectives of the Convention.

5- Internal implementation acts are those necessary to comply with an international obligation. In some cases, it is sufficient to abstain in order to comply, such as when the vessels of a contracting party abstain from fishing using gillnets or when they do not use bottom trawling in areas where such equipment is prohibited. It is likely that in order to achieve such abstention, it's necessary to carry out certain acts at the national level by the flag State, such as the adoption of internal legislation, regulatory application, monitoring and surveillance, and changes in registry or of licenses, to name a few. Implementation is also necessary in other cases, especially when the execution of positive acts is required. Typical examples are the installation of vessel monitoring system (VMS) and the internal organisation of the Catch Documentation Scheme for toothfish (Dissostichus).

6- Standing Committee for Implementation and Compliance. The acronym SCIC is widely used in practice by CCAMLR, by both English and non-English speakers.

7- Article 33 of the Charter of the United Nations, those which assume the existence of a dispute: negotiation, investigation, mediation, conciliation, arbitration, judicial settlement, recourse to regional bodies or agreements or other peaceful means of their choice.

8- In the case of regional fishery bodies this is also common. For example, the Western and Central Pacific Fisheries Commission (WCPFC) adopted its compliance assessment procedure through measure 2010-03, and the Regional South Pacific Fisheries Management Organization (SPRFMO) regulates a similar process under its measure 10-2018. In multilateral environmental regimes this type of mechanism has been previously included. Although with very different levels of success, see for example the role of the Implementation Committee under the Montréal Protocol on Substances that Deplete the Ozone Layer of 1987 (decisions II/5 and IV/5 1990 and 1992, respectively), and the procedure for non-compliance under the Cartagena Protocol on Biosafety of 2000, adopted in 2004..

9- See for example: Jan Klabbers' "Compliance Procedures" in Daniel Bodansky, Jutt aBrunnée and Ellen Hey The Oxford Handbook of International Environmental Law (OUP, New York, 2008), Karen N. Scott, 'Non-Compliance Procedures and Dispute Resolution Mechanisms Under International Environmental Agreements' in D. French, M. Saul, and N.D. White (Eds) International Law and Dispute Settlement: New Problems and Techniques (Hart Publishing, 2010), Anna Huggins Multilateral Agreements and Compliance: The Benefits of Administrative Procedures (Taylor & Francis, 2018).

10- James Crawford's State Responsibility: The General Part (CUP, Cambridge, 2013), page 52. Article 12 of the draft article on State Responsibility for Internationally Wrongful Acts (United Nations General Assembly resolution 59/35 on December 2, 2001) states that if "There is a breach of an international obligation by a State when an act of that State is not in conformity with what is required of it by that obligation, regardless of its origin or character."

11- Jutta Brunée "Enforcement Mechanism in International Law and International Environmental Law" in U. Beyerlin, K. Stoll, and R. Wolfrum (Eds) Ensuring Compliance with Multilateral Environmental Agreements: A Dialogue Between Practitioners and Academia (Martinus Nijhoff Publishers, Leiden, 2006), pages 12-13.

12- Ibid.

13- Such as arbitration and judicial settlement. In any case, the possibility of resorting to these mechanisms is limited under the Convention, because it depends on the consent of all parties involved in the dispute, as provided for in article XXV. It is true that there are cases where disputes associated with marine natural

resources have reached international tribunals, but they are the exception and not the rule. Perhaps the most spectacular is the recent Whaling in the Antarctic Australia vs. Japan seen before the International Court of Justice (judgment on the merits in 2014).

14- Article XXI, paragraph 1 of the Convention.

15- Article X of the Convention states that "the Commission shall draw the attention of all Contracting Parties to any activity which, in the opinion of the Commission, affects the implementation by a Contracting Party of the objective of this Convention or the compliance by that Contracting Party with its obligations under this Convention."

16- Available at www.ccamlr.org/en/document/publications/rules-procedure-commission

17- It is interesting to recall that the SCOI was created with the main function of being the system for observations and inspection.

18- A graphic example that demonstrates this happens in practice. During the SCIC meeting of 2013, cases of non-compliance with paragraph 3 (xi) of the then Conservation Measure 10-02 (2011) were discussed. Paragraph 3 indicates that the flag State must inform the Secretariat of the licenses it has been granted for the CCAMLR area. Among such information should be if applicable, details of the requirements to prevent undue manipulation of the VMS on board, in accordance with the conservation measure 10-04. At that meeting in 2013, the interim report found that 19 ships of seven members of the Commission failed to comply with this rule. Since then, this high number of non-compliance is rare, and the SCIC agreed that this was caused by the ambiguity of the norm, and recommended that the words "if appropriate" be eliminated, so as to clarify in the future that compliance in the delivery of the aforementioned information is not option for the flag State. Measure 10-02 was amended in accordance with that recommendation.

19- Concerning the nature of the violation, the case of the Chilean ship Antarctic Bay was a good example. The actions of this vessel on April 15, 2014 in contravention of the obligation to cast only at night, as required by MC 25-02 (2012), resulted in the death of 74 petrels (paragraph 13 of the SCIC Report, 2014). SCIC highlighted the extent of the damage caused by such an incident, which was recognized by Chile.

20- Article IV of the Antarctic Treaty of 1959. In the absence of agreement on the existence of coastal States in Antarctica, the freezing of claims of sovereignty under the Antarctic Treaty implies that in practice there are no coastal States, and the waters of the Convention are regarded as high seas.

21- See Conservation Measure 10-08 (2017) adopted by CCAMLR.

22- See articles 91, 93, and 94 of the United Nations Convention on the Law of the Sea (UNCLOS), and in particular the need for genuine linkage and ability to exercise control over ships flying its flag. There is no doubt about the application of UNCLOS rules and the right to the sea in the Convention area, in the context mentioned above in footnote 18. For example: Arthur Watts' International Law and the Antarctic Treaty System (The Burlington Press, Cambridge, 1992), page 163. Also see Christopher C. Joyner's "The Antarctic Treaty System and the Law of the Sea—Competing Regimes in the Southern Ocean?" (1995) 10 IJMCL 301.

23- Paragraph 131 of the SCIC Report (2013), approved by the Commission. Available at: www.ccamlr.org/es/ccamlr-xxxii

24- Paragraph 190, SCIC Report, Annex VI of the report of the Commission in 2013. Available at: www.ccamlr.org/es/ccamlr-xxxii, page 172.

25- Regulated by Conservation Measures 10-06 (2016) and 10-07 (2016) respectively.

26- It is what happened conspicuously in 2011 with the South Korean ship, Insung No. 7, which after being placed on the SCIC list of UII ships, Korea blocked the consensus in the Commission. Some members

stressed the need to rush the adoption of a compliance assessment procedure. See for example paragraph 9.16 of the CCAMLR Commission Report from 2011.

27- The Secretariat circulates to each Contracting Party its respective preliminary report no later than 75 days before the annual meeting of the Commission, paragraph 1 paragraph (ii) of the Measure 10-10 (2017).

28- While it is not the general rule, these situations can occur. An example was the case of the Norwegian ship Juvel, inspected by Chilean authorities in the port of Punta Arenas in March 2014. At the SCIC meeting in 2014, Chilean authorities noted that the ship did not comply with the sealing of the VMS antenna as required by Conservation Measure 10-04. Norway noted that "it had received confirmation from the ship that the original system was intact," and that it was a VHF antenna (paragraphs 35 and 36, and respective paragraphs of the compliance report). The problem was finally addressed as a matter of interpretation of the measure itself.

29- Mansi points out that while observers are not inspectors, they contribute to the work that inspectors, they contribute to the work that inspectors develop on board. Ariel R. Mansi's "The System of Inspection of the Commission for the Conservation of Antarctic Marine Living Resources," in Lilian del Castillo (ed.) Law of the Sea, From Grotius to the International Tribunal for the Law of the Sea: Liber Amicorum Judge Hugo Caminos (Brill, Leiden, 2015), page 224.

30- Annex I to the CCAMLR Observation System does not prohibit it either. On the contrary, the role of the observer is to observe or report on the operation of fishing vessels in the Convention area bearing in mind the objectives and principles of the Convention.

31- Each Contracting Party shall return its preliminary report to the Secretariat with any additional information of interest and the qualification of compliance suggested for each case of non-compliance no later than 45 days before the annual meeting of the Commission, paragraph 1 (iv) Measure 10-10 (2017).

32- See paragraph 70 of the SCIC report from 2015. Available at: www.ccamlr.org/es/ccamlr-xxxiv

33- See paragraphs 198 and 212 of the SCIC Report from the 2013 meeting.

34- The second evaluation of CCAMLR's operations contemplate various observations and proposals for changes in regard to the function of the Commission, but did not include proposals for changes in the current Scientific Committee meeting dates. Available at: www.ccamlr.org/es/system/files/s-cc-xxxvi-01-w-cp.pdf

35- In general, the problems and criticisms arising from the consensus rule are not new in CCAMLR. See for example Donald Rothwell's The Polar Regions and the Development of International Law (CUP, New York, 1996), pages 131 and 132. Some emphasize that for a while it could work smoothly, especially during the last decade of the last century. See Erik J. Molenaar's "CCAMLR and Southern Ocean Fisheries" (2001) 16 IJMCL 465, page 470.

36- This case refers to paragraph 6 of MC 10-04 (2015) on VMS, which states that each flag State shall notify the Secretariat of the name, address, e-mail address, telephone, and fax numbers of the relevant managers of its Fisheries Monitoring Center, and that each flag State shall, without delay, notify the Secretariat of any change in those details.

37- Article 16 of the Convention establishing the South Pacific Regional Fisheries Management Organization (SPRFMO) makes it possible to resort to the vote exhausted by consensus, and to make decisions for three-quarters of the members who vote effectively.

38- Especially by the complaining members for sovereignty in Antarctica. Bruce W. Davis's "The Legitimacy of CCAMLR" in Olav Schram Srokke and Davor Vidas Governing the Antarctic (CUP, Cambridge, 1996), page 237.

-Jutta Brunnée. "Enforcement Mechanism in International Law and International Environmental Law" in U. Beyerlin, K. Stoll y R. Wolfrum (Ed) Ensuring Compliance with Multilateral Environmental Agreements: A Dialogue between Practitioners and Academia (Martinus Nijhoff Publishers, Leiden, 2006).
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Reflections from a Previous Chair of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) Scientific Committee

Christopher D. Jones

ABSTRACT

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) requires advice based on the best science available to ensure that the objectives of the Articles of the Convention are achieved. Scientists primarily develop this advice, which is often simply endorsed by the Scientific Committee, though subsidiary bodies that meet during the course of the intersessional period. Here, I reflect on my experience as previous Chair of the Scientific Committee to identify some challenges and potential solutions to increase and broaden scientific capacity and help ensure that the best scientific advice is developed.

Key Words

Scientific advice, CCAMLR, subsidiary bodies, capacity building, observers

Reflections from a Previous Chair of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) Scientific Committee

Introduction

It has been a great honor for me to be able to work in the Antarctic marine environment collecting and analyzing data, developing scientific advice, and providing this advice to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) for just over decades, primarily as part of CCAMLR's Scientific Committee consultative body. My tenure has included convening a number of Working Groups, Subgroups, focus topics, and workshops, hereafter referred to as "subsidiary bodies" of the Scientific Committee, as well as serving as its Chair for four years (2011-2015), in addition to its first (and only) special intersessional meeting. These experiences, while not always smooth, have elucidated both the complexity and richness of the CCAMLR management framework. I have developed a deep respect and appreciation of this system. Although the work of the Scientific Committee has come with major challenges, it has been largely successful at achieving the primary objective of providing scientific advice on the conservation of Antarctic living marine resources, and allowed the Commission to refine Conservation Measures as the new scientific advice becomes available.

Providing advice to the Commission based on the best science available is enshrined in the spirit and letter of the Articles of the CAMLR Convention. The advice is based in large part on careful consideration and deliberation of Members' submissions that are tabled at the Scientific Committee and its subsidiary bodies. Although all content of these submissions should be strictly unbiased and evidence based, there are instances where Members' specific national values can sometimes be implicitly or explicitly reflected in their contributions, and these can be influenced by broader geopolitical considerations. These values can range from submissions that contribute the best available science with no preconceptions as to how this may impact Commission decisions, to those that endeavor to advance (or delay) protection initiatives and minimize human impacts to the Antarctic ecosystem, to those that promote harvesting by a specific Member as a means of both collecting data and developing advice. There can be strong interactions between Members' scientific contributions, and they can include a variety of other topics that reflect their specific interests.

Regardless of how specific values are reflected in submissions to the Scientific Committee, how that information is considered and taken forward as potential advice to the Commission relies wholly on the scientists participating in the discussions. Thus, the need for robust, broad engagement by scientists is essential. Beyond these scientists working toward providing consensus advice, how uncertainty in this advice is communicated is critical for decision makers. Here, I reflect on my experience as previous Chair of the Scientific Committee, as well as convener of several meetings of subsidiary bodies, to identify challenges and recommend potential solutions to increase and broaden scientific capacity and help ensure that the best scientific advice is developed.

Challenges

One of the most challenging aspects of Chairing the Scientific Committee is detecting the sometimes-elusive areas of commonality between the values and objectives of Members and the science they contribute, and moving discussions toward these areas to generate scientific advice that will assist

the Commission in achieving their objectives. Because this system of providing scientific advice to the Commission is through strict consensus, this can often lead to complex and nuanced advice that requires effective communicating to managers and stakeholders.

Uncertainty when interpreting scientific conclusions tends to be unavoidable in most situations. How that uncertainty then passes through the filter of each Members' values, and what elements that Member advocates for scientific advice, is an important process to recognize. If not fully considered, this may lead to biased advice and less than optimal decision-making. According to the precautionary principle, the greater the uncertainty, the more precaution one should apply when developing, communicating, and implementing scientific advice. Nevertheless, there are times when Members' values are reflected in interventions that do just the opposite, which can potentially result in the Commission not achieving its objectives. How tension between uncertainty and precaution is resolved and implemented in scientific advice requires careful consideration.

Probably the single most pressing issue that I have observed is a lack of some scientists to engage in discussions that are not strictly beneficial or advantageous to that Members' interests or values at the Scientific Committee subsidiary body meetings. It is at the meetings of the subsidiary bodies where the majority of scientific advice is considered, developed and presented for consideration by the Scientific Committee. These meetings are also where the need for direct engagement by scientists is perhaps most urgent. However, it is often at these meetings where many scientific delegations engage in only a single specific issue, leaving the majority of items considered holistically by only a handful of participants. Such scenarios severely reduce capacity of a scientific forum, and can be attributed to a number of factors.

One of the most prominent factors that reduces capacity is the language barrier during deliberations. All meetings of CCAMLR Scientific Committee subsidiary bodies are conducted in English only, whereas formal meetings are conducted (through interpretation) in English, Spanish, French, and Russian. With an ever growing number of Members and Contracting Parties to CCAMLR from countries where these languages are not widely spoken, the result is reducing engagement in scientific deliberation.

Other reasons for lack of engagement and capacity reduction can include lack of proper preparation or general interest, cultural predisposition, very small Member delegation sizes, and potential guidance to scientists from Member countries. The lack of broad participation is unfortunate, since engagement from all scientists (as opposed to a small handful) often leads to considerably more productive meetings, as each scientist has the potential to contribute something that will improve the overall success of the meeting and its outcomes.

Building Capacity

Some reasons that hinder broader participation and capacity during scientific meetings cannot be mitigated. However, language barriers may soon become a thing of the past, as emerging language-translation technologies that interpret in real time are becoming a reality (ex. Google's Pixel Buds).

There are also promising strategies that can increase small or new delegation engagement, such as scientists from Member countries volunteering to serve as mentors, or Secretariat staff working directly with new scientists to assist them with background information in relation to issues that they may unfamiliar with or require some special assistance in certain details.

Another potential mechanism to increase capacity lies in easing the restrictive policies that do not allow sanctioned Observers to the Scientific Committee to attend intersessional meetings of subsidiary bodies, particularly Working Groups. The establishment and role of subsidiarity bodies of the CCAMLR Scientific Committee are set out in the Scientific Committee Rules of Procedure. Among other things, it states that the Scientific Committee determines their composition, and where applicable, subsidiary bodies shall operate on the basis of the Rules of Procedure of the Committee. Part of the rules explicitly deal with Observers, which sets out the conditions for the invitation and conduct of Scientific Committee Observers. In all cases, Observers invited under this rule shall have appropriate scientific qualifications. However, there are elements within the Rules of Procedure with respect to attendance of Observers at subsidiary bodies of the Scientific Committee that have not been reconciled, particularly in relation to participation in Working Groups, Subgroups, focus topics, and workshops of the Scientific Committee.

Sanctioned Observers are those organizations that have been officially recognized and invited to participate in Scientific Committee meetings. Sanctioned Observers currently include intergovernmental and non-governmental organizations such as ACAP, ARK, ASOC, CCSBT, CEP, COLTO, FAO, IUCN, IWC, OCEANITES, SEAFO and SCAR. Whilst they cannot table papers themselves (although they can table background papers), and cannot block consensus, they are often comprised of highly skilled scientists. Observers may also include scientists from acceding states who are not full Members. All of these Observers are traditionally encouraged to participate in the meeting of the Scientific Committee to the extent possible. However, their participation at Working Group meetings is currently not permitted.

At present, there are uncertainties with respect to the process of selection, invitation, participation and management of scientists that are not associated with Member delegations of the CCAMLR Scientific Committee or its subsidiary bodies. Potential scientists could include both 1) independent invited experts and 2) representatives of sanctioned Observers. Each type of potential scientist serves a different role. Invited experts have attended subsidiary bodies on several occasions on an ad hoc basis, though the specific mechanisms surrounding their selection and participation are not well established. In the recent years, there have been calls to establish a procedure by which Observers can attend subsidiary bodies, as well as instances in the recent past where Observers have requested attendance to attend SC subsidiary body meetings, yet formal mechanisms to engage them have not been established.

The rationale for not endorsing appropriately qualified scientists from sanctioned Observers to meetings of subsidiary bodies has largely been that if a Member wants to include a scientist on a delegation as an invited expert, they are free to do so. The potential role of invited experts as part of a Member delegation, and sanctioned Observers attending Scientific Committee subsidiary bodies is different though, with the former specifically incorporating outside expertise and insights

to contribute to the meetings while not representing Observers, and the latter serving to explore issues of relevance and interaction between CCAMLR and the organization they represent. Although both have the potential to build substantial capacity at SC subsidiary bodies, these differences are significant, and thus the two require different approaches with respect to aspects of their engagement. Further, not allowing expertise from sanctioned Observers overlooks the fact that many Members require their scientists to present viewpoints that are strictly consistent with the larger policies of the Member country. Or, some Members have national policies that do not permit non-governmental scientists from joining their delegation. Because science is dynamic and evolving, and encourages alternative viewpoints and hypothesis to be included in considerations and debate, this eliminates a vast potential source of knowledge, experience, and other insights that could be valuable for developing the best scientific advice. Another important benefit of allowing sanctioned observers from all Member countries would be increasing transparency in relation to the development of scientific advice by Members, with other contracting parties and stakeholders. The mechanisms to facilitate participation and maximize engagement for experts and Observers at subsidiary bodies in relation to selection and invitation, as well as participation and management by the Observers would still need to be developed and endorsed.

There is a suite of potential benefits in exploring mechanisms to increase engagement and capacity at the Scientific Committee and its subsidiary bodies. Overcoming language barriers through technology, mentoring, and permitting qualified scientists from sanctioned Scientific Committee Observers to attend and participate in meetings of subsidiary bodies are all promising, and could build capacity in CCAMLR at little to no extra cost to Members. Allowing for direct interaction between Member scientists and other scientists who undertake Southern Ocean related research, allowing for broader input when generating scientific advice, and increasing transparency would benefit the Scientific Committee and further ensure that the Commission would have the best scientific advice to meet their objectives.

Disclaimer

The scientific results and conclusions, as well as any views or opinions expressed herein, are those of the author and do not necessarily reflect the views of NOAA or the Department of Commerce.

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The CCAMLR journey through the eyes of ECO

Lyn Goldsworthy

ABSTRACT

The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), adopted in 1980, is often presented as a standard for responsible and precautionary fisheries management. The precautionary principle forms the basis of the objectives for the Convention. Almost 40 years on it is time to pose the question: has the Convention been successful in achieving its objective of conserving Antarctic marine living resources? And has the precautionary principle been applied? This paper reviews the efforts of CCAMLR in implementing its objectives through the eyes of conservationists. It concludes that while CCAMLR has made some significant advances, it has struggled at every step, and currently faces strengthening pressure from some of its Members to abandon both its conservation-based objective and the precautionary principle altogether for a more 'evidence-based' fisheries management approach.

Key Words

precautionary principle, ecosystem approach, conservation, fisheries management

The CCAMLR journey through the eyes of ECO[1]

The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), adopted in 1980, is often presented as a standard for responsible and precautionary fisheries management. The precautionary principle forms the basis of the objectives for the Convention. This principle was enshrined in international law through Principle 15 of the Rio Declaration[2] in 1992, which states 'In order to protect the environment ... where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.'

Constable et al (2000) reflects that the intention of CCAMLR's Objective is to embed an ecosystem-based fisheries management approach into all decisions made under the Convention.

Almost 40 years on it is time to pose the question: has the Convention been successful in achieving its objective of conserving Antarctic marine living resources? And has the precautionary principle been applied? Are management measures being made when there is insufficient information to prove threat? In reviewing CCAMLR Reports over the period of its existence, CCAMLR has attempted to frame its decisions around its central objective in some areas and has also made significant progress in some other areas. However, it has noticeably also found this task extremely challenging. The process has been not so much 'continuous and step-wise' but through a series of lurches associated with initial lengthy periods of strong resistance to action. In 2018, it seems that CCAMLR is at yet another challenge-point – perhaps a tipping point for the ongoing viability of the Convention – where there is strengthening pressure from some Members to abandon the precautionary principle altogether for a more 'evidence-based' management approach.

This paper reviews the efforts of CCAMLR in implementing its objectives through the eyes of ECO editions published by the Antarctic and Southern Ocean Coalition (ASOC) at many CCAMLR meetings between 1982 and 2017. ASOC represents the citizen-based conservation view at CCAMLR meetings and brings together over 100 conservation organisations from 30 countries who share the objective of maintaining the Antarctic continent and the surrounding Southern Ocean for their global conservation, wilderness and science values. ASOC has been present from the very beginning, at the actual negotiations for the Convention, where, while not permitted to be in the negotiations, it lobbied from the margins for conservation of the Southern Ocean to form the basis of the agreement.

The initial years: bye bye Notothenia rossii

The first meeting of the Commission for the Convention was held in May 1982, in Hobart, Australia. Sixteen nations and four international organisations were present[3]. Article IX of the Convention articulated the Commission's function as 'to give effect to the objective and principles set out in Article II of the Convention', with the assistance of a Scientific Committee to provide scientific advice based on the 'collection, study and exchange of information with respect to the marine living resources to which this Convention applies' and at the Commission's direction.

As one might expect, establishing the financial and administrative framework and scientific infrastructure to support the Convention were early priorities. However, the Commission seemed uninterested or unable to tackle the growing depletion of stocks inherited from the unregulated fishing prior to the establishment of the Convention. The frustration felt by conservationists at this lack of engagement was reflected in the ECO papers distributed at each meeting: 'Hobart nothing more than a circus' (ECO 1982); 'Credibility Crisis: CCAMLR's Challenge' (ECO 1984); 'Antarctic Fisheries: Collapse is Complete'(ECO 1985); 'The Great Crash' (ECO 1987).

From the outset it was obvious that some Members considered the precautionary principle to be an irrelevance to their fundamental right to fish and these Members had no qualms in utilising the consensus decision-making rule to achieve their national goals. Indeed, the first meeting of the Commission of CCAMLR took a full week to reach agreement on its agenda.

This approach carried through to the Scientific Committee, where some Members demanded that only consensus recommendations could be presented to the Commission, rather than the more usual approach of providing a range of views, thus leaving the political decisions to the Commission. Unfortunately, the consensus advice approach became customary practice for the Scientific Committee, and while dissenting views are now presented to the Commission, some Members remain committed to the consideration of consensus scientific advice only.

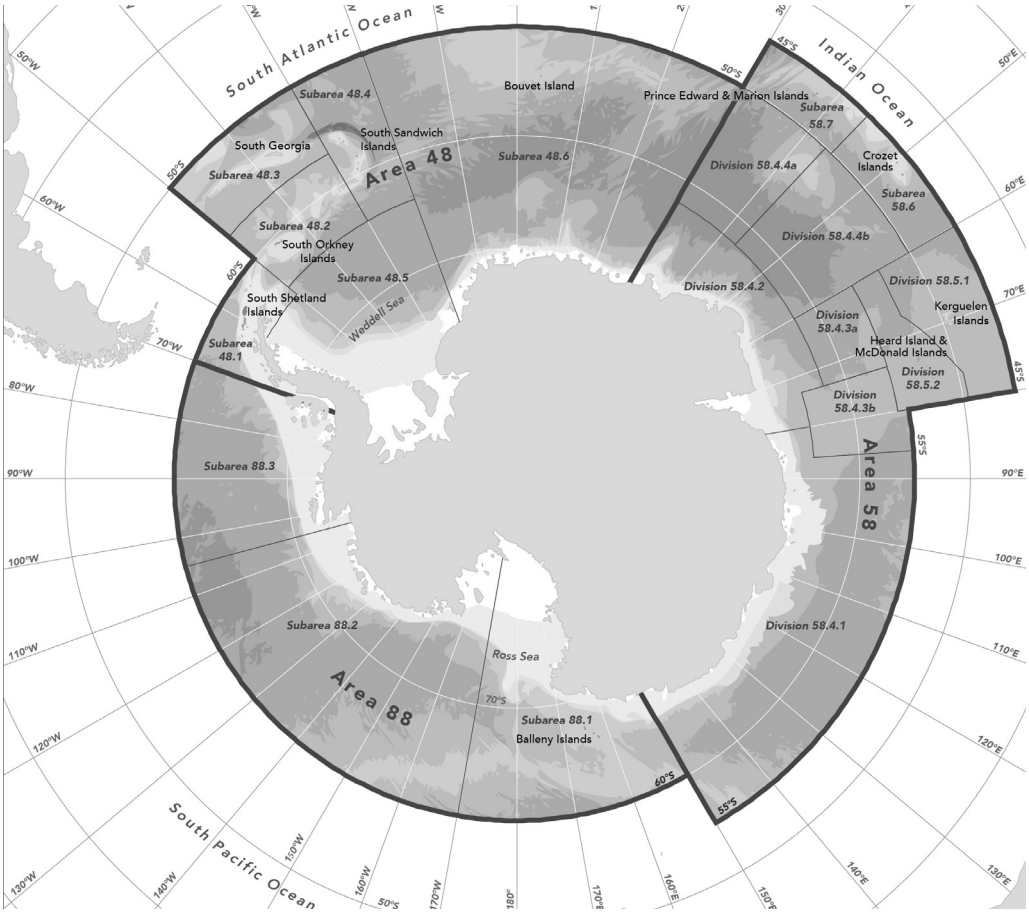
A primary reason for the development of CCAMLR was to address the growing interest in the Southern Ocean toothfish fishery, and specifically to generate more orderly management of the several severely depleted toothfish stocks around the Antarctic Peninsula and South Georgia (see Map 1). While many delegates in these early years accepted that some species in some areas might already be over-exploited, and that the underlying premise of the Convention required CCAMLR to operate on the best data available, the Commission found itself unable to act in the absence of consensus scientific advice. Development of such advice was also hampered by the significant differences of view in the way data should beanalysed and collected, including cost issues.

In the meantime, the finfish stocks continued to decline.

In 1986, the ECO headline 'Bye Bye N. rossii' and accompanying article succinctly captured the conservationist view:

It is becoming increasingly evident from the reports of previous Scientific Committee meetings that several stocks of finfish are seriously depleted. Last year's analysis showed that the stocks of Notothenia rossii (Marbled Rockcod) around South Georgia have totally collapsed due to overfishing.

Furthermore, previously expressed concerns about the depleted status of ALL finfish stocks in the South Georgia area and in the rest of the South Atlantic sector of the Convention area, are now echoed by the majority of the Scientific Committee. Such dramatic over-exploitation of finfish demonstrates the immediate need for a management strategy that will ensure the full recovery of depleted finfish stocks and prevent future depletions.



Map 1. *Map of the CAMLR Convention area (updated October 2017), www.ccamlr.org/node/86816)*

Scientists agreed. Even as they warned that total biomass estimates for N. rossii were just 5 per cent of the amount caught in 1969, the first year of commercial fishing, the Commission struggled to implement the precautionary principle, and some Members acted as if the party would go on forever. For example, in 1987 the Soviet Union dramatically increased its fishing effort in the South Georgia area during the early part of the season, sending more than 20 vessels instead of its usual five or six.

Progress was further hindered by the lack of agreement in the Scientific Committee around the necessary spatial and temporal scales upon which catch and effort data for commercial operations could be collected. Some Members not wanting controls argued that there was insufficient proof upon which to provide strong scientific advice on fish stocks, refused to agree to common standards for the collection of data, and then when the data did become available

contested the validity of the data.

In 1988 ECO applauded both the Scientific Committee and the Commission for its work, noting the slow but positive progress toward the implementation of Article II, availability of data, the closure of the mackerel icefish (Champsocephalus gunnari) fishery, acceptance of the concepts of Total Allowable Catch (TAC) and closed seasons/areas, and positive steps toward the development of a comprehensive system of inspection and observation. Sites were also set up under the CCAMLR Ecosystem Monitoring Program (CEMP) to detect and record changes in the marine ecosystem in response to fishing activity, and ASOC was invited to attend the Commission plenary sessions as an Observer.

Unfortunately the hope faded the following year. ECO 3 (ECO 1989) in 1989 reads:

ECO wishes to congratulate the Commission for beginning to commence thinking about considering the possibility of perhaps drawing up some comprehensive conservation measures to protect the fish-stocks – which have already gone....

For eight meetings, ECO has watched Commission Members come closer and closer to grasping the nettle – in light of an absence of data, coming to terms with the need to take a precautionary approach to the harvesting of finfish species, such that some might actually hang around to be available to be caught in the next year! ECO is amazed at the number of ways an 'almost-decision' can be made.

And the finfish stocks disappeared.

While some Members excused the lack of progress on finfish measures by arguing that effective management for krill fishing should be their focus, there was little progress there also. Krill is the central species in the Southern Ocean's short marine ecosystem; significant changes in krill available thus directly impact many species, including whales, seals, penguins, albatrosses, petrels, squid and, indirectly, fish. Yet, as scientists admitted significant gaps in their knowledge of krill distribution and the biology of krill, and the Commission admitted its inability to determine the effect of fishing activity on krill stocks and dependent species, the Soviet Union and Japan divulged that they deliberately targeted gravid (reproductive-age) females, and several nations indicated their intention to significantly expand their krill operations. These nations argued that precautionary measures were unnecessary given that the lack of market and problems with processing would prevent any significant increase in krill fishing in the near future.

During these years, conservationists argued for the application of the precautionary principle to the krill fishery by limiting fishing to existing areasof fishing – around the Antarctic Peninsula, South Orkney Islands, South Georgia and Prydz Bay –until the Commission was able to agree on management controls. They also suggested other concrete measures, including rotation of fishing areas to protect breeding zones, a ban on targeting gravid females, and avoidance of fishing in feeding grounds for predator colonies and rookeries.

No progress was possible on a precautionary krill approach until the Soviet Union, and its highly subsidised Southern Ocean fishery, collapsed in the late 1980s.

It must be acknowledged that during those early years some Members did attempt to progress measures that would assist in the implementation of the objectives of the Convention. For example, in 1984 the United States submitted a proposal to assess and develop measures to avoid the incidental mortality of Antarctic marine living resources. Occurrences of seabird and animal entanglement in lost or discarded fishing gear and deaths associated with some fishing operations were being reported in increasing numbers in other regions. While the Commission didn't think this was a problem for the CCAMLR Area it did request that seabirds, marine mammals and non-target species taken incidentally during fishery operations be reported. By 1987, a dramatic increase in fishing operations in the Southern Ocean had seen a corresponding rise in incidental mortality. Again, there was no substantive mitigation progress for several years.

The United Kingdom initiated a discussion on a system of inspection to ensure compliance, which eventually bore fruit several years later.

Discussions were also begun to consider developing a conservation strategy 'to carry forward the development of possible conservation approaches for achieving the objectives of the Convention, as set out in Article II, by the application of the conservation measures specified in Article IX' (CCAMLR 1988). This generated some hopeful discussions around the need for consideration of alternative scientific approaches to fisheries in the absence of full information. A common understanding of 'rational use' was also discussed, and general agreement reached that resource harvesting should be sustainable, that harvesting on a sustainable basis meant that harvesting activities should be conducted to ensure that the highest possible long-term yield could be taken from a resource subject to the general principles of conservation, and that the cost-effectiveness of activities and their management was also given due weight.

In 1990, the Commission stated that it needed timely scientific evidence to assist in its management considerations but agreed that it was still obliged to make decisions when the Scientific Committee was unable to provide that advice. Specifically, the Commission agreed that 'the absence of essential data should be taken into account when determining catch limits: in the absence of data, very conservative catch limits should be set' (CCAMLR 1990).

During this time, the Commission's attitude toward transparency and accountability was also not encouraging. While some scientific organisations were admitted as Observers from the first meeting, the applications of the citizen-based organisations ASOC and Greenpeace International were denied on the basis that the IUCN (International Union for Conservation of Nature), a quasi-government organisation, was sufficient coverage for conservationist groups. Observer attendance was limited to plenary meetings and the capacity to speak was very limited. In addition, Observers were not able to present papers unless specifically requested to do so.

It was not until 1989 that ASOC was granted Observer status to the plenary sessions of the Commission, and from the following year routinely to both the Commission and the Scientific Committee.

Fast forward to 2018 and full transparency continues to be problematic for CCAMLR. While the Commission has made its Meeting Reports publicly available and now routinely circulates a press release at the conclusion of its meetings, papers presented to the meetings, including those from the 1980s and 1990s, must be requested from the Secretariat, which must first seek permission from the author country before release. Some Members have repeatedly attempted to reset this process, suggesting variously that papers from meetings could be made publicly available after some years, that Members could mark their papers publicly available at the time of submission, or that Members could make a general statement about the availability of their papers. In stark contrast to many other international organisations that have embraced the citizen-stakeholder groups, applications for Observer status to CCAMLR from other environmental organisations continue to be refused. This has led to some very large ASOC delegations during recent years! In general, Observers are not invited to the working groups of the Scientific Committee, thus restricting their capacity to input expertise at the time of initial formulation of scientific advice, particularly around ecosystem monitoring and management. Some Commission Chairs continue to take a strongly restrictive approach to the frequency and length of Observer interventions, including those invited to provide information to the meeting. In addition, one nation routinely blocks consideration of proposals initially presented by ASOC, even when these are taken up by Member States.

The 'see-saw' years and advent of new fisheries

In 1989, things seemed to be looking up with the commencement of substantive discussions to address new and developing fisheries, support for the development of the comprehensive conservation strategy that would encompass ALL activities in an area, not just the target stocks, and almost routine consideration of fishery management conservation measures for some parts of the Convention Area. There were also inklings of awareness of the need to discuss a precautionary management policy for the krill fishery.

Of course, there was a long way to go. The continued 'single species' management approach was fundamentally insufficient to deal with the broader issue of overfishing and to encourage recovery of all affected stocks. CCAMLR still lacked the necessary tools to support effective stock management – a standardised data collection system and an effective system of scientific observation, key to ensuring that the biological data collected were accurate.

New issues were also arising. While the Commission continued to struggle with the problem of recovery measures for already depleted finfish stocks, new fisheries and new gears were being initiated, particularly for lantern fish and Patagonian toothfish (Dissostichus eleginoides) in the same area, without even basic estimates of size of stock, knowledge of predators, and the long-term impact of those gears.

The Soviet Union opened a new longline Patagonian toothfish fishery in that year, the first new fishery for CCAMLR, and reported a catch of 4138 tonnes, a massive increase on their previous Patagonian toothfish catches.

There were several problems with the management of this new longline fishery. The Scientific Committee reported that it was extremely difficult to develop accurate stock assessments of longline fisheries and that there was a substantial risk that the present catch levels of more than 4000 tonnes were unsustainable. There was also considerable evidence that longlining in the Southern Hemisphere had been a major factor in the decline of the wandering albatross (Diomedea exulans). And South Georgia, site of the longlining, is home to the largest rookery of this species. Unfortunately the Commission was unable to set a TAC that year, and USSR increased their fleet in the following season.

This discussion was occurring amidst a documented collapse of fisheries in all major ocean areas of the world. Ignoring this, CCAMLR continued to grapple with the delivery of any real precautionary measures in the protection and management of the marine resources it was responsible for.

These few years are reflected in ECO as a 'see-saw' of hope and frustration. 1989's final ECO concluded:

ECO wishes to congratulate the Commission for beginning to commence thinking about considering the possibility of perhaps drawing up some comprehensive conservation measures to protect the fish-stocks – which have already gone.

ECO in 1990 reported a slow positive movement toward ensuring at least temporary survival of depleted fish stocks – particularly around the Antarctic Peninsula, South Orkneys and South Georgia – precautionary and some breakthrough precautionary decisions made by the Commission around protection of non-target species and catch limits for Patagonian toothfish in the South Georgia area. A landmark decision was also made for the krill fishery, when the Commission agreed to a precautionary catch limit for krill of 1.5 million tonnes for Area 48, based on available knowledge, which it acknowledged to be extremely limited. While several Members were extremely uncomfortable with the high level of this catch limit – nearly three times higher than the current precautionary catch limit of 620,000 tonnes– when information was so poor, there were others who continued to insist that the lack of evidence should be equated with no risk to the ecosystem, and controls would place unnecessary limitations on rational harvesting. While this agreement was not perfect and didn't address competition with land-based predators at the local scale, it was an extremely important step toward applying precautionary and predictive management.

And a Resolution was passed to ban the use of high seas gillnets and driftnets in the Convention Area, in line with United Nations General Assembly Resolution 44/225.

By 1991, however, while conservationists were congratulating Antarctic Treaty nations on signing the landmark Protocol on Environmental Protection, deep concerns remained for the Southern Ocean. A litany of failures were reported in ECO (1991): N. rossii gone, serious decline of several other stocks, slow action to regulate the new longline fishery despite significant concern about the effects on both the stock itself and seabirds, no precautionary controls on the krill fishery, continuing issues with ecological and sampling variability, no standardised or independent system of observation onboard fishing vessels, ongoing issues with the recording, reporting and collecting of reliable data, and systematic rejection of advice provided by the Scientific Committee.

Yet it was obvious that there was a genuine desire and commitment from many of the Members of CCAMLR to make the Convention work, and to sustain the ecosystems and the fish stocks of the Southern Ocean into the future. Although the lack of sustainability of the Patagonian toothfish fishery and the scale of mortality of seabirds from that fishery continued to alarm both conservationists and the Scientific Committee over the next couple of years, there was obvious progress on the implementation of measures designed to ensure the sound management of the ecosystem as a whole.

The IUU era

In the early to mid 1990s a significant illegal, unreported and unregulated (IUU) fishery began developing, in 1997 reportedly taking four times the regulated catch. This consumed the Commission's time during meetings for much of the next ten years, to the detriment of progressing precautionary management measures for the krill fishery.

Yet as evidence of significant IUU activity grew, nations continued to notify for new fisheries of Patagonian toothfish at commercial catch levels based on extrapolations of stock estimates in other areas. As ECO noted in 1997 (ECO 1997a), '... many of the nations [were] citing conservation and enforcement to ensure that "they" don't take all of "our" fish before "we" can take them ourselves.' At the same time, a shameful 2000 seabirds were reportedly killed in the 'legal' longline fishery around South Georgia.

Conservationists warned of a 'CCAMLR crisis' in 1997, (ECO 1997b) noting that CCAMLR's many advances in embedding the Precautionary Principle across some of their management decisions would be rendered meaningless if CCAMLR did not immediately address the threats posed to the Southern Ocean ecosystem from IUU activity. Continuing IUU catches were estimated to be as high as ten times the legal catches for Patagonian toothfish, and an annual seabird mortality of upwards of 120 000, including around 30 000 albatrosses, was also estimated.

Still CCAMLR continued to support the legal fishery and nations continued to block the introduction of even simple measures such as Vessel Monitoring Systems (VMSs) used by other regional and national governments worldwide as a useful tool in combating IUU, and Port-State controls such as catch documentation schemes (CDSs), designed to freeze out IUU markets. This was in part because many of the companies responsible for IUU fishing were based in CCAMLR Member nations!

By 1999, when the legal fishery had all but collapsed while the IUU catch was estimated to be worth around US$600 million annually, Members adopted a CDS. However, without a centralised VMS system or other trade-restricting measures, IUU fishing continued unabated and pirate fish continued to enter the market.

It was not until 2006 that CCAMLR was able to implement sufficient enforcement measures to force IUU operators out of the Convention area. Many measures are now in place, including surveillance, IUU Vessel Listing, Port-State measures, a centralised Vessel Monitoring System (cVMS) and a

requirement for CCAMLR Members to prevent their nationals engaging in IUU activities. That they have not been able to adopt a comprehensive trade measure, however, significantly slowed genuine efforts to address the issue. This is likely a reflection of CCAMLR's general inability to deal with conflicts where other organisations or regions are involved, a problem also seen in their discussions around bird-strike mitigation and IUU activity in areas adjourning the Convention Area, climate change and global vessel safety.

The 'three steps forward, two steps back' years

As CCAMLR turned 15, it faced an increasing number of issues amidst a background of ongoing tension around the interpretation and application of Article II and the Precautionary Principle. While it has made significant progress during these years, it has never quite reached a level of maturity and comfort around its goals.

In 2005 Australia and Chile organised a symposium to provide a forum for an honest discussion of CCAMLR's relationship to global issues of relevance to its management obligations. From the onset, CCAMLR had kept itself isolated from global discussions for fear of United Nations interference in the delicately balanced sovereignty agreement. This was severely impacting on CCAMLR's capacity to effectively deal with IUU fishing, for example. While some progress was made in identifying the need to consider broader conservation objectives, including establishing marine protected areas (MPAs) and addressing destructive fishing practices, as well as mechanisms to enhance cooperation with other elements of the Antarctic Treaty System (ATS) and relevant regional fisheries management organisations (RFMOs), the core tensions remained unresolved.

Coming to grips with a regulatory framework

In 1994, the Working Group on Fish Stock Assessment advised the Scientific Committee that it was unable to provide sound scientific advice on the status of the Patagonian toothfish stocks, and finally Members focused on generating stock assessments and agreements on catch limits. This set the scene for rules around new and exploratory fisheries.

This was an enormous step forward, but it generated a new challenge. Regulatory controls developed for new and exploratory fisheries would disappear if such a fishery became an established fishery, as no such controls existed for existing commercial fisheries.

CCAMLR scientists responded to this challenge and developed the regulatory framework in the late 1990s. The framework was formulated to ensure that appropriate data and information could be collected and analysed for all fisheries to assist the Commission in developing management decisions. This included notification, establishment of research and fishery operations plans and data collection plans, as well as processes for closing and opening areas to fishing.

The framework was based on the understanding that knowledge increased as information increased but the level of precaution should be maintained. This would thus result in increased certainty around the risks associated with the decisions being made.

While this approach has generated some stability and standardisation around the consideration of fisheries-management decisions, some Members considered that precaution should be reduced as information increased. Nearly 20 years later, this debate remains unresolved; until it is, CCAMLR will be unable to fully honour its objectives.

Protection of vulnerable marine ecosystems

Since initial discussions in 2006, CCAMLR has taken strong action in response to United Nations General Assembly Resolution 61/105, which called on states and regional fisheries management organisations (RFMOs) to act to protect vulnerable marine ecosystems (VMEs) and to avoid adverse impacts from destructive fishing gear.

Measures include severe restrictions on the use of bottom-trawling gear, a prohibition on bottom fishing in depths shallower than 550 metres, requirement for prior assessment of the potential impact of any proposed bottom-fishing activities to have significant adverse impact on VMEs, a requirement for all fishing vessels to collect and report catches that include VME-indicator species, notification of VME encounters, move-on rules for any vessel triggering a prescribed VME-indicator level, and protection of registered VMEs until explicitly reopened. Several procedures have been implemented to support these measures, including a VME register, a glossary of terms identifying VME habitats and indicator species, training programs for vessel crews, criteria to assist with identifying VMEs, and an annually updated report of cumulative impact assessments for all bottom-fishing methods. While these are extensive measures, for which CCAMLR should be applauded, bottom longlining is still supported despite an acknowledgement that such gear could cause damage to a potential VME without any VME-indicator species being brought to the surface. And progress on refining VME-specific management measures continues to be deferred given other CCAMLR priorities.

Area protection

The Scientific Committee first considered marine protected areas in response to the 2002 World Summit on Sustainable Development (WSSD) recommendation that management of the oceans should include the establishment of marine protected areas (MPAs), but it was not until 2005 that it initiated a substantive discussion around a strategic approach to the design of a marine protected areas system. To ASOC, this was a discussion well past overdue, as the CCAMLR objective clearly requires Members to conserve marine species and ecosystems beyond any explicit contribution tofisheries management. Area protection offered CCAMLR a tool to ensure specific conservation of unique or rare ecosystems and species, to contribute to global research, and to build in ecosystem resilience.

Throughout the following years, CCAMLR developed a bioregionalisation methodology, acknowledged its commitment to the World Summit on Sustainable Development goal of achieving a representative system of MPAs based on best available science by 2012, adopted the South Orkneys southern shelf MPA in 2009, agreed to nine ‘planning domains’ within which

representative MPAs might be considered, adopted CM 91-04 (2011)[4], which provided a basic framework and process for the designation of MPAs, initiated technical workshops to examine several of the planning domains, and received proposals for large-scale MPAs in the Ross Sea region and within the East Antarctic Domain.

ASOC repeatedly applauded CCAMLR on its progress toward establishing a network of MPAs within the Convention Area and encouraged the Commission to also undertake work to identify vulnerable species, habitats and ecosystems[5]. ASOC Member group WWF provided support for an experts' workshop for bioregionalisation in 2006, which established a 'proof of concept' for the process.

By 2012, however, the cracks were starting to show, as substantial discussion on the content of the two proposals was blocked. The Ross Sea Region MPA, which spans over 2 million sq km, was eventually agreed in 2016 following an extraordinary high-level diplomatic engagement of primary protagonists, in combination with significant compromises, including agreeing to a fixed 35-year duration term. Unfortunately no other proposals have progressed and it is clear that some CCAMLR Members have serious doubts about the nature and purpose of an MPA network. Along with several nations and other observers, ASOC expressed its frustration to the meeting (CCAMLR 2017):

... once again, an agreement could not be reached to create an MPA in the East Antarctic. This is one of the saddest statements made by ASOC in a long time....

Regarding the proposal for an MPA in East Antarctica, for many years we have seen how the Members that have developed this proposal have worked hard, systematically and professionally, paying heed to the doubts and uncertainties of a number of other Members, to no avail…

It is also frustrating to see that in the two weeks of work in this meeting we have not heard a single discussion in which the doubts and uncertainties that these Members hold regarding this proposal were explicitly formulated. This fact not only leaves us worried, it also opens up questions as to how the world will perceive CCAMLR's incapacity to advance its conservation objective.

Tackling complexity and going beyond fisheries management compliance

CCAMLR has also made significant strides with the development and application of compliance measures. These include vessel licensing, a System of Inspection, the Vessel Monitoring System, and the Catch Documentation Scheme. After a very challenging and lengthy development process, CCAMLR implemented an annual Compliance Evaluation Procedure (CCEP) in 2012, designed to assist the annual evaluation of Member compliance. This procedure settled into a relatively open and supportive process for a discussion on non-compliance, where the majority of cases could be resolved without extended debate. However, while some Members have appeared to graciously accept a designation of 'non-compliant' and have focused on means to improve performance, others have strongly opposed such designation, even if for minor issues that can be readily settled.

However, 2017 was a very difficult year for the Standing Committee on Implementation and

Compliance (SCIC), responsible for undertaking the annual evaluation, as China consistently blocked a determination of non-compliance for a minor issue, and aggressively questioned the status of another Member's activity. The Commission eventually passed the Compliance Report without assigning a compliance status to China's issue. This approach is of extreme concern to conservationists as the ability of CCAMLR to affect its objectives and the external credibility of the organisation relies on a robust and honest compliance process.

Climate change

Human-induced climate change and ocean acidification may have profound ramifications for Southern Ocean marine ecosystems, affecting everything from nutrient cycles to organism survival. Scientists raised concerns about the impact of human-induced climatic change on the Southern Ocean ecosystems as early as 1997, declaring that 'there is unambiguous evidence of general warming of ocean waters and transfer of warmed waters to the ocean depths. The possibility of development of anoxic bottom waters is real.' (SC-CAMLR 1997).

The Commission, however, remained largely disengaged, despite the potential for changes in climate to generate uncertainties in the marine ecosystems they are responsible for managing. A non-binding Resolution (Res 30/XXVIII Climate change) agreed in 2010 encouraged Members to actively contribute to science that might inform CCAMLR management decisions. However, efforts to introduce routine information of possible climate change impacts that could then be used to develop management measures have been regularly rejected. Climate change is only explicitly referenced in the context of conservation and management of the region through the marine protected areas Conservation Measures (CMs) and CM 24-04, which creates special scientific study areas after ice-shelf collapse, although these references have not resulted in any heightened interest or action on the acceptance of MPAs.

Given the precautionary framework underpinning CCAMLR's objectives, it would seem imperative that CCAMLR undertakes a comprehensive reassessment of its decision-making procedures as well as its current management measures. For more than ten years, ASOC has reminded Members of their obligations under Article II, and called for the Commission to act on its acknowledgement that consideration of climate change impacts is important when formulating management decisions[6]. Thus far this has not happened.

In recent years China has consistently stated that inclusion of such statements may generate ambiguity and be without scientific support, and with the support of some other nations has insisted that CCAMLR's focus should be limited to the collection of scientific data.

No doubt many CCAMLR scientists and policy makers are thinking about climate change, but this is meaningless if it is not part of policy decisions. It is difficult to see how CCAMLR will understand and take into account impacts from climate change if no areas are set aside from fishing, and if they don't build a risk assessment into their considerations.

THE KRILL FISHERY

CCAMLR's response to its responsibility to manage the krill fishery in a precautionary manner has been tortuous. Even before the data analysis of the year 2000 CCAMLR krill survey in Area 48 could be completed there was renewed interest in krill fishing in anticipation of new potential uses and new fishing technology.

In 2001, CCAMLR established krill catch limits in the South Atlantic sector (Area 48) at 4 million tonnes, subdivided into 1008 million tonnes for the Antarctic Peninsula (Subarea 48.1), 1104 million tonnes for South Orkneys (Subarea 48.2), 1056 million tonnes for South Georgia (Subarea 48.3) and 0.832 million tonnes for South Sandwich Islands (Subarea 48.4). They also agreed that if the total annual krill catch in Area 48 reached a so-called 'trigger level' of 620 000 tonnes[7], additional subdivision of catch would be required in order to prevent local depletion of krill. The krill fishery was not subject to the research requirements applied to other fisheries and was not required to operate a VMS or carry scientific observers.

ECO (2001) noted in response that it was relieved that the krill fishery remained small, given the seeming inability of CCAMLR to develop a sufficiently precautionary management plan for a species at the centre of the Antarctic food web and where concentrated fishing could have profound impacts on predators at a local level.

In 2002, Area 48 was subdivided into 15 Small-Scale Management Units (SSMUs) and the Scientific Committee was tasked with providing advice on catch levels for each subdivision. Unfortunately these SSMUs have never been accepted by Russia and thus have no legal status.

In 2009, CCAMLR agreed to an interim measure (CM 51-07) to distribute the trigger level across Area 48's subareas. Since then, the catch limit for the Antarctic Peninsula has been reached five times, necessitating closure of the fishery before the end of the season.

Moving forward to 2018, and it is difficult not to conclude that CCAMLR has largely missed an opportunity to ensure precautionary measures are in place prior to any expansion. The Antarctic krill fishery is the largest in the Southern Ocean, and while current catches of around 250 000 tonnes remain significantly less than the 620000tonnes 'trigger level', new research has shown that impacts at the local level may be quite profound. The promised scientific feedback mechanism necessary to frame management advice is still in development. Existing management measures are temporary and do not relate to the actual status of the krill biomass. Fishing has now recently returned to Subarea 58.4, after a 20-year absence. Some positive steps have been made on improving scientific observer coverage, and only in few years it will reach the 100 per cent coverage expected for the toothfish fishery.

Eternally hopeful, conservationists do see some possibility for significant imminent progress if the risk assessment approach for the krill fishery introduced in 2016 is implemented alongside allocation of refined trigger levels. This approach would require assessing the risk of impacts on predators at the scale of available data.

Yet tensions around interpretation and application of CCAMLR objectives continued. Yet another symposium hosted by Chile, Australia and the USA in 2015 (CCAMLR 2015) focused specifically on implementation of Article II, generated more differences than it resolved. This led ASOC to express strong concerns that CCAMLR was drifting away from its obligations and towards a position of 'balancing' conservation and rational use, and to considering conservation only in the context of sustainable fisheries management and scientific endeavour rather than in relation to conservation of the Southern Ocean ecosystem as a whole (ASOC 2016).

Role of Environmental Non-Governmental Organizations (ENGOs)

As noted earlier, conservation stakeholders have played an important role in CCAMLR since its inception, and throughout its history have played the part of 'watchdog,' reminding delegates of their obligations to implement the conservation objective of the CCAMLR Convention. The role of ENGOs should not be dismissed simply for their role in advocating for the conservation of the Southern Ocean; rather, their commitment is as legitimate as that of the fishing industry, their skill base is broad, and their knowledge of the system extensive.

The Antarctic and Southern Ocean Coalition (ASOC; www.asoc.org) is a collaborative effort by conservation organizations from around the world which has official observer status within the Antarctic Treaty regime. ASOC has prepared official papers for many Antarctic Treaty and CCAMLR meetings over the years and hosted receptions to highlight special projects of its Member groups and to create space to advance important policy issues being discussed by CCAMLR. Through the support of its Member groups, ASOC has also funded many important initiatives throughout the years, such as supporting the attendance of independent scientists at CCAMLR meetings and workshops, thus bringing valuable science to the management process.

ASOC and its Member groups have also participated directly in science and technical policy work, and in driving innovative initiatives. For example, ASOC and WWF-Norway worked with the krill fishing company Aker Biomarine to establish the Antarctic Wildlife Research Fund (AWR; www.antarcticfund.org) to facilitate and promote research focused around an ecosystem approach to Antarctic krill fishery management. In addition, WWF has been supporting technical workshops and financing science projects in Antarctica, focusing on issues like polar climate.

Another active ASOC Member is The Pew Charitable Trust (Pew), which has been promoting Southern Ocean conservation policies for the last 15 years. Pew was instrumental in the designation of the Ross Sea Region marine protected area (MPA), driving a global campaign to support designation of the MPA. At the political level, Pew worked closely with the U.S. State Department and former Secretary Kerry to undertake high level outreach with China and Russia, which cultimated in meetings where the U.S. secured agreements with Russia and China. Pew also undertook on the ground work in Russia to connect with key decision-makers, supporting annual events in Moscow which brought together key decision makers and CCAMLR member country representatives. In recent years, Pew has provided technical support for Argentina and Chile on development of the Antarctic Peninsula MPA proposal. Pew has supported a large body of additional Southern Ocean

science, including: penguin population monitoring work for the Antarctic Site Inventory (Oceanites); ecosystem modelling work to support krill fisheries management and the Antarctic Peninsula MPA proposal (Farallon Institute); killer whale monitoring to better understand habitat hotspots and population dynamics in the Antarctic Peninsula region (Center for Whale Research); and research on humpback whales in the Ross Sea, including use of genetics and GPS tracking to understand whale migrations from New Zealand waters to the Ross Sea (Pew Marine Fellow Regina Eisert), among others. In addition, Pew has sponsored key conferences such as the 2017 International Marine Protected Areas Conference (IMPAC4) and the 2018 Marine Ecosystem Assessment for the Southern Ocean (MEASO) technical meeting.

Greenpeace hosted Argentinean scientist expeditioners on one of its ships in 1999, who discovered the Larsen B crack. In 2018, Greenpeace undertook an underwater camera survey of the Antarctic Peninsula area.

2018: CCAMLR at the tipping point?

Throughout its existence CCAMLR has struggled to find common agreement on how to achieve its objectives, and recent entrants to the organisation are severely testing the very basis of the Convention. There is no agreement on the relative relationship between conservation and rational use. There is no agreement on what represents rational use. There is no agreement on whether conservation relates only to fisheries management or to the maintenance of a healthy and viable marine ecosystem for its own sake. In a consensus-based organisation, CCAMLR can only be as good as its least committed Member, and there appears to be more than one Member who is intent on undermining CCAMLR's objective to conserve Antarctic marine living resources. China, in particular, views the objective as implying that conservation and rational use are equally aligned, and that the 'customary practice' and 'common understanding' approaches to working together leaves too many opportunities for legal misunderstandings.

It is also clear that CCAMLR continues to labour with issues where activities occurring external to the CCAMLR Area impact on CCAMLR's decision-making process. This has been evident in CCAMLR's response to dealing with many issues, including IUU fishing, ship safety and climate change.

And increasingly some Members interpret the Precautionary Principle, embodied in Article II of CCAMLR, and the precautionary approach adopted by several RFMOs as one and the same. The Principle establishes the framework within which management of activities within the Convention Area should occur, that is to avoid ongoing, serious or irreversible damage to Antarctic marine species or the marine ecosystem. Every decision within CCAMLR should be made from this framework; the burden of proof of low threat or impact is squarely on those who wish to undertake an activity. A precautionary approach requires that all possible practicable and reasonable precautions be taken into consideration when making decisions. Generally linked to an objective of sustainable harvesting of resources, this places much higher emphasis on the use of the resources.

Can Article II survive this onslaught? It is hard to judge. CCAMLR is an extraordinary convention

which, if its Members work collectively and in the spirit of its 1980 conception, can maintain a healthy and viable ocean ecosystem while allowing for some fishing. CCAMLR Members committed to this Convention must protect their investment to ensure its ongoing survival and viability. They must be tenacious in their demand for resolution of the many challenging issues still facing CCAMLR. Many citizens are watching their efforts and urging them on for the sake of a very special place on Earth.

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3- https://www.gdrc.org/u-gov/precaution-7.html
4- Argentina, Australia, Belgium, Chile, European Economic Community, France, German Democratic Republic, German Federal Republic, Japan, New Zealand, Norway, Poland, South Africa, Union of Soviet Socialist Republics, United Kingdom and United States of America, Food and Agriculture Organisation (FAO), International Oceanographic Commission (IOC, International Union for Conservation and Natural Resources (IUCN), International Whaling Commission (IWC)
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Contributors

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Cristina Mittermeier was born in Mexico City in 1966 and grew up in nearby Cuernavaca, in the sunny state of Morelos. She is a photographer and marine biologist who for the past 25 years has been working as a writer, conservationist and photographer. She graduated from the ITESM University in Mexico with a degree in Biochemical Engineering in Marine Sciences and later attended the Fine Art Photography program at the Corcoran College for the Arts in Washington, D.C. In 2005, she founded the prestigious International League of Conservation Photographers (ILCP) to provide a platform for photographers working on environmental issues. In 2015, she co-founded Sea Legacy, a non-profit dedicated to protecting the ocean, with her partner, Canadian photographer Paul Nicklen. In 2010 Mittermeier was awarded the Mission Award from the North American Nature Photography Association (NANPA) and the Smithsonian Conservation Photographer of the Year Award. In 2016, she received the Imaging Award for Photographers Who Give Back. She is a member of the World Photographic Academy. Cristina is a Sony Artisan of Imagery, and was recently recognized as one of the World's top 40 Most Influential Outdoor Photographers by Outdoor Magazine.

JAMES BARNES

Jim received his Juris Doctor degree from the University of Michigan Law School in 1970, and moved to Washington, DC to clerk for Federal Judge John Pratt for the next year. From mid-June 1971 he was a lawyer on the Alaska Pipeline case at the Center for Law and Social Policy for two years, served as a Public Defender in DC for two years and worked at Wilmer, Cutler & Pickering in DC. From 1977-82 he was an attorney with the Center's International Project. While there he co-founded the Antarctic and Southern Ocean Coalition (ASOC) in 1978 with colleagues in the UK, France, Australia and New Zealand, serving for many years as General Counsel, and as Executive Director from 2005-14. He helped direct ASOC campaigns for an ecosystem-as- a-whole fisheries convention from 1978-82; against the proposed Minerals Convention from 1982-89; and for an Environmental Protocol to the Antarctic Treaty that banned minerals activities, from 1989-98. Jim helped develop the campaign to protect the Ross Sea starting in 2003. He wrote Let's Save Antarctica in 1982 as a citizens' handbook for Antarctica to be protected as a World Park. He serves ASOC as Honorary Founding Chair.

MANFRED REINKE

Dr. Manfred Reinke is a German citizen and has a doctoral degree in Marine Biology as well as a master's degree in Computer Science. From 2009 to 2017 he held the position of Executive Secretary of the Antarctic Treaty at the Secretariat of the Antarctic Treaty in Buenos Aires, Argentina. Before heading the Secretariat of the Antarctic Treaty, Dr. Reinke was Senior Science Officer at the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research in Germany, reporting directly to the Director of Science on matters relating to the delivery of corporate strategy and policy,

coordination of directorate and board meetings, and implementation of directorate decisions. As an Antarctic specialist, Dr. Reinke has extensive experience in initiating and leading international projects. He was inter alia responsible for the establishment and technical management of the first ICSU World Data Center for Marine Environmental Sciences, as well as setting up a network that now comprises three ICSU World Data Centers in Germany. He also played a key role in establishing and defining the mandate of the Joint Committee on Antarctic Data Management (JCADM) within the Scientific Committee on Antarctic Research (SCAR) at that time. Dr. Reinke participated in several German expeditions to Antarctica, including a research visit of several months at the Polish Antarctic Station HenrykArctowski.

DENZIL MILLER

Denzil has worked in the Antarctic for nearly 40 years. He has a PhD in marine biology from the University of Cape Town and is a Professorial Fellow at the University of Wollongong. Denzil has received the South African Antarctic Medal in 1995 and the prestigious Duke of Edinburgh Conservation Medal in 2007 for his contribution to Antarctic conservation and management. He became a Member of the Order of Australia (AM) in 2011 for his services to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), where held positions as WG-Krill Convenor, Scientific Committee Chair and Executive Secretary over the years. He has worked for the FAO and been in involved a number of RFMOs. Passionate about the Antarctic, Denzil has authored over 80 papers and books on Antarctic and Southern Ocean policy, science and management - including a definitive review of krill ecology in the late 1980s. He has spent more than three years in the Antarctic and has lead 12 research cruises there. Denzil is currently an Adjunct Senior Researcher at the University of Tasmania's Institute for Marine and Antarctic Studies.

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Osvaldo Urrutia is a lawyer graduated from Universidad Católica de Valparaíso (Chile), where he now teaches international law and law of the sea at its Faculty of Law. After obtaining his LL.M in 2008 (University College London), he has worked as legal adviser of the Government of Chile on the law of the sea and fisheries affairs. In this capacity, he has frequently participated representing Chile in international fisheries, environmental and trade fora. From 2013 to 2016 he served as Chair of the Standing Committee on Compliance and Implementation (SCIC) in CCAMLR, and since 2017 serves as the Chairman of the Commission in the South Pacific Regional Fisheries Management Organisation (SPRFMO). In parallel, he is currently undertaking doctoral studies in international law at Victoria University of Wellington, New Zealand.

CHRISTOPHER JONES

Christopher received his Master's degree in Biological Oceanography from Old Dominion University, and Doctoral degree in Marine Biology and Fisheries from the University of Miami. He has worked for NOAA's Fisheries Highly Migratory Species Division in Miami for 10 years before moving to NOAA's Antarctic Ecosystem Research Division, where he has been active for two decades. His primary interests are the population characterization, demographics, and dynamics of Antarctic finfish and their relationship to other components of the Antarctic marine ecosystem. His work

has included leading numerous expeditions in the Southern Ocean to characterize Antarctic marine species, and he has worked to detect vulnerable marine ecosystems (VMEs), and further pursued mechanisms to ensure they are not adversely impacted by destructive bottom fishing practices. He is actively involved in Antarctic fish stock assessments, and developing Conservation Measures for Antarctic marine living species. He has been a member of the U.S. delegation to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) since 1998, and has served as the Chair of CCAMLR's Scientific Committee and Standing Committee for Affairs and Finance.

LYN GOLDSWORTHY

Lyn is a long-time advocate for Antarctic and global oceans conservation. She has been actively involved at the national and international policy level in Antarctic issues since 1983 and served as a senior advisor to the Antarctic and Southern Ocean Coalition (ASOC) and Deep Sea Conservation Coalition (DSCC) for many years. She has served on the Australia Antarctic Science Advisory Committee for two periods of 8 years each, and as an advisor to the SCAR Group of Specialists on Antarctic Environment and Conservation in the 1980s. She attended most Antarctic Treaty Consultative Meetings (ATCMs) between 1985 and 2013 as the non-government representative (NGO) on the Australian delegation, and many Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) in the capacity of representative of ASOC or on the Australian delegation. Between 1995 and 2000, she led climate impacts work for Greenpeace International and attended several climate negotiations, before focusing on establishing new regional Offices for Greenpeace. She has also undertaken consultancy work for the Australian government on conservation elements of the Southern Indian Ocean Fisheries Agreement (SIOFA) and has attended South Pacific Regional Fisheries Management meetings. Her engagement in both the Antarctic and RFMO policy area over a 35-year time span has given her a deep understanding of the role of scientists, industry and the conservation community in CCAMLR, Antarctic Treaty and various regional fisheries management arrangements. Lyn was awarded the Order of Australia (Member) for services to conservation and environment in 1991, the New Zealand Antarctic Conservation Trophy in 1990, and serves on two non-government sector Boards. Lyn is currently the Executive Director of Frank Fenner Foundation, which promotes relationships between researchers, policy makers, industry and community stakeholders.

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