CHANGE AND CONTINUITY IN ANTARCTIC ENVIRONMENTAL PROTECTION: POLITICS AND POLICY

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Mahinda H. Perera

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Abstract

Antarctica has come to symbolize the new dimension in international relations - the relationship between humankind and the natural environment. The growing environmental awareness among publics and governments has focussed on the need to give priority to the environmental impacts of economic development policies if past mistakes are to be corrected and a better path to the future is to be provided. This awareness has spread to the far corners of the Earth including the area south of 60° South Latitude - Antarctica. The study attempts to empirically evaluate the implementation of the policies of the environmental regime created under the Antarctic Treaty System since 1961. The main focus is on the factors that enhance or impair the effectiveness of such regimes. The central thesis is that the Antarctic Treaty System, which was created essentially as a conflict prevention mechanism and which has been characterized by its secrecy for most of its existence, has been transformed into one of the more effective environmental protection regimes. This has been due largely to the pressure exerted by a transnational coalition of environmental nongovernmental organizations (NGOs). Such pressure has resulted in the elevation by governments of environmental protection from "low politics" to "high politics" on the Antarctic diplomatic agenda.

Abbreviations

AEIMEE	Antarctic Environmental Implications of Possible Mineral Exploration and Exploitation
AEPS	Arctic Environmental Protection Strategy
ASMAs	Antarctic Specially Managed Areas
ASOC	Antarctic and Southern Ocean Coalition
ASPAs	Antarctic Specially Protected Areas
ATCM	Antarctic Treaty Consultative Meeting
ATCPs	Antarctic Treaty Consultative Parties
ATS	Antarctic Treaty System
ATSCM	Antarctic Treaty Special Consultative Meeting
AWP	Antarctic World Park
BIOMASS	Biological Investigations of Marine Antarctic Systems and Stocks
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CEEs	Comprehensive Environmental Evaluations
CFCs	Chlorofluorocarbons
CRAMRA	Convention on the Regulation of Antarctic Mineral Resource Activities
DVDP	Dry Valley Drilling Project
EDF	Environmental Defense Fund
EIAs	Environmental Impact Assessments
EPA	Environmental Protection Agency
EC	European Communities
EP	European Parliament
FAO	Food and Agriculture Organization
GIPME	Global Investigation of Pollution in the Marine Environment
IEEs	Initial Environmental Evaluations

IGOs	Intergovernmental Organizations
ICG-SO	International Coordination Group for the Southern Oceans
ICES	International Council for the Exploration of the Sea
ICSU	International Council of Scientific Unions
IGY	International Geophysical Year
IHO	International Hydrographic Organization
IIED	International Institute for Environment and Development
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
ISOS	International Southern Ocean Studies
IUCN	International Union for the Conservation of Nature and Natural Resources
IWC	International Whaling Commission
LDC	London Dumping Convention
MARPOL 73/78	1973 International Convention for the Prevention of Pollution from Ships and its 1978 Protocol
MPAs	Multiple-use Planning Areas
NEPA	National Environmental Policy Act
NGOs	Nongovernmental Organizations
NOAA	National Oceanic and Atmospheric Administration
NSF	National Science Foundation
OPEC	Organization of Petroleum Exporting Countries
PAs	Preliminary Assessments
RISP	Ross Ice Shelf Project
SCAR	Scientific Committee on Antarctic Research
SCOPE	Scientific Committee on Problems of the Environment
SCOR	Scientific Committee on Oceanic Research
SPAs	Specially Protected Areas
SSSIs	Sites of Special Scientific Interest
UK	United Kingdom
UN	United Nations

UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNCLOS III	Third United Nations Conference on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
Unesco	United Nations Educational, Scientific and CulturalOrganization
US	United States
USAP	United States Antarctic Program
USSR	Union of Soviet Socialist Republics
WCS	World Conservation Strategy
WG-DAC	Working Group for the Development of Approaches to Conservation of Antarctic Marine Living Resources
WMO	World Meteorological Organization

Acknowledgements

Research on this thesis which began in mid-1988 was inspired by the writings of Professor Francis M. Auburn (University of Western Australia) in the field of international law. He alerted me to the efforts of the then largely obscure group of NGO activists struggling to put the ecological dimension of Antarctica on the public agenda. The apparent consensus among scientists, diplomats, bureaucracies, politicians and most scholars about the sustainability of Antarctic mining and the effectiveness of the extant ATS regimes for environmental protection had thwarted any substantive discourse on the politics of environmental protection in the "last great wilderness" on Earth.

The NGO community has been most helpful with regard to documents and information. I am particular grateful to Louise Bell (Greenpeace International), James Barnes (The Antarctica Project), Bertrand Charrier (Fondation Cousteau), Kaye Dyson (Greenpeace-Australia), Michael Earle (Greenpeace-EC Unit), Alan Hemmings (Greenpeace-New Zealand), Chris Horne (ASOC-New Zealand), Margaret McDonald (Australian Conservation Foundation), Bruce Manheim, jr. (Environmental Defense Fund), Beth Marks (The Antarctica Project), Barbara Mitchell (IIED) and Susan Sabella (Greenpeace-USA).

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Part I Introduction and Historical Context of Antarctic Politics

Introduction

The Antarctic Treaty (see APPENDIX 1) was negotiated in 1959 for the governance of the Antarctic continent (i.e. the area south of 60° South Latitude). The Treaty has four fundamental objectives: (1) a moratorium (or "freezing") on territorial claims; (2) the demilitarization of the Antarctic; (3) the promotion of international scientific cooperation; and (4) the conservation of living resources.

Nevertheless, the regime was designed primarily as a conflict prevention mechanism. It sought to address international conflict in terms of preventing the spill-over into Antarctica of the Cold War between the superpowers, as well as regional conflict in terms of controlling the territorial competition both among claimant states and between claimant and non-claimant states.

Most of the objectives of the Antarctic Treaty have stood the test of time. The regime has continued to maintain peace and stability in the frozen continent and has established a high level of multinational scientific collaboration. But the initial measures established in the 1960s to protect Antarctica's wildlife were of a rudimentary nature and achieved limited results. Even the additional regimes created to mitigate the impacts of intensified resource-oriented scientific and logistic support activities in the 1970s did not provide effective protection because of the lack of enforcement and compliance monitoring mechanisms. Two resource conventions created in the 1980s, one to regulate an already expanding fishery, and the other to regulate the continent's potential mineral wealth, proved controversial in light of the growing scientific evidence of the fragility of the Antarctic environment and the lack of effective enforcement of existing mechanisms. The adoption of an integrated and comprehensive approach to conservation under the Madrid Protocol to the Antarctic Treaty (APPENDIX 4) in 1991 marked a major transformation in the regime's orientation.

I. Scope of the Study

In this study I attempt to empirically evaluate the implementation of the policies of the environmental regime created under the Antarctic Treaty System (ATS) over the period 1961-1991. The main focus is on the factors that enhance or impair the effectiveness of such regimes. My central thesis is that the ATS, which was created essentially as a conflict prevention mechanism and which has been characterized by its secrecy for most of its existence, has been transformed into one of the more effective environmental protection regimes. This has been due largely to the pressure exerted by a transnational coalition of environmental nongovernmental organizations (NGOs). Such pressure has resulted in the elevation by governments of environmental protection from "low politics" to "high politics" on the Antarctic diplomatic agenda. These issues have acquired increased importance in the domestic policy processes of the Western Antarctic Treaty Consultative Party (ATCP) states concerned. Concomitantly the formerly internalized policy-making processes of the ATS have been opened up to a measure of participation by nonstate actors, especially environmental NGOs. The dissertation has adopted a historical approach which will assist us in analyzing patterns of beliefs, perceptions and behaviour of states and nonstate actors that occur and recur in Antarctic environmental politics.

The dissertation does not attempt to be comprehensive in its treatment of Antarctic environmental issues. It deals with the most salient issues. These are three issue areas pertaining to the control of human impacts on the Antarctic environment and two resource issues for which regimes were created. However, it does not deal with the Antarctic Sealing regime, which was created in 1972 and entered into force in 1978; in view of the fact that Antarctic commercial sealing has not been resumed as was anticipated at the time, the regime has had little or no effect. The thesis also does not deal with organized Antarctic tourism, for which

a substantive regime has yet to be created.

The effectiveness of the Antarctic environmental protection regime has received international attention in recent years for a variety of reasons.

There has been a growing public awareness of the role of the international commons, including Antarctica and the Southern Ocean, in maintaining the stability of the Earth's biosphere. There has also been a growing understanding of the scientific and ecological importance of Antarctica's natural environment. Its near pristine conditions enable the conduct of scientific research and monitoring on problems of the global environment - stratospheric ozone depletion, global warming and climate change.[1]

Effective protection of Antarctica has also gained salience in terms of its symbolic value as the "last great wilderness" on Earth. There has been an increasing appreciation of the continent's intrinsic values, especially its aesthetic, recreational, educational and spiritual values in a planet which has lost most of its wilderness areas through population and resource pressures. This awareness was epitomized by the decision of the Antarctic Treaty states to abandon the proposed Antarctic minerals regime under the weight of public opinion mobilized by environmental groups. The adoption of the Madrid Protocol on Environmental Protection to the Antarctic Treaty in 1991, which imposed a mining moratorium and introduced rigorous rules for the conduct of scientific, logistical and tourist activities, thus reinforced Antarctica's symbolic significance.

Pressure for greater protection of Antarctica was also heightened by the evidence of the fragility of its ecosystems: in particular, the results of scientific research indicating the atmospheric transfer to Antarctica of industrial pollutants from the Northern Hemisphere, and images of damage caused by lack of effective enforcement of pollution control rules by some states, provided proof of the vulnerability of the continent. The adoption of the Protocol was widely perceived as a

recognition by the ATCPs that the existing regimes were inadequate to deal with the pressures on the Antarctic environment. Thus much attention has been focussed in recent years on the rigorousness of Antarctic environmental regimes.

However, few studies have attempted to analyze the political dimension of the Antarctic environmental regime. This is largely because until recently debates surrounding the frozen continent have been framed in terms of the legal ownership of the continent,[2] assessments or speculations about its much anticipated mineral riches, and the possible application of concepts of international law to address issues of access to such resources or the distribution of the benefits from exploitation.[3] Moreover, the general orientation of the literature has been conditioned by perceptions of Antarctica as a *sui generis* region of peaceful international scientific cooperation devoid of politics or immune to the influences of world politics.[4] Notwithstanding the success of the Antarctic Treaty in maintaining Antarctica as an international peace and nuclear-weapons-free zone, the study of the implementation of the environmental policies under the Treaty has been a neglected area of study. Nor has there been much scholarly interest in the involvement of international organizations, both intergovernmental (IGOs) and nongovernmental (NGOs), in Antarctic environmental politics and policy. This gap reflects in general what Karl Deutsch observed in the field of environmental management:

> Political processes and institutions are rarely mentioned directly and even more rarely analyzed in detail. And yet, the substance of politics - decisions and commands, compliance and enforcement, and support, opposition or resistance, the allocation of values, costs and burdens - all this is inescapably implied in almost every ecosocial problem.[5]

In the Antarctic Treaty context, two inter-related factors could be identified as having prevented effective debate and study of environmental politics. One has been the success of the ATCPs in projecting an image of unity on issues on which there was little consensus within the confines of

the internalized policy processes of the ATS. Indeed, it could be said that on some issues (for example, the establishment of a national presence and conduct of scientific research) considerable strategic rivalries existed. The other factor has been what Davis has described as the "somewhat over-glamorized image of exploration and scientific research" which prevented objective assessments of the ecological impacts of modern technologies, improved transport and logistics and growing human activities or the potential for resource disputes or strategic nuclear rivalry in the Southern Ocean.[6]

This study will attempt to highlight change and continuity in the Antarctic environmental regime in terms of its effectiveness in maintaining the integrity of the continent's ecosystems. The effectiveness of the Antarctic environmental regime is assessed in terms of:

(1) the legally binding nature of the regime;

(2) the degree of state latitude for interpretation of rules and policies;

(3) institutions and capacities for enforcement and compliance monitoring;

(4) factors that shape state compliance with regime rules and policies.

This approach focusses on the efficacy of Antarctic environmental regimes in protecting the environmental quality of ecosystems. It departs from the traditional state-centric approach to the study of international regimes. Regimes have been defined broadly as "sets of implicit or explicit principles, norms, rules and decision-making procedures around which actors' expectations converge in a given area of international relations."[7] Although the term "regime" has a wide range of applications in various disciplines and approaches, in its more recent application to specific issue areas of international environmental protection, two major schools of analysis can be distinguished: one is utilitarian, based on the assumption that states as rational utility maximizers will reach agreement

about arrangements that promote their interests; and the other is the realist, or neo-realist school which attempts to assess the configuration of state power reflected in international agreements.[8] In assessing the strengths and weaknesses of various ad hoc environmental regimes established under the ATS, this study attempts to go beyond this political context of their creation and maintenance and look at their success in improving environmental quality. It has been influenced by the growing concern that the functional and formal aspects of environmental regimes are an inadequate basis for understanding the implementation and enforcement of not only Antarctic but also global environmental regimes. Thus, in assessing the existing state approach to global environmental treaty-making, Susskind and Ozawa have observed that,

> [a] great deal of effort has been invested in 'getting written agreements'. Far too little attention has been paid to guaranteeing that real environmental improvements are made. Very few agreements have actually prevented development practices that undermine sustainability. Few, if any, agreements have led to major reforms within each country that would guarantee implementation of these environmental treaties.[9]

This criticism can also be levelled at the recent attempts to evaluate the adequacy and effectiveness of extant international environmental agreements. For example, a survey of 124 multilateral environmental instruments done for the 1992 United Nations Conference on Environment and Development (UNCED) failed to substantively assess state compliance with specific provisions of treaties and the concomitant domestic policy changes.[10]

This study is also concerned with how the effectiveness of Antarctic environmental regimes is affected by the political bargaining process among states. Indeed negotiations prior to 1990-91 were largely focussed on securing short-term economic and strategic interests of states rather than the sensitivity of Antarctic ecosystems based on available scientific evidence. Many of the ad hoc regimes for various issue areas were effectively outcomes of the "lowest common denominator" of compromise and were characterized by vague language, lack of enforceable sanctions and

follow-up action. This undermined successful implementation and effective protection of Antarctic ecosystems. As will be seen, even when environmental quality was given some consideration as in the adoption of the ecosystem principle in the case of CCAMLR, it was not allowed to override the need to maintain unimpeded access to Antarctica's resources; this was evident in the failure of the regime to establish effective mechanisms for its implementation such as harvesting restrictions. However, growing concern about the deterioration of the Earth's ecosystems have recently focussed attention on the conduct of environmental negotiations. As Susskind and Ozawa have pointed out:

> Obviously all treaty negotiations require a give-and-take among the countries involved. In the case of environmental agreements, however, merely satisfying the demands of the interested states is not enough. The dynamics of the natural systems involved must be respected, and impose a constraint upon possible political compromise.[11]

Finally, effectiveness of Antarctic environmental regimes is also explored in terms of the linkages between international regimes and their domestic implementation. In this regard the role of non-state actors, principally environmental NGOs both at the transnational and national levels has been a critical determinant in enhancing the effectiveness of Antarctic regimes. It attempts to address the issue involving the neglect of domestic political processes in the study of international regimes identified by Haggard and Simmons.[12]

Chapters 1 and 2 provide a prelude to the rest of the dissertation by examining Antarctic politics in historical perspective. These provide insights on how and why the original twelve Antarctic Treaty states came to perceive a remote and uninhabited frozen continent in strategic terms and to covet its potential resources, particularly minerals. This context also partly explains the inordinate level of secrecy with which governments treated information on Antarctic Treaty Consultative Meetings and negotiations until the late-1980s, and the constraints imposed on participation by international organizations in ATS policy processes.

Moreover, the strategic perceptions of Antarctica were to have a lingering effect for some of the Antarctic Treaty states in their attitudes towards environmental protection measures, especially where these were seen as a potential barrier to resource development.

Chapter 3 deals with the first of the subregimes created under the Antarctic Treaty for limiting the impacts of human activities on Antarctic fauna and flora. It assesses the implementation of the Agreed Measures regime until 1989. It will also assess how the Annexes drawn up under the Protocol regime addressed the weaknesses of the Agreed Measures. The discussion pays particular attention to the links between conservation and mineral resource issues. The chapter also evaluates the role of non-state actors both within and outside the regime. Non-governmental organizations played a key role in monitoring state compliance with the regime and in mobilizing domestic and interr ational public opinion in the 1980s on the need to overhaul the Agreed Measures.

Chapter 4 concentrates on the implementation of policies under the sub-regimes for environmental impact assessments (EIAs) and waste management. Both were created to mitigate the impacts of increasing levels of scientific and logistical support activities in the 1970s. The growth of the human presence was largely motivated by a desire to open up Antarctica for the development of mineral resources in the context of global energy problems. The chapter identifies the factors that impaired the effectiveness of both regimes. Attention will be paid to the interplay between the domestic and international processes and their linkage with the mineral resource issue. The Protocol regime's treatment of both the EIA and waste disposal issues will be assessed in the context of the debate about the level of control to be imposed on scientific activities. The role of transnational environmental NGOs in monitoring compliance at the international level, and of US groups in attempting to strengthen the enforcement of EIA under the Protocol through judicial review and administrative reform at the national level, will also be assessed. On the

latter, the discussion will take account of developments in US domestic processes up to 1993.

Chapter 5 focusses on the attempts to control and prevent pollution of the Antarctic marine environment. It explores the reasons for the failure to form a marine pollution control regime until 1989. Particular attention will be paid to the nexus between marine scientific research, sovereignty over disputed continental shelves and geostrategic perceptions of the Southern Ocean. It also looks at the continuing problem of regulating vessel-source pollution under the Protocol.

Chapters 6 and 7 concentrate on the only resource conservation convention effectively in force under the Antarctic Treaty System. Chapter 6 evaluates the factors that influenced the formation of the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), the contentious issues in its negotiation and the role of non-state actors. Chapter 7 will assess CCAMLR's implementation in its first decade of operation. Particular attention is paid to the role of NGOs in enhancing the effectiveness of the regime.

Chapter 8 deals with the most controversial issue in Antarctic environmental politics, the regime created for the exploitation of potential Antarctic mineral resources. It assesses the domestic factors that influenced the formation of the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), the contentious nature of the issue and the effectiveness of the provisions of the regime as an environmental and conflict-prevention mechanism. Doubts about the CRAMRA regime to adequately ensure the nondegradation of the Antarctic environment subsequently generated pressures from environmentalists on states to withhold approval of the regime.

Finally, Chapter 9 draws some conclusions on the place of Antarctica within the study of international environmental politics; the role of NGOs and their relationship to the state; the implications for international relations theory, especially regime studies; on Antarctica and the

international community; and the future prospects for the ATS regime.

II. Sources and Documentation

This dissertation, like most literature on the Antarctic Treaty System, suffers from the paucity of primary sources. As noted above, the work of the Antarctic Treaty System was marked by a high level of secrecy with regard to information about the Treaty Meetings and negotiations until the mid-1980s. This level of secrecy exceeds that of most other international diplomatic meetings, including arms control negotiations. It has been defended by ATS diplomats. Some have justified confidentiality as helping for acceptable compromises to be reached uninhibited by political considerations;[13] others have claimed that certain countries have "sensitivities" about the release of all information about negotiations.[14] Even governments which sought to establish a measure of openness in their domestic Antarctic policy processes were handicapped by an inability to break with the consensus on the confidentiality of all documents insisted on by some governments.[15]

However, since the mid-1980s the final reports of Antarctic Treaty Consultative Meetings have given more details about the deliberations, without however stating the individual positions taken by states. As well, all conference and information documents pertaining to past ATCMs have been progressively declassified. Nevertheless, in view of the large volume of documents submitted by governments to various meetings, their public accessibility has been restricted; considerable organization and publicity as to the contents of such documents may be needed prior to their use by scholars. However, one enterprising former Australian governmental official, W.M. Bush, has published sets of declassified documents of ATCMs of the 1980s, making them more accessible.[16] This followed his earlier three-volume edition of historical documents pertaining to Antarctica.[17]

This dissertation draws heavily on available primary sources

published in English. These involve the final reports of ATCMs; the reports of the Commission and Scientific Committee of the Convention on the Conservation of Antarctic Marine Living Resources; the publications of declassified documents by Bush; publications of the Scientific Committee on Antarctic Research (SCAR) - the advisory body to the Antarctic Treaty Consultative Meetings constituting scientific and technical experts from the states involved in Antarctic research; and United States and Australian government publications. The thesis also draws on the work of Antarctic diplomats writing in their private capacities. In addition the author was greatly assisted by a series of interviews conducted with United States government officials, scientists and NGO representatives which provided insights into the Madrid Protocol negotiations.

A most invaluable primary source has been the documents published by environmental NGOs. To a large extent these have filled the vacuum on information about the ATS especially on the political bargaining at Antarctic negotiations, the implementation of environmental policies, and the compliance of states with the rules. The permanent presence in Antarctica of Greenpeace International (1987-1991), in particular, generated substantive information on the enforcement aspects of the ATS. Also the writings of representatives of environmental NGOs, through experience gained at various diplomatic fora, provide some useful insights into the workings of the regime. Indeed, the increased availability of information on the ATS can largely be attributed to the involvement of environmental NGOs in Antarctic issues, and to the criticisms raised at the United Nations by some developing states in the 1980s which linked ATS secrecy to what they perceived as the exclusivity and elitism of the "Antarctic Club."

The thesis has also benefitted from the expanded media coverage of Antarctic environmental issues in the post-1989 period, which has also been influenced in part by the growing involvement of NGOs. Finally, the dissertation has also made use of secondary sources, especially in

relation to the political history of Antarctica.

Notes for Introduction

1. The scientific value of Antarctic for global environmental monitoring was best exemplified by the discovery of the depletion of the stratospheric ozone layer over the continent. See Farman, Gardiner and Shanklin [British Antarctic Survey] (1985) "Large Losses of Total Ozone in Antarctica Reveal Seasonal ClOx/NOx Interaction" in *Nature* Vol. 315, pp. 207-10; see also United States. Congress. Senate. Committee on Commerce, Science and Transportation (1991), *Monitoring the Arctic and Antarctic Environments*, Hearing (S.Hrg. 102-556), May 13, 102nd Cong., 1st Sess.

2. Luard (1984), "Who Owns the Antarctic?" in *Foreign Affairs* Vol. 62, pp. 1175-93.

3. Orrego Vicuña [ed] (1983), *Antarctic Resources Policy: Scientific, Legal and Political Issues*; Westermeyer (1984), *The Politics of Mineral Resource Development in Antarctica: Alternative Regimes for the Future*; Shapley (1985), *The Seventh Continent: Antarctica in a Resource Age*; Orrego Vicuña (1988), *Antarctic Mineral Exploitation: The Emerging Legal Framework*. On the possible application of the common heritage concept to Antarctic resource exploitation, see Hamza (1985), "Antarctica and the New International Regime" in *Asia Pacific Community* Vol. 30, pp. 108-18 and Zorn (1984), "Antarctic Minerals: A Common Heritage Approach" in *Resources Policy*, Vol. 10, pp. 2-18.

4. See for example, Lewis (1965), *A Continent for Science: The Antarctic Adventure*; Quigg (1983), *A Pole Apart: The Emerging Issue of Antarctica*; and Peterson (1988), *Managing the Frozen South: The Creation and Evolution of the Antarctic Treaty System*.

5. Deutsch (1977), "Epilogue: Some Problems and Prospects of Ecopolitical Research" in Deutsch [ed], *Ecosocial Systems and Ecopolitics: A Reader on Human and Social Implications of Environmental Management in Developing Countries*, p. 359.

6. Davis (1986), "Background to the Present Situation" in Millar [ed], *Australia, Britain and Antarctica*, p. 13.

7. Krasner (1983), Structural Causes and Regime Consequences: Regimes as Intervening Variables" in Krasner [ed], *International Regimes*, p. 2.

8. See Young (1989), *International Cooperation: Building Regimes for Natural Resources and the Environment*.

9. Susskind and Ozawa (1992), "Negotiating More Effective International Environmental Agreements," in Hurrell and Kingsbury [eds], *International Politics of the Environment: Actors, Interests and Institutions*, p. 143.

10. Sand [ed] (1992), *The Effectiveness of International Environmental Agreements: A Survey of Existing Legal Instruments*, Prepared for the United Nations Conference on Environment and Development.

11. Ibid., p. 148.

12. Haggard and Simmons (1987), "Theories of International Regimes" in *International Organization* Vol. 41, p. 513.

13. Comment by Roberto Guyer, an Argentine diplomat. Guyer (1973), "The Antarctic Treaty System" in *Recueil des Cours de l'Academie de Droit International* Vol. 139 (II), p. 189.

14. See comments of Australian diplomat Ian Nicholson. Nicholson (1984), "Comments" in Harris [ed], *Australia's Antarctic Policy Options*, CRES Monograph No. 11, p. 303.

15. See testimony of US Department of State in United States. Congress. Senate. Committee on Foreign Relations (1978), *Exploitation of Antarctic Resources*, Hearing, February 6, 95th Cong., 2nd Sess., pp. 27-9.

16. See e.g., Bush [ed] (1991) *Antarctica and International Law: A Collection of Inter-State and National Documents*, Booklets AT1-7.

17. Bush [ed] (1982); (1982); and (1988), *Antarctica and International Law: A Collection of Inter-State and National Documents*, Vols. I-III.

Chapter 1 Antarctic Politics in Historical Perspective: From the Earliest Explorations to 1945

I. Introduction

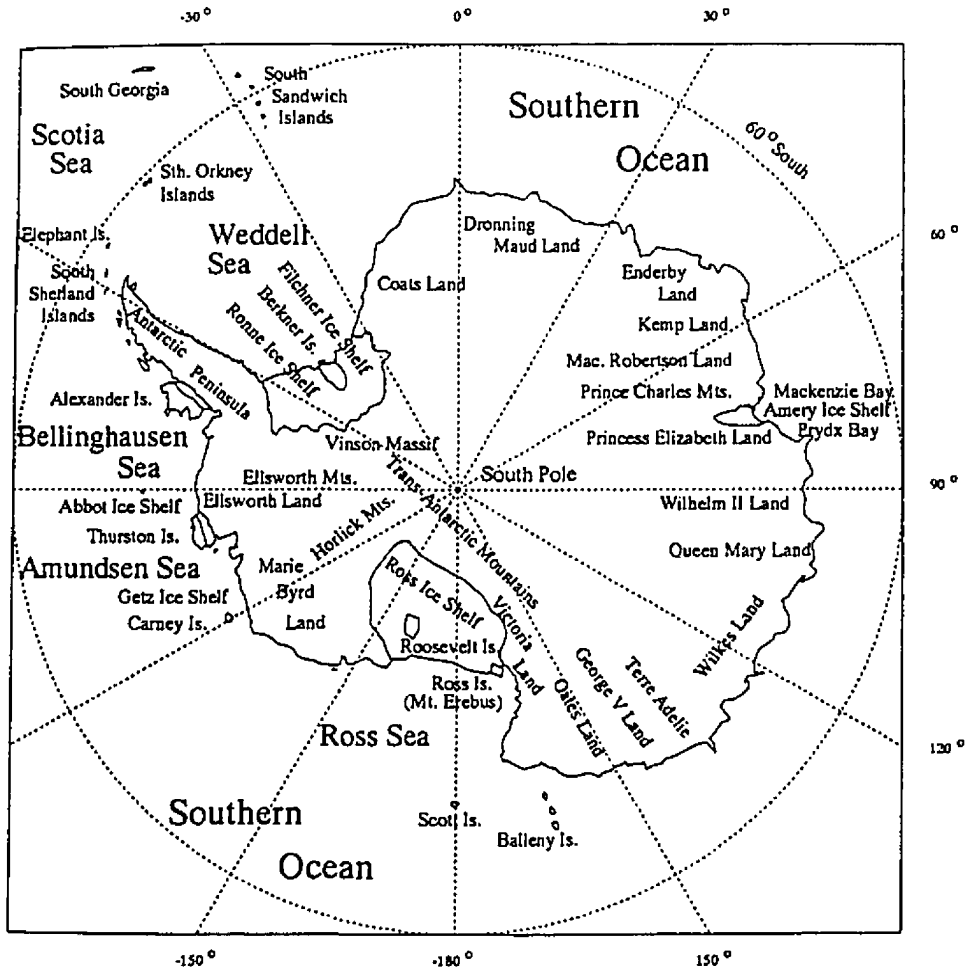
Antarctica's current international political and legal status has been shaped by its history. The political characteristics of the Antarctic Treaty System have evolved out of a historical experience involving the development of the competitive nation-state system, the quest for colonies, resources and strategic advantages, a territorial rivalry with potential for armed conflict, and the ability of multinational scientific research to serve the cause of peace by containing competing national interests.

The Southern Ocean which surrounds Antarctica has played a major role in the political history of the continent. The stormiest and most ice-infested stretch of water in the world, it acted as a barrier to the discovery of Antarctica until the early 19th century. The separate political histories of the ocean and the continent are nevertheless inextricably linked by their geographic proximity.

This chapter will aim to identify the major characteristics in the political history of Antarctica and the Southern Ocean up to the end of World War II. The political history of Antarctica until 1945 can be categorized into three distinct periods: (i) The Age of Exploration: 1770-1841; (ii) The Age of Heroic Exploration: 1894-1914; and (iii) The Age of Nationalism: 1915-1945.

Map 1

Antarctica: seas, islands, lands and ranges



Source: Suter, K. (1991), Antarctica: Private Property or Public Heritage? (London: Zed Press).

II. The Age of Exploration (1770-1841)

The first wave of Antarctic exploration was motivated by the joint imperatives of the competitive quest for colonies and resources, and curiosity about the unknown world among the European states. The Industrial Revolution witnessed major advances in science and technology which provided a major impetus to seafaring. The need to discover new sources of industrial raw materials to sustain domestic production, and to acquire and control such sources in order to forestall rivals, were powerful factors driving exploration. At the same time there emerged a conception of progress that gave humankind dominion over the natural world with rights to explore and exploit its resources.[1] Scientific investigations went hand-in-hand with exploration, and were motivated by the need to advance knowledge and understanding of Antarctica as well as the quest for commercial profits derived from exploitation of resources. Another major motivation was the search for personal fame and adventure on the part of explorer. This factor also had implications for national prestige and rivalry because governments used the acts of their nationals to strengthen claims to Antarctic territory or to carve out spheres of influence.

These motivations and influencing factors were evident in the epic voyages of the British explorer Captain James Cook. He not only received funding from the Royal Society for his pursuit of new knowledge,[2] but also sealed orders from the Lords of the British Admiralty instructing him to claim the still mythical southern continent for the Crown.[3] Thus Cook was ordered to collect and bring home samples of any minerals or valuable stones found in Antarctica by him for scientific investigations, and to take possession of the continent (if uninhabited) for the Crown by setting up proper "[m]arks & [i]nscriptions as first Discoverers & Possessors."[4] Following the news of the landing of the French expedition of Yves-Joseph Kerguelen on the sub-Antarctic island named after him in 1772, the

Admiralty was keen to forestall France from making further inroads into what was assumed to be a resource -rich southern continent.

Although he failed to discover Antarctica Cook took possession of South Georgia island for King George III in 1775.[5] The British government subsequently used Cook's act and his voyages to emphasize its Antarctic role and strengthen its claim to Antarctic territories.[6] The scientific investigations carried out during Cook's expeditions revealed the rich marine life of the Southern Ocean. Despite his prediction that "the world will not be benefitted by [Antarctica],"[7] commercial interest in the region had already been spurred. The surge of sealers from Europe and North America resulted in such destructive overexploitation that by 1830 the southern fur seal stocks were virtually extinct.[8]

The development of commercial interests and the rapid decline in seal populations provided a further impetus for the search for the Antarctic continent as sealers were forced to probe further south in quest of fresh hunting grounds. The blending of commerce and national prestige was actively encouraged by the British sealing company Enderby Brothers. It led to the discovery of several sub-Antarctic islands in the early 19th century.[9] By 1821 the United States, Britain and Russia had invested considerable national prestige in sighting the elusive continent. The US sealing captain Nathaniel Palmer, the British naval officer, Edward Bransfield, and the Russian admiral and explorer, Baron Thaddeus von Bellingshausen, all competed for the title of the first man to sight the continent. Although the priority and timing of their discoveries is disputed, Bellingshausen is generally credited with this achievement.[10]

The developing mix of strategic, commercial, scientific interests in the region were evident in national expeditions sent by France (led by Dumont D'Urville), the US (led by Charles Wilkes) and Britain (led by James Clark Ross) in the period 1835-41. All three discovered some of the more remote regions of the Antarctic coastline without actually setting foot on the continent. Moreover, the remote and inhospitable environment

did not permit the discovery of any minerals or hydrocarbons. Following this period interest in Antarctic exploration ebbed until the end of the century. More pressing commitments in the quest for colonies and resources in India and Africa for the European powers, and the Civil War that consumed much of the United States' energies at home, resulted in a half century of neglect of Antarctica.

III. The Age of Heroic Exploration (1894-1914)

The second wave of interest in Antarctic exploration began at the turn of the 20th century and was generated by the designation of Antarctica as the main region of research and exploration by the International Geographical Congress in 1895.[11] This new era was marked by the success achieved in finally landing men on the continent and the introduction of modern polar scientific research. More significantly, it was marked by personal acts of heroism, fortitude and endurance by explorers in their competition to finally reach the centre of the continent, the South Pole, the crowning achievement of Antarctic exploration. The series of daring expeditions that were undertaken captured the popular imagination and support of governments in the countries concerned and underscored the national prestige that was at stake. This was epitomized in the so-called "Race to the Pole" between the Norwegian expedition led by Roald Amundsen and the British expedition of Robert Falcon Scott in 1911-12.

The Heroic Age also witnessed the revival of commercial interests in Antarctica. With the growing geological knowledge of Antarctica, the prestige value of expeditions was enhanced by the possibilities for discovery and acquisition of minerals. Almost every expedition was entrusted with the task of collecting and bringing home rock samples for analysis. Sometimes this had tragic consequences. For example, it has been suggested that members of Captain Scott's expedition, after losing the

"Race to the Pole," also lost their lives because they were unable to reach the safety of their base camp before the onset of the Antarctic winter, and were further slowed by the burden of carrying the rock samples they had collected on their sledge.[12]

The other area of commercial interest was the whaling industry. This also had major political implications. The over-exploitation of the Southern Ocean's whales and the decline in the price of whale oil led to the British government issuing licences and collecting fees from whale station operators within its Falkland Islands Dependencies Survey (which included South Georgia, South Shetland and South Orkney Islands). The regulation of commercial whaling proved difficult, however, in view of the advances in technology and the freedom of the high seas in effect in the area of the Antarctic Peninsula. The advent of mobile factory ships that were able to process whales at sea enabled whalers to avoid regulations on land.[13]

A direct outcome of the attempt to control overharvesting of whales led Britain to make the first national claim to Antarctic territory in 1908.[14] The claim provided Britain with a sphere of influence on the continent and left an indelible imprint on Antarctic politics, especially as other European powers felt their interests in the region had been threatened.

The scientific research carried out during the Heroic Age, while contributing to the enhancement of knowledge of a continent which had up to then been virtually unknown, also provided several European and Southern hemispheric countries with opportunities to establish a polar tradition and a presence in Antarctica. Belgium, Germany, Australia, New Zealand, and Japan, all of which developed interests in the continent during this period, along with the established powers (the UK, France and Norway) all braced themselves for an impending nationalist rivalry. They were also to be joined by the US and Russia, whose interests were dormant for long periods, as well as by Argentina and Chile, the states with

regional interests in Antarctica.

IV. The Age of Nationalism (1915-1945)

The age of heroic exploration stimulated nationalist rivalries in Antarctica and turned the continent into a bone of international political contention. The advances in polar technology and the use of oil as an energy source greatly influenced the size, scope and pace of Antarctic exploration and scientific investigation. The use of aircraft and icebreaker ships, mechanized ground vehicles, aerial photography, maps and charts, navigational aids, radio communications, and other technologies, marked a quantum leap from the earlier period associated with sailing ships, man-hauling, and dog sledges. Advances in science and medicine also provided for better nutrition and survival in the harsh polar environment. The technological dimension also raised considerably the international political, economic, and strategic stakes in Antarctica as states developed enhanced capabilities to access the continent and maintain a larger presence there. Another significant change was the increasing level of involvement of governments in Antarctic exploration. The size and scope of such operations, in terms of sponsorship, logistics and administration were increasingly beyond the means of wealthy individuals and private foundations. This was also a reflection of the perceived need for state control of exploration activity in the context of the intensified strategic competition for resources and colonies.

The new age of nationalism was marked by the re-entry of the United States into Antarctic exploration. It was primarily responsible for revolutionizing polar exploratory technology, particularly by its use of aerial photography and mapping which resulted in large tracts of the vast interior of Antarctica being opened up to the world. The sheer magnitude of the areas covered by enterprising pilots such as Admiral Richard E. Byrd and Lincoln Ellsworth earned for the US the dominant national

presence in Antarctica to match its emergence as a great power elsewhere in the world.[15]

The growing perception of Antarctica as an important region within the evolving global geostrategic and economic systems caused several states to claim sovereignty over wedge-shaped sectors of the continent in the first half of the twentieth century - a process which has been compared to the "scramble" for colonies in Africa during the 1880s.[16].

Britain had already set the trend prior to World War I through its assertion of a claim that included parts of the South American mainland belonging to Argentina and Chile. Protests by the latter two led to the redefinition of the British-controlled zone within the Falkland Islands Dependencies in 1917.[17] After it emerged from the war as the dominant power, British Antarctic policy was shaped by a grand design to exercise sovereignty gradually over the entire continent.[18] The policy was motivated by the desire to expand the British Empire to the southern reaches; by a need to control the Antarctic whaling industry, especially since whale oil had become a "strategic resource" during the First World War because of its use in the manufacture of explosives; by a fear of the potential war-time use of Antarctica for raids on British dependencies and dominions in the Southern Hemisphere; and by the possibilities of discovering minerals on the continent.[19] The policy was implemented in 1923 and 1933 by claiming large parts of the continent which were placed respectively under the administration of Britain's dominions in the Southern Hemisphere, New Zealand and Australia.[20]

The assertion of sovereignty over nearly two-thirds of Antarctica by Britain and her dominions exacerbated European national rivalries. In particular, France in 1924, not desiring to be squeezed out by Britain in territorial competition for colonies, laid claim to Terre Adelie on the basis of its discovery by d'Urville, and several Southern Ocean islands (Kerguelen, Crozet, New Amsterdam and St. Paul) where it had developed strong offshore fishing interests.[21]

Norway, which had considerable polar experience from its interests in the Arctic and which quickly developed considerable commercial whaling and exploratory interests in the Antarctic in the early 1900s, also decided to enter the competitive "land rush". Its insecurity stemmed from its rivalry with Britain over the "Race to the Pole" which Amundsen had won and the fear that its lucrative whaling industry was being stifled by British regulatory practices. A new threat in the form of German whaling and exploratory interests in Queen Maud Land, a Norwegian-discovered and -explored area of coastline between the British and Australian sectors, prompted Oslo to make a claim in 1939.[22]

The German intrusion into Antarctica in 1939 was primarily motivated by a desire to make a national claim and establish a base for whaling operations. Although it was pre-empted by the Norwegian proclamation, the German expedition carried out extensive mapping and surveys and left behind Nazi flags to support its claim.[23] Symbolically, the German incursion into Antarctica turned out to be a prelude to Hitler's invasions and annexations in Europe and North Africa that led to the Second World War.

German raids on Allied shipping and the capture of the Norwegian whaling fleet in the South Atlantic during the Second World War also highlighted the geostrategic importance of Antarctica. This motivated the states enjoying geographical proximity to Antarctica, Chile and Argentina, to enter the territorial competition. Thus, Chile in 1940 asserted sovereignty over a sector covering the Antarctic Peninsula and adjacent islands. The claim was based on the perception that the Peninsula guards the doorway of the Drake Strait which links the Pacific and Atlantic Oceans. It was also motivated by Chile's interest in commercial whaling and the desire to obtain a stake in any future mineral resource exploitation. Moreover, the Chilean claim was advanced on legal arguments. These included the rights inherited from Spain, the geographic and geological contiguity of Chile with the Antarctic Peninsula, scientific

factors involving climate and glaciological influences, and numerous administrative acts performed by Chile in the region reflecting sovereignty.[24]

Argentina's claim to Antarctic territory was also influenced by strategic considerations such as its traditional fear that the continent would become the monopoly of hostile European powers, its dispute with Britain over the sovereignty of the Falkland/Malvinas Islands and its regional rivalry with its neighbour Chile. Based on the assumption that the "Antartida Argentina" was an integral part of its metropolitan territory, the Argentine government made a series of official statements between 1940 and 1947 justifying its claim to part of the Antarctic Peninsula, and to the adjacent islands of South Orkney, South Shetland, South Georgia and the South Sandwich.[25] The Argentine Antarctic territory became an issue of national prestige and was inextricably linked to domestic politics. The government administered the territory as part of its national territory and viewed its development as a sovereign prerogative. As in the case of Chile, the claim was reinforced by legal concepts such as effective and continuous occupation of the former Scottish meteorological station at Laurie Island (in the South Orkneys) since 1904, the rights inherited from Spain, by geographical continuity and geological contiguity, the sector theory and the performance of various administrative acts.

In rekindling its Antarctic interests in the mid-1920s the United States, as an emerging global power, was faced with a policy dilemma: either join the political "land-rush" and make its own claim, or play the role of "spoiler" by refusing to recognize claims while reserving its own right to make a claim. In choosing the latter path Washington sought to deny any state sovereignty over Antarctic territory that would limit it access to the entire continent. Aided by the prevalent uncertainties and lack of criteria for the establishment of claims under international law in polar regions, the US challenged the principles under which the British

Empire and other European powers had asserted their titles to sovereignty over parts of Antarctica. This was evident in the 1924 statements of the then US Secretary of State, Charles E. Hughes, who enunciated that the principles of discovery and the formal taking of possession without "effective occupation" could not form a basis for claiming sovereignty, especially in polar regions where the harshness of the climate rendered settlement impossible. However, he also reserved the right of the US to make a claim to the entire Antarctic continent.[26] This policy, which came to be known as the Hughes Doctrine, in essence refused to recognize all Antarctic claims. It was to influence US Antarctic policy well into the post-World War II period.

Despite not staking a claim for Antarctic territory, the US policy of non-recognition was basically motivated by the imperial tenor of the age. The Hughes Doctrine, without divulging US policy goals in Antarctica, set a new standard (i. e., effective occupation) for advancing a claim, thereby undermining the claims of the other imperialist powers. Strategically, it enabled Washington to deny the advantages that would accrue to its rivals by a partitioning of the continent, particularly control of the uses and resources of national territories. Some scholars have considered the Hughes Doctrine as a major diplomatic coup for the US in terms of maintaining American access to all of Antarctica by denying recognition of claims by other countries. The policy enabled the US to consolidate its growing influence as the predominant power in Antarctica, extend into Antarctica its "open door" international order, and obtain guaranteed access to any future mineral resources from the entire Antarctic.[27]

Antarctica's potential minerals wealth was mostly a latent issue among the contending states. This was exemplified by the US Antarctic policy in the interwar period which perceived a possible Nazi German sphere of influence in Antarctica.[28] Thus, for example, in the formal instructions that were issued by President Roosevelt to Admiral Byrd[29] for

the command of the US Antarctic Service expedition in 1939, no mention was made of obtaining access to minerals, even though this objective had been privately communicated to him.[30] The expedition also was an attempt by the US to try to meet its own standard of "effective occupation" for claiming Antarctic territory through the establishment of permanent bases on the frozen continent in the event of a German takeover of Antarctica;[31] however, the mission had to be aborted when World War II broke out.

Up to now the major actors claiming a stake in Antarctica were the European and North American powers. In 1940, Japan marked its entry into the Great Power club by making a diplomatic protest to Chile about its claim, noting Japanese interests and rights in the area claimed by the latter.[32] Japan's decision was largely motivated by its own expanding imperial ambitions, especially its successful conquests in East Asia, which gave notice to the Antarctic powers of its capabilities.

Despite the territorial rivalries among the claimants no country had used or threatened the use of force in Antarctica. However, with the advent of the Second World War, the first signs of militarization of the continent emerged. Alarmed by the prospect of an Argentine assertion of title to the entire Falkland Islands Dependencies, Britain sent a naval expedition (Operation Tabarin 1943-45) to the Antarctic Peninsula to establish a permanent presence and remove all marks of Argentine and Chilean sovereignty.[33] With the increasing strategic stakes in Antarctica states were increasingly inclined to use force to secure their interests, and were determined to meet the legal requirement necessary for consolidating claims through the building of permanent bases.

Thus, by the end of the Second World War seven countries had laid claim to over five million square miles of Antarctic territory and adjacent islands (see Map 2). This constituted about 85 percent of the continent. All seven claimants firmly believed that international law permitted them to consider Antarctica as *terra nullius* (i.e., land which has no owner), and hence subject to appropriation by the first state to

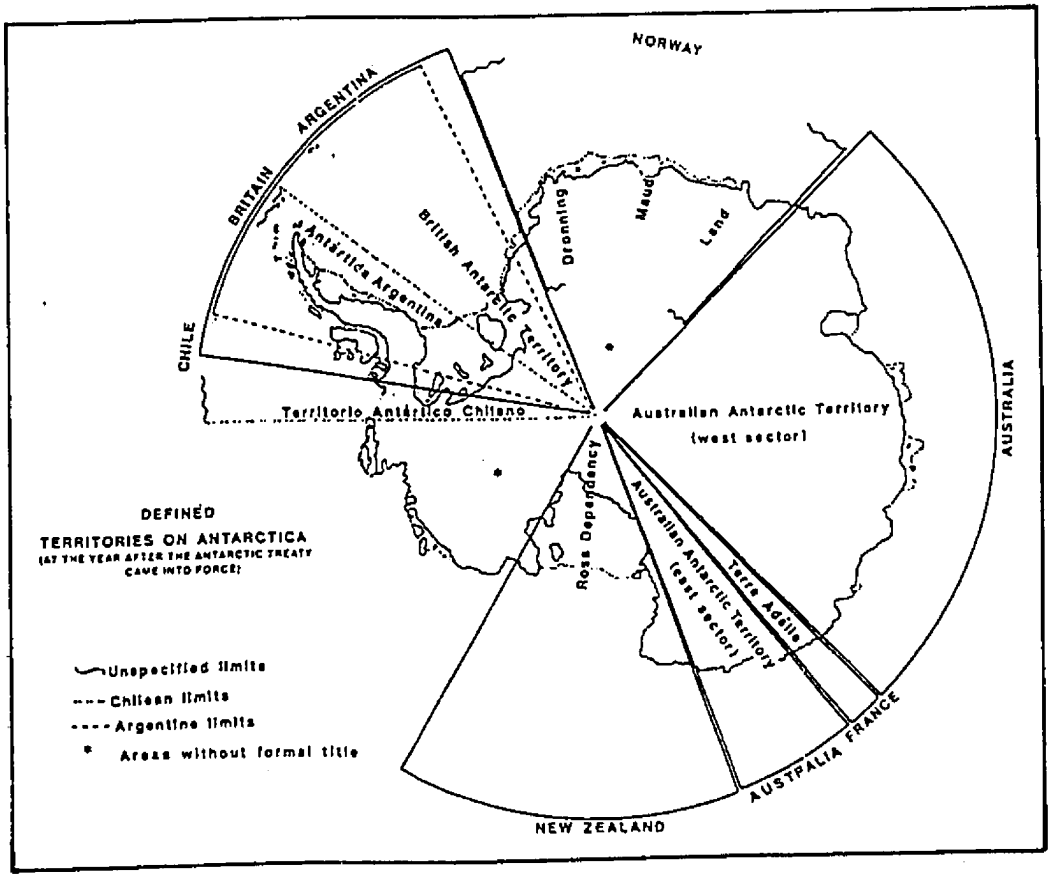
discover or occupy it just as European states had laid claim to much of Africa. Territorial rivalry was most acute between Britain, Argentina and Chile, whose claims overlapped. The Chilean and Argentine claims were designed to deny each others' and Britain's claims. Although there were initial problems involving the claims of Australia, France and Britain as well as those of Norway and Britain, they were worked out through a system of mutual recognition. In 1938 Britain, Australia, New Zealand and France granted mutual recognition to their claims through an agreement on overflight.[34] The following year Britain and the Dominions and Norway formally recognized each others' claims.[35] The mutual recognitions stemmed largely from the events in Europe leading up to the Second World War, the threats posed by Nazi Germany to metropolitan Britain and France, and the German incursion into the Norwegian claim of Queen Maud Land. However, with the exception of Argentina and Chile, all other Antarctic states temporarily suspended their exploration activities during World War II.

V. Conclusion

The main characteristics of Antarctica's political history have been shaped by the strategic, political and economic systems of the 18th and 19th centuries. Much of the exploration of the continent was spurred by the competitive quest for colonies and industrial raw materials in the European states. A persistent pattern in this process was the perception of Antarctica as a mineral-rich region that needed to be acquired for its future potential or as a means of denying its use by rivals. While the early explorers sought personal prestige and adventure and were largely privately funded, they were nevertheless covertly encouraged to claim territory on behalf of their governments and to collect geological samples for analysis. The intensified strategic competition at the turn of the 20th century necessitated government control of exploration. Interest in minerals became a somewhat ambivalent but nevertheless latent policy goal.

Map 2

Map of Antarctica showing territorial claims



Source: Cook, G. ed., (1990), The Future of Antarctica: Exploitation versus Preservation (Manchester: Manchester University Press).

Notes for Chapter 1

1. Mickleburg (1987), *Beyond the Frozen Sea: Visions of Antarctica*, pp. 11-3.

2. Debenham (1959), *Antarctica: The Story of a Continent*, p. 35.

3. See "Admiralty Instructions to Captain James Cook R.N." in Bush [ed] (1988), *Antarctica and International Law: A Collection of Interstate and National Documents*, Vol. III, Doc. UK17011775, p. 221.

4. See "The Instructions By the Commissioners for executing the Office of Lord High Admiral of Great Britain & Ireland & c$_{a}$" in Beaglehole [ed] (1961) *The Journals of Captain Cook on His Voyages of Discovery: Vol. II: The Voyage of the Resolution* and the *Adventure*, 1772-1775, pp. clxvii-clxviii.

5. See "Account of Captain James Cook R.N. Taking Possession of South Georgia Island" in Bush [ed] (1988), Doc. UK 17011775, p. 221.

6. See, "British Application Instituting Proceedings Against the Argentine Republic Before the International Court of Justice" (1955) in Bush [ed] (1988), Doc. UK051955A, pp. 329-31.

7. Cook (1777), *A Voyage Towards the South Pole, and Round the World. Performed in His Majesty's Ships the Resolution and Adventure in the Years 1772, 1773, 1774, and 1775*, Vol. 2, p. 243.

8. Moorehead (1966), *The Fatal Impact: An Account of the Invasion of the South Pacific 1767-1840*, pp. 195-96.

9. Kearns and Britton (1955), *The Silent Continent*, pp. 36-48.

10. United Nations. General Assembly (1984), *Question of Antarctica: Report of the Secretary General*, Vol. III (2), Doc. A/39/583, p. 80.

11. Sullivan (1957), *Quest for a Continent*, p. 35.

12. Huntford (1985), *The Last Place on Earth*, p. 485.

13. Slipjer (1962), *Whales*, A.J. Pomerans [tr], p. 34; Tonnessen and Johnsen (1982), *The History of Whaling*, pp. 157-182.

14. See "Letters Patent Providing for the Government of the Falkland (Malvinas) Islands Dependencies" in Bush [ed] (1988), Doc. UK21071908, pp. 251-54.

15. For an extensive description of US exploration in Antarctica see, Bertrand (1971), *Americans in Antarctica, 1775-1948*.

16. Henrikson (1986), "The Last Place on Earth, The First Place in Heaven," in *Imagining Antarctica, Antarktis - Vorstellung und Wirklichkeit*, p. 12.

17. See "Letters Patent Providing for the Further Definition and Administration of the Falkland (Malvinas) Islands Dependencies" in Bush [ed] (1988), Doc. UK28031917, pp. 264-65. The British intention was to establish the geometrical pattern of the "sector principle" for all future claims to territory in Antarctica.

18. "Report of the Committee Appointed by the Imperial Conference 1926 to Consider British Policy in the Antarctic" in Bush [ed] (1982b), pp. 100-04; see also Beck (1983), "Securing The Dominant 'Place in The Wan Antarctic Sun' For The British Empire: The Policy of Extending British Control Over Antarctica" in *Australian Journal of Politics and History* Vol. 29, p. 448-61.

19. The geographer of the US Department of State (Samuel Boggs) in a paper written in 1933 on a possible solution to the rapidly evolving territorial dispute commented that "[p]ractically all, if not all, of the mineral resources of Antarctica which have thus far been discovered are found in the sectors which have been claimed by Great Britain." The paper was discovered in 1988. See Boggs (1990), *The Polar Regions: Geographical and Historical Data for Consideration in a Study of Claims to Sovereignty in the Arctic and Antarctic Regions*, p. 12.

20. See "Order in Council Under the British Settlements Act, (1887) Providing for the Government of the Ross Dependency", in Bush [ed] (1988), Doc. NZ30071923, pp. 44-5; "Order in Council Placing Certain Territory in the Antarctic Seas Under the Authority of the Commonwealth of Australia" in Bush (1982b), *Antarctica and International Law: A Collection of Inter-state and National Documents*, Vol. II, Doc. AU07021933, pp. 142-43.

21. "Report of the Minister of Colonies Concerning the Administration of French Antarctic Territories" in Ibid., Doc. FR21111924, pp. 491-3.

22. See "Royal Proclamation Defining the Area of Norwegian Sovereignty in Antarctica" in Bush [ed] (1988), Doc. NW14011939D, p. 149.

23. Grattan (1963), *The Southwest Pacific Since 1900: A Modern History: Australia, New Zealand, The Islands, Antarctica*, pp. 652-3.

24. See "Speech Concerning the Grounds of Chile's Claim to Antarctica Delivered to the Senate by the Minister for Foreign Affairs, Raul Juliet Gomez" in Bush [ed] (1982b), Doc. CH21011947, pp. 334-67.

25. See "Argentine Foreign Minister to Chilean Ambassador, Buenos Aires (1940)" and "Argentine Foreign Minister to British Ambassador, Buenos Aires (1947)" in Bush [ed] (1982a), *Antarctica and International Law: A Collection of Inter-state and National Documents*, Vol. I, Docs. AR12111940 and AR15021947, pp. 606-10; 633-36.

26. See "Refusal by the Secretary of State to Admit that Rights of Sovereignty Over Polar Areas May be Based on the Formality of Taking Possession After Discovery" in United States Department of State (1939), *Foreign Relations of the United States 1924*, Vol. II, pp. 519-20; and "Letter from the Secretary of State to A.W. Prescott Concerning the Claims of Other Countries to Antarctica and the American Attitude to Them" in Bush [ed] (1988), Doc. US13051924, pp. 430-33.

27. Hall (1989) "The *Open Door* into Antarctica: An Explanation to the Hughes Doctrine" in *Polar Record* Vol. 25, pp. 137-40.

28. *New York Times* (1939), "President Directs Speed on Byrd Trip: Germany's Moves in Antarctica Spur Action to Validate Our Territorial Claims There" July 8, p. 17.

29. Byrd himself lobbied Congress on the need for the US to act quickly to protect its mineral rights in the Antarctic. *New York Times* (1939), "Byrd Urges We Guard Rights in Antarctic" June 3, p. 2.

30. Cf. "President Roosevelt to the Commanding Officer of the United States Antarctic Service (Byrd)" in United States. Department of State (1956), *Foreign Relations of the United States, 1939*, Vol. II, pp. 11-4; and Roosevelt [ed] (1950), *F.D.R.: His Personal Letters: 1928-1945*, Vol. 4, p. 906.

31. See "Letter From Under-Secretary of State to the President Urging a More Active Policy of the United States in the Way of Asserting Claims" in Bush [ed] (1988), Doc. US06011939, pp. 440-42.

32. See "Chilean Note to Japan Refusing to Accept the Reservation of Rights Which Japan Made in Relation to the Chilean Decree of 6 November 1940" in Bush [ed] (1982b), pp. 317-8.

33. Beck (1986), *The International Politics of Antarctica*, pp. 31-3.

34. See "Exchange of Notes Between His Majesty's Government in the United Kingdom, the Commonwealth of Australia and the French Government Regarding Aerial Navigation in the Antarctic, Paris" in Bush [ed] (1982b), Doc. FR25101938, pp. 508-9.

35. See "Royal Decree Endorsing a Draft Proclamation Concerning Antarctica And Providing for the Regulation for the Area Claimed" and "British Note to Norway Recognizing the Norwegian Claim and Suggesting the 20th Degree West Longitude as Its Western Boundary", in Bush [ed] (1988), Docs. NW14011939B & NW01091939, pp. 147 & 154.

Chapter 2 The Origins of the Antarctic Treaty 1946-1959

I. Introduction

By 1945 the frozen continent was being perceived as an important region within the post Word-War II international geostrategic and economic order. Antarctic politics in the post-war period were increasingly influenced by super-power rivalry and by the regional territorial rivalry between the UK, Argentina and Chile. National prestige, power politics and resource interests were threatening to militarize the region. This chapter will trace the main sources of the Antarctic Treaty that diffused the tensions in the region.

II. The Dominance of Strategic Interests

The Anglo-Argentine dispute was significant not least because of its inextricable link to conflicting claims outside the region, i.e., to the Falkland/Malvinas Islands. Argentina's insisted on its incontrovertible title to the islands.[1] Prestige and the desire to project power were also evidenced in the performance, by all three, of symbolic acts such as the establishment of bases, the issue of postage stamps, visits by high ranking officials, and the sending of warships to Antarctic waters.[2] Chile and Argentina also formed a common front against Britain, declaring a South American Antarctic zone within which only they held sovereign rights.[3] They also tried to obtain the diplomatic and military support of the US under the Interamerican Treaty of Reciprocal Assistance (the Rio Pact), arguing that the British presence in the Antarctic Peninsula was a violation of the Treaty's purpose of keeping out non-Western Hemispheric powers.[4] Both countries also spurned a British proposal to submit their dispute to the International Court of Justice for a definitive judgement in 1947.[5] The escalating tension finally boiled over into hostilities

between Argentine and British personnel at Hope Bay in 1952.[6] Although there were no casualties in the shooting incident, it highlighted the potential for armed conflict arising from the overlapping claims.

As the predominant power in Antarctica, the US in the post-1945 period was motivated by strategic and political considerations as much as by resource factors. Its Antarctic policy was driven largely by its emerging Cold War rivalry with the Soviet Union. In 1946-47 Washington dispatched the largest ever Antarctic expedition, named "Operation High Jump." This involved military manoeuvres designed to obtain experience in polar warfare in anticipation of a possible confrontation with the USSR across the Arctic Ocean. Politically, it was intended to strengthen the US claim to the largest accessible area on the continent.[7]

In light of these escalating tensions, internationalization of Antarctica was perceived as a possible conflict resolution mechanism. The first formal proposal came from a non-governmental organization (the Women's International League for Peace and Freedom) which petitioned the UN Trusteeship Council in 1947 advocating the polar regions be administered under a UN mandate. However, the Council took no action, considering the matter as not within its competence.[8]

The idea of an international administration also influenced several other proposals. The US, desiring to avoid an open split in the Western bloc over the Anglo-Argentine-Chilean friction, proposed a Western-dominated (i.e., the seven claimants plus the US) UN trusteeship administration for the continent. Alternatively, a condominium merging all claims with looser links to UN agencies was proposed.[9] A specific policy objective of the US proposals was to deny the Soviets participation in any future Antarctic regime.[10] The trusteeship proposal was rejected by Britain on the grounds that it would necessarily allow for a Soviet role and would dilute the validity of its claim.[11] Both proposals were also summarily rejected by Chile and Argentina who considered them to be interventions in "their" national territories.[12] Several governments also

opposed the trusteeship proposals arguing that the concept was designed to provide for a transition to self-government for colonized or dependent peoples and not for the indefinite administration of uninhabited territories such as Antarctica.

The rivalry also had a resource dimension to it. US proposals to resolve the territorial dispute were in part influenced by the need to deny the USSR access to Antarctica's potential minerals. The growing strategic significance of uranium as a raw material in both the military and civilian applications of nuclear energy, and its possible existence in Antarctica, was seen as an incentive for a "polar race."[13] The US interest in uranium and other mineral resources was actively promoted in the domestic arena by both influential private citizens and by resource-related government agencies. The former sought unilateral US action[14] while the latter advocated a collective multilateral effort among US allies to secure Western access to Antarctic resources.[15]

The restrictive regime envisioned by the US and its allies engendered protests from the Soviet Union which had begun to revive interests in Antarctica that it had inherited from the Czarist Russian state. Motivated by considerations of national prestige, the Soviet government expressed its concern about the future of Antarctica in 1949, through both unofficial and official channels.[16] The growing capacity of the Soviet Union to play a global role became evident in its diplomatic memorandum to Western governments in 1950 which asserted its right to participate in any negotiations on a regime for Antarctica. It based this right on the exploration, whaling and scientific activities conducted by Russians in the Antarctic and threatened to use its new found superpower status to veto any solution obtained without the Soviet Union's participation.[17] The Soviet action effectively brought Cold War tensions to Antarctica.

As a counterproposal to the US plan for internationalization, Chile advocated an interim conflict resolution mechanism in 1948. What became

known as the "Escudero Declaration" (named after its author Julio Escudero Guzman, a former legal advisor and then unofficial consultant to the Chilean Foreign Ministry), the proposal called for a *modus vivendi* arrangement; it sought to apply a "freeze" or moratorium on all existing claims and rights in Antarctica for a limited period of five or more years, during which parties would exchange scientific data and work toward a final settlement. Free entry for scientific bases and expeditions would be guaranteed, but such activities could not be used for asserting or supporting new territorial claims.[18] The Chilean proposal was mainly intended to prevent any new activities in its claimed sector from undermining its own claim.

The US, by now concerned about possible Soviet expansionism, sought to build on the Chilean proposal in an attempt to create a regime dominated by the Western alliance. A 1949 US declaration proposed a moratorium on claims, guaranteed access to interested states for exploration and scientific research, and a measure of information exchange through a coordination committee.[19] It accorded well with the interests of the claimants who retained most of their rights. However, the bargaining process among Washington's partners was slowed down by amendments to the original declaration and with the outbreak of the Korean War, the negotiations were abandoned.[20] Nevertheless, the Chilean proposal of 1948 established the minimum conditions that the South American claimants were prepared to accept for an international settlement of the Antarctic problem. At the same time the Western powers were keen to prevent any new claims that would complicate a future settlement; this was partly evident in the renunciation by Japan of all its rights to claim territory in Antarctica under the 1951 San Francisco Treaty of Peace with the Western bloc.[21]

In the early 1950s the escalation of the cold war prompted the US to rethink its Antarctic strategy. By 1954 President Eisenhower had decided that the US itself should seek to assert undefined "rights" in the region

and vigorously pursue diplomatic efforts at securing an agreement to the claims dispute among "friendly powers." However, the policy goal of excluding the Soviet Union from the future Antarctic regime remained intact. At the same time the principles of freedom of exploration and scientific investigation, and access to natural resources discovered in Antarctica - goals that were defined by the Hughes Doctrine - were also strongly reiterated due to the fear of a possible Soviet claim in the unclaimed sector of Antarctica (i.e., the area known as Marie Byrd Land, where US explorers had been most active). These goals were to be attained through a heightened US presence on the continent, by establishing permanent bases and sending periodic expeditions, and through an emphasis on the purely scientific nature of the activities. All this was to be buttressed by the aid to be provided to the planned International Geophysical Year in 1957-58.[22]

Anglo-Argentine skirmishes on and around the Antarctic Peninsula and increasing superpower rivalry caused other countries to propose internationalization as a solution to the Antarctic territorial dispute. For example, the idea of a UN trusteeship mandate was revived in 1956 by New Zealand; it proposed the abandonment of all claims to the continent.[23] However, by now the Latin American claimants in particular had put too much prestige value in their claims to agree to their surrender. Even the possibility of an Antarctic condominium among the major actors linked to the UN (as contained in an UK proposal) was rejected by Argentina.[24]

The emergence of new actors in the global arena also favoured an international adminstration for the continent. However, newly independent states without active interests in the continent had minimal capacity to significantly influence the course of Antarctic diplomacy. This was evident in the failure of the UN to debate proposals put forward by India in 1956 and 1958.[25] Moreover, the influence of the cold war on Antarctic politics also did not favour a UN solution, as some of the claimants were concerned that it would provide a means for Soviet intervention in their

activities. Some, like Australia, became increasingly concerned about the presence of the Soviet Union's scientific research stations erected within the Australian Antarctic Territory in preparation for the IGY.[26] In sum, the dominance of geo-strategic perceptions of Antarctica in the post-World War II period were not conducive for an international solution to the problem of Antarctica.

III. The International Geophysical Year: The Formalization of Science-Politics Linkages

Against this background of escalating tension and stalled diplomatic initiatives, developments in the fields of international science in the mid-1950s came to influence Antarctic politics. Plans for a globally coordinated research project focussing on the polar regions were developed in scientific circles, particularly the International Council of Scientific Unions (ICSU), a federation representing the world's principal scientific institutions. It was assumed that East-West scientific contacts resulting from the International Geophysical Year (IGY) could potentially defuse the political and strategic rivalry.[27]

Although science has played a major role in the political history of Antarctica it did not attain the prominence that the IGY was to bestow upon it. The need to generate knowledge and understanding of Antarctica had been part of exploration since earliest times, but much of that information had been utilized for the pursuit of imperial, commercial, strategic, resource or political interests; for example, the surge of sealers to the Southern Ocean after Cook's reports on the abundance of the resource; the struggle for the control of the whaling grounds; the use of mapping to enhance national visibility and prestige; and the siting of bases to reinforce or devalue national claims.

The IGY established for the first time a system of internationally agreed informal rules to guide states in their activities in Antarctica.

These rules were established by the first IGY planning conference held in Paris in July 1955 and came to be known as the "gentlemen's agreement." The states, which were represented mostly by scientists, agreed that all activity would be of an exclusively scientific nature separate from political and sovereignty questions, and that the location of some scientific bases would not have any legal or political significance. However, Argentina and Chile added their own caveats by declaring that the consensus on base siting was only a temporary measure and would not modify their existing claims in Antarctica.[28] Another rule that was created was the mandatory exchange of scientific data gathered during the IGY. The international dissemination of such data was vital to the building of trust among the participants so that no one engaged in the misuse of such knowledge for commercial, national security or other purposes.[29] Similarly, the provision made for the exchange of personnel between stations contributed immeasurably to US-Soviet confidence building within the cold war framework.[30] These informal rules were modelled on the Chilean-US proposals of 1948 and implicitly established a moratorium on claims while scientific research proceeded unimpeded. They also established precedents for the conduct of activities in Antarctica and were to have a major influence during the drafting of the Antarctic Treaty.

The eighteen-month period (July 1, 1957 to December 31, 1958) of scientific cooperation during the IGY proved extremely successful. Twelve nations (i.e., the seven claimants, Argentina, Australia, Chile, France, New Zealand, Norway, and the UK, plus Belgium, Japan, South Africa, the Soviet Union and the United States) conducted research at sixty different stations both on the Antarctic continent as well as on the adjacent islands.

One of the major questions faced by the scientists organizing the IGY was whether or not to invite the Soviet Union to participate. In view of the ground rules established for the IGY, the purely scientific nature

of the endeavour, and the high degree of cooperation necessary to achieve its goals, Soviet participation became inevitable. Its size, capabilities and influence as an emerging nuclear power was seen by the ICSU as indispensable for the success of the IGY.[31] Politically, the IGY recognized the Soviet Union's post-1945 status as a superpower and rendered futile the attempts of the Western bloc to exclude it from the deliberations concerning the future of Antarctica.

However, despite all the official pronouncements about the strictly apolitical nature of the scientific research, the IGY clearly established the linkage between science and politics in Antarctica. These links can be discussed under the following categories, all of which were given priority by the twelve states which actively participated in scientific research on the continent: permanent national presence; logistical capabilities; and scientific data and the role of scientists.

Permanent National Presence

States gave considerable weight to the establishment of a permanent national presence in Antarctica. The stations established during the IGY were seen as enhancing national prestige. Both the US and USSR, influenced by the Cold War rivalry, made large investments in strategically located, large, permanently-manned bases. The Soviet bases were concentrated in the sector claimed by Australia, in order to have access to the "Pole of Inaccessibility"; but their appearance of permanence and relative proximity to the southern approaches to Australia was a lingering issue between the two countries.[32] The US base at the South Pole had considerable political symbolism due to the fact that all the claimed sectors converged at the South Pole. This effectively provided Washington with a presence in each territorial claim, which favoured its political position of non-recognition of claims and reservation of all rights to the entire continent.[33] By operating in remote and hazardous regions of

Antarctica, the superpowers were able to demonstrate their ability to establish a presence anywhere on the continent. Their actions were also motivated by the more general perception that a permanent presence would give states the capacity to influence any future political negotiations on the future of Antarctica.[34]

The linkage between a state's presence and its position on sovereignty as reflected in its maps of Antarctica were also evident in debates over the official map for the IGY. Claimants refused to accept each others' maps displaying their versions of claims. The US version lacking these demarcations was initially criticized as representing its official policy of denying claims.[35] Territorial competition was also manifest in the undue overcrowding of scientific bases in the Antarctic Peninsula, where claims overlapped.[36] The decision to continue national presences beyond the IGY - despite domestic budgetary constraints faced by some nations - under a one-year program known as International Geophysical Cooperation-1959, further highlighted the links between science and Antarctic politics.[37]

Logistical Capabilities

The scope and magnitude of IGY activities permitted states to develop enhanced capabilities to access the continent and maintain a large and permanent presence on the continent. This involved large-scale air and naval support for bases as well as the construction of infrastructure (airstrips, docking facilities, etc). The US and USSR placed particular emphasis on demonstrating a high level of mobility through aircraft operations in terms of transporting cargo and personnel within the continent. It was symbolic of the freedom of movement guaranteed by the "gentlemen's agreement."

Scientific Data and the Role of Scientists

Although much of the research conducted during the IGY involved pure or basic science, some states carried out research which had specifically been excluded from the IGY program due to its implications for sovereignty claims or because of its potential applications to resource exploration. The Soviet program, for example, included extensive cartography[38] and geological research. In spite of a tacit agreement on the exclusion of geology and cartography as research disciplines from the IGY program, the USSR did not feel constrained in undertaking an extensive program of this kind.[39] Scientific data and knowledge about Antarctica were clearly seen as assets that would enhance states' influence in future negotiations.

The importance of science brought the scientific community into closer contact with the policy-making processes of the states. The implementation of IGY programs through the ICSU and its national affiliates resulted in scientists being employed as administrators, coordinators of national policies and policy advisors to government programs. The role of the Special Committee on Antarctic Research during the IGY and its aftermath provided significant mechanisms for scientists to influence policy.[40]

Despite its success in bringing about a measure of political harmony and promoting international cooperation in scientific research, the IGY lacked an environmental policy. The IGY resulted in the largest ever human presence in Antarctica, but there were few regulations to prevent or minimize accidental or intentional interference with the fauna and flora of the continent. This can be attributed to the low level of environmental awareness at the time. Documented human impacts on wildlife habitats caused by logistical and scientific station construction activities during the IGY seem to indicate that governments and their expeditions had little knowledge about the special vulnerabilities of the Antarctic natural environment.[41]

IV. Towards a Partial International Solution

Following intensive diplomatic consultations, the US proposed new principles for creating a regime for Antarctica in 1958. These were shaped by the constraints imposed by the aversion to internationalization by several claimant states. Thus the proposed principles involved qualifications for participation in the regime based on a direct interest in Antarctica; the inclusion of the Soviet Union as a partner; retention of all claims and bases of claims to Antarctica; a freeze on the legal *status quo* on the continent; freedom of scientific research; and peaceful uses of the continent.[42] The principal elements of this initiative were drawn from the 1948 Chilean proposal which had envisaged a regime composed of states active in Antarctica establishing a temporary moratorium on their respective claims while engaging in scientific cooperation. The Chilean proposal had also formed the basis of the "gentlemen's agreement" for scientific research carried out during the IGY.

The practical effect of the proposed principles of the regime restricted participation at the 1959 Washington Conference to those twelve states with activities and interests in Antarctica. Among other reasons, it was perceived that states without direct interests might hinder agreement and bring undue political influence. It was also thought that open participation would raise the possibility of the inclusion of Soviet bloc states not recognized by Western countries. Opposition to the involvement of the UN or to an expanded base of participation was also premised on the belief that a relatively small group of countries with direct interests in Antarctica would best be able to reach agreement in a timely manner on the future regime. The Antarctic powers sought to compensate for this limited degree of participation at the drafting stage of the proposed treaty by assuring those states which were excluded fair treatment if they chose to participate later. The treaty's purpose was thus to guarantee freedom of scientific investigation throughout

Antarctica and reserve the continent for all peaceful purposes - a goal not inconsistent with the UN Charter.[43] Considerations of efficiency and competence were given priority in the establishment of the regime to administer Antarctica.

The Preparatory Meetings for The Washington Conference

The informal preparatory meetings for the proposed Conference on Antarctica were held in Washington between June 1958 and October 1959. These negotiations were significant because many of the fundamental characteristics of the Antarctic Treaty (APPENDIX 1) and its operation were formulated at the sixty preparatory meetings held at the US National Academy of Sciences. Many of the substantive issues included in the Treaty - such as the use of Antarctica for peaceful purposes, freedom of scientific investigation, international cooperation, freezing of the *status quo*, jurisdiction, inspection, administrative measures, status of non-signatories, area of application, dispute settlement, treaty revision, and treaty ratification and entry into force - were discussed and agreed upon at the preparatory meetings. However, these meetings were held in strict secrecy without any media briefings or official statements. The proceedings were never published, with the result that they continue to be classified under the official secrecy laws of the participant states. Thus, a comprehensive analysis of the political negotiations that led to the drafting of the Antarctic Treaty cannot be undertaken.[44]

Nevertheless, from what meagre sources are available it can be gleaned that the preparatory talks dragged out over a fifteen-month period in part because of initial objections by the Soviet Union to the discussion of substantive issues which it insisted should be left to a diplomatic conference. The Soviets also insisted that the conference be open to participation by any nation that expressed interest.[45] However, in the wide-ranging discussions of the preparatory meetings, much advance

planning for the Antarctica Conference was undertaken in terms of its date and venue, its agenda, the level of participation, and the rules of procedure designed to ensure a successful outcome.

Due to the highly contentious nature of the territorial claims issue there was considerable enthusiasm for setting it aside in order to obtain agreement on other issues. The ground-rules of the "gentlemen's agreement" that had facilitated the success of the IGY prompted interest in formalizing it. Moreover, as most of the claimants refused to renounce their claims, the majority opinion favoured freezing the legal *status quo* in Antarctica. Nine of the twelve parties agreed to the US proposal. Only France and Argentina among the claimants objected to the freeze. The Soviet objections stemmed from its perception that the best means of achieving the freeze was by avoiding its mention in the treaty.[46] Final consensus was built on the appropriate wording of Article IV of the Antarctic Treaty whereby the rival national positions of claimant states, potential claimant states and non-claimant states were accommodated.[47] Article IV did not recognize, dispute, or establish any territorial claims; and it prohibited the assertion or enlargement of any new claims while the treaty remained in force.

The issue of the ownership of Antarctica's potential resources, in particular mineral resources, was inextricably bound up with the sovereignty issue. From the beginning of the preparatory negotiations, Australia insisted that the topic should be side-stepped, fearing that the wide gulf between claimants and non-claimants on the issue might jeopardize the entire process.[48] States were acutely aware that the competition for the continent from the earliest Antarctic explorations were in part motivated by the desire to possess whatever hidden mineral wealth its frozen wastes contained.

The preparatory meetings established several precedents which have become characteristic of Antarctic diplomacy. The pattern of secrecy, the closed door negotiations, the lack of publicly available documentation all

became controversial issues in the 1980s, and all can be traced back to the preparatory meetings of 1958-59. The preparatory meetings were marked by the informal negotiating sessions among working groups and heads of delegations, and this practice also established the precedent of consultations prior to major Antarctic conferences. These informal consultations allowed for the identification of issues of agreement and controversy and for the necessary consensus to be reached.

The Conference on Antarctica

The Conference on Antarctica met in Washington from October 15-December 1, 1959. It made rapid progress in the drafting of the Antarctic Treaty due to the consensus or near-consensus that had been built on many issues at the preparatory meetings. However, two major issues on the conference agenda proved to be contentious. These involved the accession of third parties to the Antarctic Treaty and the denuclearization of the continent. Both issues were directly linked to wider cold war strategic considerations.

The US sought to limit accession to the Antarctic Treaty to members of the UN and Specialized Agencies. In the latter, some Soviet allies (East Germany, North Korea and South Vietnam) had been excluded from membership. The Soviet insistence on the exclusion of the Specialized Agencies' membership as a criterion from the accession Article threatened to unravel the entire compromise that had been built up to that point. Thus the ultimate compromise on the accession article opened the Treaty to members states of the UN as well as to any other state which might be invited to accede by the unanimous consent of the Consultative Parties.[49]

Wider Cold War considerations also affected the issue of nuclear explosions in Antarctica. The issue arose as a result of the concerns raised by the Southern Hemispheric states - Argentina, Chile, Australia and New Zealand - about the effects of possible nuclear testing in

Antarctica on the regional weather and climate.[50] These states, especially Australia, had also been concerned about a Soviet nuclear attack from Antarctica. While proposing a ban on all military explosions, these countries, supported by the US and the UK, were prepared to allow nuclear explosions of a non-military nature on prior notice and consultation among state parties to the Treaty. However, the Soviet Union insisted on a total prohibition of all nuclear explosions, contending that non-military and military nuclear explosions could not be distinguished. It expressed concern that an ambiguous provision in the Treaty on nuclear explosions would have the potential of undermining the basic principle of the reservation of Antarctica for peaceful uses.[51] Although the majority opinion favoured a provision permitting non-military explosions, the Soviet stand received an unexpected boost from a resolution adopted by the Argentine Parliament in November 1959 calling for a ban on all Antarctic nuclear explosions.[52]

Clearly, the Soviet Union's insistence on an absolute ban was motivated by strategic calculations. The ban averted pressure on its then limited nuclear technological capability by preventing the escalation of the arms race to Antarctica. Moreover, the fact that the issue had to be dealt with in the final stages of the Washington Conference also permitted Moscow to adopt an "all or nothing" stand on which hinged the success of the Conference. The desire to obtain some form of agreement for Antarctica that would prevent the recurrence of the tensions of the early 1950s caused the other states to accept the Soviet Union's position in a spirit of compromise. Consequently, on 1 December, 1959 all 12 participants nations signed the Antarctic Treaty, and it came into force on 23 June, 1961 after ratification by all the signatories.

The Antarctic Treaty and Environmental Issues

Environmental issues did not figure prominently on the agendas of

either the preparatory meetings or the Washington Conference. As is evident from the foregoing discussion, conflict prevention and arms control issues dominated discussions. The general tenor of relations between states at the international as well as the regional (Antarctic) levels was shaped by geo-strategic considerations. The emphasis on preventing the escalation of the Cold War and territorial competition was best exemplified in the Antarctic Treaty through the linking of the goal of non-militarization of Antarctica with a mutual inspection system. The unlimited freedom of access granted to inspections in all land areas of Antarctica and to ships and aircraft at ports of call or destinations on the continent, and the provision for aerial observations in Article VII, reflected these over-riding considerations of the negotiations.

Environmental issues were, nevertheless, given some attention. This stemmed largely from the initiatives of the Southern Hemispheric states (Chile, Argentina, South Africa, Australia and New Zealand) as well as from the interest of the US and the Soviet Union in strategic nuclear issues. As seen above, they had raised the issue of controls on nuclear explosions in Antarctica. The prohibition on nuclear tests, explosions and radioactive waste that resulted from these initiatives also had other global implications. The Antarctic Treaty has been recognized as the first global nuclear test ban treaty; as the forerunner of nuclear-weapons-free-zones; and as "one of the most significant contributions toward averting nuclear weapons proliferation and halting the nuclear arms race."[53] The most significant provision in this regard - Article V - did not, however, prohibit the use of nuclear energy in Antarctica and further called for the application to the continent of any future international agreements on nuclear energy, explosions or wastes.

Some of the Southern Hemispheric states were also directly interested in the conservation of the fauna and flora of the region. A Chilean initiative led to the inclusion of the only provision in the Treaty dealing with the preservation and conservation of living resources

within its ambit (Article IX [1][f]).[54] These states were also concerned to prevent ecological harm to those sub-Antarctic islands over which they exercised undisputed sovereignty.

The lack of substantive provisions for environmental protection in the Antarctic Treaty can also be attributed to the general lack of awareness of environmental issues. The era of environmentalism had yet to emerge in most of the Western industrialized states. Few governments moreover perceived any major threats to the ecosystems of the vast region. Further, despite its limitations, the Treaty included a provision for dealing with changing circumstances. Under the consultative process established by Article IX, the treaty negotiators left open the prospect of addressing not only the living resource issue, but also a wide range of other environmental issues. However, the Treaty did not establish any institutions to handle the more difficult issues of enforcement and compliance on account of the objections raised by the claimant states who feared internationalization of the region.[55]

V. Conclusion

The origins of the Antarctic Treaty can be traced back to the developments in the first decade after World War II. These developments occurred at both the international and regional levels. At the international level, the Antarctic Treaty was born out of the need to prevent the spill-over of the Cold War rivalry between the US and the USSR into the Antarctic. The foregoing discussion reveals that in the period leading up to the 1959 negotiations the motivating factors of US Antarctic policy were in part linked to its strategy of containment - the fundamental doctrine of post-World War II American foreign policy. The decision to include the Soviet Union as a participant in the negotiations was motivated by the realization that it had acquired sufficient capabilities to undermine any Western-dominated regime; and the Treaty's

provision linking non-militarization of Antarctica to unlimited rights of inspection was perceived as a potential means of monitoring Soviet conduct under the future regime. At the regional level, the rivalry between the territorial claimants (especially between Argentina, Britain and Chile) provided an impetus to negotiate a partial international solution without renunciation of sovereignty. Both claimants and non-claimants were favourably disposed to restricting participation in the regime, and generally fearful of internationalization.

The IGY established a clear link between Antarctic science and politics. Several aspects of Antarctic science attained strategic relevance. Such criteria as a country's presence, logistical capabilities and scientific research capabilities were to become tools of influence in future Antarctic diplomacy. Contemporary Antarctic history has also been characterized by the quest for the continent's potential mineral wealth. Although this issue was not dealt with in the Treaty, the guarantee of free scientific investigation was interpreted by some as leaving open the prospect that scientific research would some day yield knowledge of the continent's hidden resources.[56]

The absence of substantive provisions on environmental protection in the Treaty were largely the result of the dominance of conflict prevention issues and the meagre level of environmental awareness of the late 1950s. As we will see in later chapters, these issues became increasingly important ones in the life of the regime.

Notes for Chapter 2

1. "Argentine Note to the United Kingdom Reasserting the Grounds for the Argentine Claim to Antarctica" in Bush (1982a), *Antarctica and International Law: A Collection of Inter-state and National Documents*, Vol. I, Doc. AR15021947, p. 634.

2. See "Chilean Act of Inauguration of *Soberania* Base in the South Shetland Islands" and "Speech by the Chilean President at the Inauguration of the Bernardo O'Higgins military Base" in Bush (1982b), *Antarctica and International Law: A Collection of Inter-state and National Documents*, Vol II, Docs. CH060211947, CH18021948, pp. 367; 379-80.

3. See "Joint Declaration of Argentina and Chile Concerning the South American Antarctic" in Bush (1982a), Doc. AR4031948, p. 661.

4. See "Memorandum of Conversation, by the Deputy Director, Office of American Republic Affairs"; and "United States Statement on the Status of Territories Included in the Defence Area Defined by the Interamerican Treaty of Reciprocal Assistance" in United States. Department of State (1976b), *Foreign Relations of the United States, 1949*, Vol. I, pp. 970-71; 1053-54.

5. "Argentine Note to the United Kingdom Rejecting British Protests at the Establishment of Argentine Stations on Gamma and Deception Islands and Declining to Submit the Dispute to the International Court of Justice" in Bush (1982a), Doc. AR28011948, pp.653-56.

6. Beck (1987), "A Cold War: Britain, Argentina and Antarctica" in *History Today* Vol. 37 (6), pp. 16-23.

7. Rose (1980), *Assault on Eternity: Richard E. Byrd and the Exploration of Antarctica, 1946-47*.

8. For debates on and texts of the proposal, see United Nations. Trusteeship Council (1947), *Official Records: Second Session*, Doc. T/179, pp. 62-5; 218-24.

9. See "Paper Prepared by the Policy Planning Staff" in United States. Department of State (1976a), *Foreign Relations of the United States, 1948*, Vol. I, pp. 977-87.

10. See "Secretary of Defense (Forrestal) to the Secretary of State" Ibid., pp. 971-74.

11. "Ambassador in the United Kingdom (Douglas) to the Secretary of State." Ibid., p. 992.

12. See "The Ambassador in Chile (Bowers) to the Secretary of State." Ibid., pp. 1009-11.

13. *New York Times* (1946), "Antarctic is Held Uranium Source: Six Countries Plan to Explore South Polar Region in the Search for Minerals" November 6, p. 17.

14. Capt. Eddie Rickenbacker, for example, in a proposal submitted to the US Army, Navy and Coast Guard, suggested the use of nuclear bombs to open up the Antarctic ice cap for the exploration of its possible mineral wealth. *New York Times* (1946), "Atomic Bombing of Antarctic Urged by

Rickenbacker to Get Minerals" January 31, p. 23.

15. See "Letter from the Secretary of the Interior to the Acting Secretary of State" in United States. Department of State (1976a), p. 962.

16. "Resolution Concerning Antarctica Adopted by the All-Soviet Geographical Society" in Bush (1988), *Antarctica and International Law: A Collection of Inter-state and National Documents*, Vol. III, Doc. UR10021949, p. 207.

17. United States. Department of State (1977), *Foreign Relations of the United States, 1950*, Vol. I, pp. 911-13.

18. "The Ambassador in Chile (Bowers) to the Secretary of State" in United States. Department of State (1976a), pp. 1009-10.

19. See "Draft Declaration on Antarctica, Prepared by the Department of State" in United States. Department of State (1976b), pp. 807-09.

20. For the events that led to the failure of the moratorium initiative, see Hanessian (1960), "The Antarctic Treaty" in *International and Comparative Law Quarterly* Vol. 9, pp. 447-48.

21. Bush (1988), *Antarctica and International Law: A Collection of Inter-state and National Documents*, Vol III, Doc. JA08091951, pp. 11-2.

22. See "Memorandum of Discussion of the 206th Meeting of the National Security Council" in United States. Department of State (1983), *Foreign Relations of the United States, 1952-1954*, Vol. I, pp. 1757-61.

23. *Times* [London] (1956), "Call for UN Control of Antarctica" January 25, p. 8.

24. *Times* [London] (1958), "Rival Claims in Antarctica: Need for World Authority" February 12, p. 8; and *Times* [London] (1958), "Argentine View on Antarctic: Control Inadmissable" February 13, p. 7.

25. United Nations. General Assembly (1956), *Official Records: Annexes*, 11th Session, Doc. A/3118, pp. 1-2; and United Nations. General Assembly (1958), *Official Records: Annexes*, 13th Session, Doc. A/3852, p. 5.

26. E.g., *Times* [London] (1957), "Russian Base in Antarctica: Australian Concern" February 7, p. 7.

27. Crary (1982), "International Geophysical Year: Its Evolution and US Participation" in *Antarctic Journal of the United States* Vol 17 (4), pp. 1-4. The best description of the Antarctic program of the IGY is available in Sullivan (1961), *Assault on the Unknown: The International Geophysical Year*, pp. 318-26.

28. See Resolutions adopted at the First International Geophysical Year Conference, Paris 1955 in *Bulletin d'Information du CSAGI* (1956), No. 7, pp. 6; 17; 18; and 30.

29. *Bulletin d'Information du CSAGI* (1956), No. 6. pp. 30-1.

30. Sullivan (1961), p. 294.

31. Sullivan (1959), "International Geophysical Year" in *International Conciliation* No. 521, p. 270.

32. United States. Congress. House of Representatives. Committee on Foreign Affairs (1973), *Science, Technology and American Diplomacy: The Political Legacy of the International Geophysical Year*, Cmt. Prt., p. 26.

33. The significance of a permanent presence was underscored by the US desire to continue operating its South Pole base even after the IGY in view of the strong perception that if it were abandoned, the "Russians would take it over." United States. Congress. House of Representatives. Committee on Interstate and Foreign Commerce (1958), *International Geophysical Year: The Arctic, Antarctica*, Report No. 1348, 85th Cong., 2nd Sess., p. 44.

34. All states were aware that some form of diplomatic negotiations were likely in view of the political non-resolution of the status of Antarctica and the fact that it remained an issue of political controversy throughout the IGY. United States. Congress. House of Representatives. Committee on Foreign Affairs (1973), p. 56.

35. Taubenfeld (1961), "A Treaty for Antarctica" in *International Conciliation* No. 531, p. 268, n. 23.

36. Comment of the US IGY-Antarctic Program Director, Dr. L.M. Gould. Gould (1958), "Antarctica in World Affairs" in *Headline Series* No. 128, p. 23.

37. United States. Congress. House of Representatives. Committee on Interstate and Foreign Commerce (1958), pp. 44-5.

38. United States. Congress. House of Representatives. Committee on Foreign Affairs (1973), p. 26.

39. For the results and resource-orientation of the Soviet IGY geological research program see *Soviet Antarctic Expedition: Information Bulletin*, Vols. I & II. A US National Security Council policy statement during the IGY expressed concern at the scope of Soviet non-IGY activities: "[P]rominent in the Soviet program are non-IGY activities, such as ground-controlled aerial photography, mapping, hydrographic charting, basic geology and biology, which were only incidentally a part of U.S. activities during the past season." See "National Security Council Report (NSC 5804/1): Statement of U.S. Policy on Antarctica (March 8, 1958)" in United States. Department of State (1991), *Foreign Relations of the United States, 1958-1960*, Vol. II, Doc. 269, p. 480.

40. One US Congressional assessment of the IGY noted that:

> [T]he scientific leadership of the IGY was largely composed of a distinguished elite having considerable influence within their respective countries. The IGY was effective in helping to consolidate these various national elites into an international elite, the influence of which has not been confined, over the years, to purely scientific matters. Thus, the effect of the IGY on both international science and political affairs upon which international science depends, is doubtless still being felt in many areas today.

United States. Congress. House of Representatives. Committee on Foreign Affairs (1973), p. 47.

41. Many of the impacts were documented by biological scientists. See e.g., Eklund (1959), "Antarctic Ornithological Studies During the IGY" in *Bird-Banding: A Journal of Ornithological Investigation* Vol. 30, p. 115; Carrick (1960), "Conservation of Nature in the Antarctic: Based on a Paper Read at the Antarctic Symposium at Buenos Aires, 1959" in *SCAR Bulletin* No. 6 in *Polar Record* Vol. 10, pp. 304-5; Stonehouse (1965), "Counting Antarctic Animals" in *New Scientist* Vol. 27 (454), pp. 274-5.

42. See "International Conference to Conclude a Treaty Assuring the Continuation of Scientific Cooperation in Antarctica: Statement by the President" in United States. Department of State (1960), *American Foreign Policy: Current Documents 1958*, Doc. 126, pp. 473-75.

43. See instructions of Secretary of State Dulles to US diplomatic stations on the explanations to be provided to foreign governments on the question of participation in the proposed Antarctic Conference in "Circular Airgram From the Department of State to All Diplomatic Posts" in United States. Department of State (1991), *Foreign Relations of the United States, 1958-1960*, Vol.II, Doc. 275, pp. 503-05.

44. The only primary sources on these negotiations are those published by the US State Department which has selectively declassified its memoranda pertaining to the preparatory talks and the Antarctica Conference which provide only partial insights into the political negotiations. Ibid., pp. 464-640. However, the following source provides valuable insights into the political negotiations that lead to the drafting of the Antarctic Treaty through a study of the memoranda from some of the meetings found among the personal papers of Admiral George Dufek, former Antarctic Projects Officer in the US Department of State. See Beck (1985), "Preparatory Meetings for the Antarctic Treaty 1958-59" in *Polar Record* Vol. 22, pp. 653-64.

45. "Status Report on Antarctica" in United States. Department of State (1991), Doc. 276, p. 506.

46. "Memorandum From the Director of the Antarctic Staff (Owen) to the Deputy Assistant Secretary of State for International Organization Affairs (Walmsley)" in United States. Department of State (1991), Doc. 284, pp. 540-41.

47. Beck (1985), pp. 660-1.

48. See comments by Australian negotiator Malcolm Booker on Antarctic economic exploitation in "Memorandum of a Conversation, Embassy of New Zealand, Washington, March 10, 1958, 11 a.m." in United States. Department of State (1991), Doc. 270, pp. 496-7.

49. See "Memorandum From the Head of the Delegation to the Conference on Antarctica (Phleger) to the Secretary of State" in Ibid., Doc. 322, pp. 628-29.

50. "Memorandum of a Conversation, Department of State, Washington, November 7, 1959." Ibid., Doc. 307, p. 609.

51. "Memorandum From the Head of the Delegation to the Conference on Antarctica (Phleger) to the Secretary of State" (1959) in United States. Department of State (1991), Doc. 305, pp. 602-3.

52. "Memorandum From the Head of the Delegation to the Conference on Antarctica (Phleger) to the Secretary of State." Ibid., Doc. 308, pp. 609-11.

53. United Nations. General Assembly (1984), *Question of Antarctica: Study Requested Under General Assembly Resolution 38/77: Report of the Secretary General*, Doc. A/39/583 (Part I), pp. 23; 44; and 46.

54. Comment of Chilean diplomat Manuel Bianchi writing under the pen name of Manuel Amaro. Amaro (1967), "Symbol of Good Will: The Antarctic Treaty" in *Americas* Vol. 19 (2), p. 6.

55. This attitude was epitomized in the comment of the Chairman of the Argentine delegation to the Washington Conference: "This conference has not been convened to institute regimes or to create structures. It is not its mission to change or alter anything." See "Opening State by the Argentine Representative, Mr. Adolfo Scilingo" in United States. Department of State (1960), *The Conference on Antarctica, Washington, October 15-December 1, 1959: Conference Documents, the Antarctic Treaty and Related Papers*, International Organization and Conference Series No. 13, Pub. 7060, p. 31.

56. See remarks of US scientist Dr. Lawrence Gould in United States. Congress. Senate. Committee on Foreign Relations (1960), *The Antarctic Treaty*, Hearings (CIS No. 1403-14), 86th Cong., 2nd Sess., p. 75.

Part II Change and Continuity in Regimes for Controlling Human Impacts

Chapter 3 The Politics of Conservation of Antarctic Fauna and Flora

I. Introduction

In the first decade of its operation the Antarctic Treaty regime's focus was on making policy for the orderly conduct of scientific research designed to promote one of its most important basic principles: that of Antarctica as a region of peaceful multinational scientific collaboration. The major emphasis was on the conduct of pure science. The goal was to gain a fundamental knowledge of the continent's structure, composition and evolution. Peaceful international scientific cooperation in Antarctica in an era of rising superpower rivalry was also designed to reinforce another basic principle of the Treaty: that of conserving the fauna and flora of the region. Despite the lack of a clearly defined environmental agenda at the Washington negotiations, and the inclusion of only one specific environmental provision in the Antarctic Treaty, there was some recognition of the vulnerability of Antarctic fauna and flora to human interference.

This chapter will attempt to analyze the implementation of policies under the sub-regime, the Agreed Measures for the Conservation of Fauna and Flora (see APPENDIX 3), created under the Antarctic Treaty. It begins with an overview of the scientific aspects of conservation that necessitated the creation of the regime. It will then analyze the basic structure of the regime and its implementation, and the structural weaknesses in the regime which impaired its effectiveness. It will next focus on the opportunities and constraints on effective protection of fauna and flora and areas presented by the overhauling of the Agreed Measures by the Madrid Protocol regime. Finally, the chapter will evaluate the role of non-state actors in Antarctic conservation. The more transparent policy processes of non-governmental bodies (in contrast to

those of the Antarctic Treaty) provide greater insights into the issues involved in the implementation of conservation policies.

II. Emergence of a Conservation Regime

The impetus for a nature conservation regime in Antarctica came from the Scientific Committee on Antarctic Research (SCAR), the primary scientific and technical advisory body to the Antarctic Treaty Consultative Meeting. Even prior to the Antarctic Treaty's entry into force, SCAR stressed the importance of conserving the Antarctic wildlife. It proposed general principles and recommendations in 1961 which sought to guide the ATCP states in the development of a common policy on conservation covering all land and fresh water, including fast ice and ice shelves, and all coastal waters south of latitude 60° South. It was proposed that these areas be recognized internationally as a nature reserve.[1] Broadly, these principles recognized the unique nature of Antarctic fauna and flora and their scientific and aesthetic values; the potential irreversibility of human impacts on the environment; the interdependence of all forms of Antarctic life; and the need to balance conservation with rational management and utilization of Antarctic living resources when scientific and economic needs for such resources arose. They also sought to minimize harmful interference by scientific research and support activities; to provide special protection through sanctuaries for important or vulnerable species and habitats; and to build international cooperation. They provided an approach to conservation that was designed to introduce measures as environmental problems emerged, or were anticipated, in parallel with expanding human activities in Antarctica.

The special problems of implementation and enforcement stemming from the sovereignty dispute in Antarctica were recognized. SCAR did not recommend any institutions, but noted that the "necessary systems of

authorization must remain a matter for discussion between the responsible authorities" and that "nations should draft applicable regulations."[2]

The Agreed Measures for the Conservation of Antarctic Fauna and Flora emerged out of the 1964 ATCM at Brussels following three years of negotiations. These were in the form of an annex to a Recommendation (III-VIII);[3] but the text of the Agreed Measures represented a mini-treaty. This was a compromise between those ATCPs (e.g., the UK[4]) which called for a convention that would extend the scope of the regime to the high seas, and those which preferred a recommendation that covered the Antarctic landmass and the coastal waters. The need to maintain freedom of access to the continent guaranteed by the Treaty was a major determinant of the form of the regime.[5]

The Agreed Measures For the Conservation of Fauna And Flora: Structure of the Regime

The Agreed Measures recognized the unique character of the Antarctic environment by considering the region as a "Special Conservation Area." However, a definition of the concept was avoided or was left for future elaboration. At the same time, two alternate concepts proposed by SCAR designed to afford greater protection were unacceptable to the ATCPs. The first involved preservation of Antarctica as a "world heritage" due to its scenic beauty and the world-wide appeal and interest in its fauna. The second called for the continent to be recognized internationally as a nature reserve designed to maintain Antarctica's unique plant and animal life in their natural state as far as possible.[6]

The potential implications of the concepts of "preservation as a world heritage" and "nature reserve" for the principle of guaranteed access to all areas of Antarctica provided under the Antarctic Treaty (Article II), including access to the continent's potential mineral resources as a result of future economic, cognitive or technological

developments, as well as the objections of claimant states to any designations that could "internationalize" Antarctica's status and diminish the validity of their respective territorial sectors, were probable motivations for the ATCPs' decision. The nature reserve concept implied a possible prohibition on mineral resource activities, for example, and so had the potential of conflicting with the consumptive uses option.

Despite its ambiguity towards conflicting uses, the Agreed Measures imposed a prohibition on the killing, wounding, capturing or molesting of native mammals and birds. It afforded special protection to some endangered species of wildlife. Whales, despite the threatened status of some species, were excluded from the Measures' ambit because they were already managed under the ad hoc conservation regime of the IWC. Governments were empowered to issue permits for the killing or capturing of wildlife for scientific research, if these were indispensable for food or for educational purposes. They also agreed to take appropriate measures to "minimize interference" with wildlife habitats. However, harmful interference was "permitted to the minimum extent necessary" for the establishment and operation of scientific stations. The import into Antarctica of non-indigenous species, parasites and diseases was also strictly regulated. Provision was also made to designate certain areas of "outstanding scientific interest" as "Specially Protected Areas" (SPAs) in order to preserve their "unique natural ecological system." Entry into these was limited. Governments also agreed to take reasonable measures to prevent pollution of inshore coastal waters and ice shelves. As pollution of the seas is not a right recognized by international law, the negotiation of this provision did not prove controversial in relation to Article VI of the Treaty; and moreover, its ambiguity did not affect the position of the states not recognizing Antarctic territorial seas.[7] The Parties also agreed to collect and exchange information on the records (including records of permits) and statistics of seals and birds killed or

captured and on the status of species. This was intended implicitly as a means of monitoring regime compliance.

The interpretation and implementation of the Agreed Measures was entrusted to the governments of the ATCP states through "appropriate action." Governments were obliged to ensure that their stations and expeditions understood and observed the regulations. They also undertook to enforce compliance with the regime by non-signatory states, consistent with the Charter of the UN; and, from ships chartered from non-signatory states through feasible arrangements. The formal entry into force of the Measures was dependent on the approval of all ATCP states. However, in the interim until they became effective, governments undertook to observe, as far as feasible, the Measures as guide lines.[8]

III. The Implementation of the Agreed Measures, 1964-1989

The Agreed Measures formed the basis of Antarctic conservation for most of the first 30 years of the Antarctic Treaty's operation. They guided not only international conservation efforts of the 1960s and 1970s, but also instructed national laws and regulations governing the behaviour of scientific expeditions.[9] They were overhauled by the comprehensive environmental protection regime proposed by the Madrid Protocol [APPENDIX D] to the Antarctic Treaty in 1991.

Governments in general have observed the prohibitions imposed by the Agreed Measures regime on the killing of fauna and have restricted the number of permits issued for taking animals.[10] With the increase in human activities and greater knowledge of the complexity and vulnerability of the Antarctic ecosystems, the initial conservation regime was expanded on the advice of SCAR. For example, the restrictions on entry into SPAs were strengthened;[11] stricter regulations were imposed on the total number of birds and seals taken;[12] the numbers of such animals taken were periodically evaluated and published by SCAR; the SPA concept was

reviewed,[13] and new areas were designated as "Sites of Special Scientific Interest" (SSSIs) designed to afford a lower level of protection for scientific investigations than SPAs.[14] With the advent of commercial ship-borne tourist expeditions in 1966, new regulations were introduced requiring governmental action to ensure that all tourists complied with the Antarctic Treaty and recommendations made under it and prohibiting tourists from entering SPAs.[15]

Factors Impairing the Effectiveness of the Regime

However, from the early 1970s onwards some deficiencies in the implementation of the Agreed Measures came to light. Especially in the implementation of the protected area system and rules governing disturbances to wildlife, the structural weaknesses in the regime were increasingly evident. The following section will explore the salient factors impairing the effectiveness of the Agreed Measures. These can be summarized under the headings:

(1) state discretion in interpretation and enforcement;
(2) lack of institutions;
(3) conflicting objectives; and
(4) uncertain scope of the regime.

State Discretion in Interpretation and Enforcement

The Agreed Measures provided considerable discretion to states in interpretation and enforcement. This was particularly evident in the interpretation of the provisions pertaining to the SPAs (Article VIII) and the minimization of "harmful interference" of wildlife (Article VII). The following examples will illuminate states' ability to override environmental considerations in the establishment of bases and their logistical support services under the Agreed Measures regime.

(a) The Location of the USSR Scientific Station, *Bellingshausen* in the Fildes Peninsula SPA

In 1968 the Soviet Union constructed the *Bellingshausen* base in the centre of the Fildes Peninsula SPA on King George Island. The area had been protected in 1966 for its biological diversity. With numerous small lakes which are ice-free in summer, it was viewed as a representative sample of the South Shetland Islands and as an "area of outstanding ecological interest."[16] Several factors permitted the USSR to use its discretion in the decision to establish the base: the limitations of the regime in terms of its lack of explicit prohibitions on construction activities within or near SPAs; the lack of environmental impact assessment requirements for such activities; and the fact that formal designation of Fildes Peninsula as a SPA had not been in effect at the time (due to the non-approval of the relevant Recommendation). The area's physical attributes included its ice-free coast, its mild climate, and the availability of freshwater. These provided accessibility, logistical convenience and habitability for the Soviet Antarctic Program, and influenced its decision to site *Bellingshausen* within the Fildes Peninsula SPA. In 1975, in view of the loss of its pristine status,[17] the ATCPs terminated the SPA status of the Fildes Peninsula and accorded it a lesser degree of protection as a SSSI for fossil research purposes.[18]

(b) French Airstrip Construction Project, Pointe Geologie, Terre Adelie

The discretion that governments enjoyed to override environmental considerations in the implementation of the Agreed Measures was further evident in the exceptions granted to the requirement to "minimize harmful interference" with wildlife habitats. Article VII (2) lists certain activities as harmful interference: allowing dogs to run free; flying aircraft in a manner that would disturb bird and seal colonies; driving

vehicles close to wildlife colonies; the use of explosives; discharge of firearms; and disturbance of wildlife habitats during breeding seasons by persistent human attention. However, some of these activities are permitted to the "minimum extent necessary" in the establishment, supply and operation of scientific stations. Nevertheless, the interpretation of the term "minimum extent necessary" is left open to the government agencies undertaking activities in Antarctica.

In its practical application, the broad exception has allowed states to override environmental considerations. The most controversial use of the exception was made by France in the 1980s to partly justify the harmful interference to penguin habitats caused by the construction of a hard-rock airstrip at Pointe Geologie, in Terre Adelie.[19] The airstrip was perceived as necessary by France in its drive to acquire logistical support facilities to supply its year-round presence and activities in Antarctica at its *Dumont D'Urville* base (within its claimed sector, Terre Adelie) in anticipation of the minerals convention coming into force.[20] The construction project involved the dynamiting and levelling of five small islands and filling in the shallow channels between them with rubble from the blasts to establish the surface for the airstrip. This work was undertaken initially without adequate environmental impact assessments. This was despite the site being located in an area of extraordinary birdlife at Pointe Geologie,[21] and the fact that *Dumont D'Urville* was originally established to facilitate the study of such birdlife.[22] The killing of native birds - penguins in this case - without a permit; the failure to minimize harmful interference with the "normal living conditions of native mammals or birds" (i.e., through destruction of the habitats and migratory paths of penguins); and the use of explosives "close to birds and seals concentrations"; led to allegations by NGOs of breaches of Articles VI (1) and VII (1)(2d) of the Agreed Measures.

Despite the adverse international publicity generated by the NGO campaign,[23] the issue was not dealt with adequately at the political level

by the ATCP states. The issue was not referred to the dispute resolution mechanism available under the Antarctic Treaty. This was largely due to the fact that the states were reluctant to embarrass each other, fearing a possible backlash against their own conduct. Construction of the project resumed in 1989 with precautionary measures, but even rigorous monitoring failed to prevent high levels of bird mortality.[24]

The political dimensions of the *Bellingshausen* base and Pointe Geologie airstrip construction projects highlighted the level of discretion granted to states by the Agreed Measures regime that enabled them to override conservation rules. The dispute resolution mechanism of the Antarctic Treaty that could have provided an interpretation of the relevant provisions was not used due to the need to avoid diplomatic recriminations and exposure.

The Lack of Institutions

The controversies surrounding the *Bellingshausen* and Pointe Geologie construction projects reveal the lack of an institutional machinery provided by the regime for effective environmental enforcement and compliance monitoring. This can be attributed to the general reluctance of many ATCPs to permit the development of international institutions within the Antarctic Treaty System. Even the establishment of a modest secretariat for facilitating the exchange of information and technical data requirements under the Treaty or for assistance in the organization and conduct of ATCMs was controversial.[25] This general aversion to institutions with substantive enforcement powers can be attributed, first, to claimants' perception of the diminution of the validity of territorial claims through internationalization, and secondly, the non-claimants' perception of them as potential instruments for applying restrictions on their autonomy or freedom of action, especially with regard to the need to maintain access to any potential Antarctic mineral resources. Generally,

all ATCPs were keen to prevent their freedom of action being circumscribed by environmental institutions that would bar access to Antarctica's potential resources.

Sovereignty and freedom of action as factors militating against effective institutions were evident in the implementation of the Agreed Measures from the beginning. In particular, the retention of national autonomy and authority over the administration of the system of permits for regulated activities (called for in Article VI) was perceived as pivotal to maintaining the preservation of sovereign rights as embedded in Article IV (a) of the Treaty, and was carried over into the Agreed Measures (Article IV [2]). This was further reinforced by the allocation of enforcement responsibilities overwhelmingly to national governments, which were to take "appropriate action" to implement the Measures (Article III). The sensitivity of the sovereignty issue was further evident in the clarification of the roles and powers of national agencies in the issuance of permits.[26] No secretariat or commission was envisaged for even the task of coordinating the exchange of information on implementation, as required by Article XII. This deficiency was partly alleviated in 1970. SCAR, through its national committees, was invited to assemble and publish information reported by governments, and to prepare periodic reports on the status of species. A degree of monitoring was thus established.[27]

The lack of institutions to coordinate or monitor implementation meant that the Agreed Measures were not uniformly applied by all ATCPs. For example, inadequate regard to the training and education of Antarctic personnel (as required by Article IV) resulted in contravention of the regime's rules governing protection of wildlife.[28] A SCAR review of the effectiveness of the protected area system for the 1987 Rio de Janeiro ATCM found a "lack of consistency of approach to conservation matters as domestic legislation is not uniform among countries."[29] In view of the lack of a consensus on institutional review, SCAR's recommendation for on-site inspections of protected sites as a means to enhance enforcement[30]

was endorsed by the ATCPs. They also urged governments to report to ATCMs on such visits.[31]

Failure to Resolve Conflicting Objectives

The conservation policy established under the Agreed Measures in its implementation in the 1970s ran into problems involving conflicting objectives as national interests expanded in the 1970s to include the possible exploitation of Antarctica's resources, in particular its potential mineral and oil deposits. SCAR pointed to the need to expand the system of SPAs to cover representative examples of the major Antarctic land and freshwater ecological systems.[32] The 1972 Wellington ATCM decided to limit the number of SPAs to the "minimum" and their size to the "minimum required to serve the purpose for which the Area has been designated."[33] The regulations applying to entry into and activities within SPAs had the potential to restrict prospecting and exploration activities related to possible Antarctic mineral resources. Thus, the expansion of the protection under the Agreed Measured was constrained by the perception that conservation objectives could jeopardize states' rights of freedom of scientific investigation and access to mineral resources.

The SCAR panel that reviewed the protected area system in 1987 found that the existing policy inadequately fulfilled conservation objectives due to meagre follow-up action. Following the establishment of SPAs, the report found no additional measures for buffer zones to prevent adverse impacts or for clear demarcation of boundaries, and no comprehensive management plan for SPAs.[34] Independent inspections carried out by Greenpeace International also found inadequate implementation and monitoring measures, including a lack of notice about prohibitions on public entry into some protected sites.[35] The failure to resolve conflicting objectives and to implement thoroughly the principal rules of

the regime may in part be attributed to a lower priority placed on conservation by the ATCPs and also to the inadequacy of the financial resources necessary for monitoring activities.

Further evidence of the conflict between conservation and resource uses were evident in the 1980s. As the Agreed Measures and their effectiveness came under scrutiny in the controversial French airstrip construction project, some states sought to blunt the criticism of NGOs by proposing new categories of protected areas. At the 1985 Brussels ATCM Australia proposed the establishment of "Managed Areas" which were intended to protect the environmental, aesthetic or historical values of the continent.[36] However, opposition to the proposal was based on concerns that expansion of the protected areas could raise "political problems."[37] These objections were largely influenced by perceptions that wilderness protection would involve restrictions on freedom of scientific investigation. Moreover, such extended protection was also liable to set adverse precedents by closing off areas to future mineral prospecting and exploration activities. Nevertheless, the Australian proposal was largely the result of the concern, expressed increasingly in domestic politics, about the inadequacy of the Agreed Measures to safeguard the Antarctic environment from the scale of the threats posed by future minerals resource activities. It also marked the emergence of Australia as the leading proponent of the wilderness and aesthetic values of Antarctica. These were to attain significance subsequently within the context of the ratification of the minerals regime.[38]

A change of tone in the policy on the protected area system became evident in the mid-1980s as external pressure mounted on the ATS from NGOs which sought to scrutinize the management of the Antarctic continent. Greenpeace, for example, in addition to mounting independent Antarctic expeditions, established the only year-round, non-governmental scientific base designed *inter alia*, to monitor, document and build public awareness of the ATCPs' compliance with ATS environmental laws, including those of

the Agreed Measures and its protected area system, through on-site inspections.[39]

Under pressure from environmental groups, SCAR in 1987 recommended expanding the protected area system based on among other values, Antarctica's aesthetic and wilderness qualities.[40] Although this was endorsed by the ATCPs, it was to be done within "concepts of multiple use and zoning for different levels of protection" in Antarctica.[41] In other words, the potential of wilderness preservation to impose prohibitions on uses was to be contained.

At the 1989 Paris ATCM much progress was achieved in strengthening and expanding the protected areas under the Agreed Measures. Management Plans for SPAs were recommended designed to give effect to tightening entry into such areas, even for "compelling scientific purpose that cannot be served elsewhere"; and to ensure that science would not threaten the "natural ecological system" of a SPA.[42] The assumption underlying the rigorousness of the new approach was that scientific activities, if not controlled, could undermine the scientific values of Antarctic ecosystems. Two new categories of protected areas were also created. The most important of these - Multiple-use Planning Areas (MPAs)[43] - was designed to overcome a major deficiency in the Agreed Measures regime: the lack of a mechanism for avoiding and resolving conflicting objectives and uses and to minimize cumulative environmental impacts, especially in view of anticipated mineral resources activities. Nevertheless, the debate at Paris on the scope of the MPA concept again featured the issue of the constraints that could be imposed on the freedom of scientific investigation; accordingly, the number and size of MPAs were to be "kept to the minimum necessary to meet [their] objectives."[44]

The measures for strengthening and expanding the protected area system at the Paris ATCM were adopted within the context of an unprecedented level of pressure on the ATS. This stemmed from the demands of Australia and France to ban mining in Antarctica and instead to turn

the continent into a "wilderness reserve" through a comprehensive environmental protection convention.[45] This reflected an informal alliance between some ATCP governments (Australia and France) and NGOs for changing the policy direction of the ATS regime from one largely oriented towards conservation, to one of preservation based on the intrinsic value of Antarctica, especially its wilderness and aesthetic values. The shared objectives of this informal alliance involved non-ratification of the minerals regime; the adoption of a comprehensive and integrated approach intended to overhaul the largely ad hoc and piecemeal approach to Antarctic environmental protection including the Agreed Measures and its protected area system; and harmonization of environmental principles, regulations, monitoring and enforcement applicable to all permitted activities in Antarctica. Thus, the improvements to the protected area system through a degree of recognition of wilderness values can be seen within the context of the mining option. These can attributed to the perceived need of those ATCPs supporting the minerals regime (the US, the UK, West Germany, Japan, Argentina, Chile, South Africa and USSR) to overcome the anachronistic elements of the Agreed Measures regime, and to secure bargaining leverage by blocking a comprehensive environmental convention which would rule out mineral resource activities. The Paris meeting agreed to convene a special consultative meeting to address all issues of conservation in 1990.

The Uncertain Scope of the Regime

Moreover, the effectiveness of the Agreed Measures was constrained by the early consensus among the ATCPs on the limitation of the scope of the regime to the land and iceshelf areas of Antarctica. This interpretation was implicitly accepted at the time of adopting the Measures. They were applicable to "the same area to which the Antarctic Treaty is applicable...namely the area south of 60° South Latitude,

including iceshelves." But they were not to "prejudice or in any way affect the rights, of any State under international law with regard to the high seas within the Treaty Area", or restrict the inspections carried out under the Treaty (Article I). This limitation on the scope of the regime was further reinforced by a separate Recommendation by the 1964 Brussels ATCM exhorting governments to "voluntarily regulate" pelagic sealing and the taking of fauna on pack ice due to its "great importance for the fulfilment of the purposes and principles of [the Agreed] Measures"; this implied the need for a separate pelagic sealing regime to be negotiated at the subsequent ATCM.[46] The fact that as many as 80 percent of seals lived on pack ice, and that the feeding grounds of the seals, penguins and other birds which fell within the Agreed Measures' ambit were located in marine areas, meant that the Measures were significantly restricted in scope and effectiveness.

Attempts to expand the scope of the SPA and SSSI concepts to marine areas were unsuccessful until the mid-1980s. Chile had from 1970 consistently sought to have marine SPA and SSSI designation proposals included on ATCM agendas. From the beginning, the ATCPs were reluctant to deal with the issue as there were differing views among them as to the Antarctic Treaty's competence in marine areas. With the growth of international interest in Antarctic resources and their conservation in the 1970s and 1980s, especially in marine living resources and continental shelf hydrocarbon resources, the ATCPs displayed considerable ambivalence and uncertainty on the issue. On the one hand, they had to justify resource regimes within the ATS, and to bolster their environmental credentials in light of external pressure on the ATS from both Third World countries (especially within the UNCLOS III negotiations) and Western environmental NGOs. These pressures resulted in the virtual abandonment of the restrictive interpretation of their competence in marine areas.[47] On the other hand, the ATCPs were reluctant to establish environmental regulations in Antarctic inshore marine areas through the SPA and SSSI

concepts due to the precedential implications for their rights of access to the continent and their freedom of action in the Southern Ocean - especially in the area south of 60° South, an area which is considered high seas by Article VI. Moreover, the ATCPs also needed to avoid reopening the perennial question of sovereignty.[48]

Much of the discussion on the expansion of the protected area system under the Agreed Measures was not mentioned in ATCM reports. Only in 1977 did the ATCPs decide to make an official statement on the issue by requesting SCAR to further examine the designation of marine SSSIs. They noted the Chilean intention "to propose to SCAR, following agreed procedures, two Marine Sites of Special Scientific Interest".[49] The 1979 Washington ATCM deferred "full consideration of concerns relating to the designation of SSSI's covering marine areas" for the following meeting.[50]

The 1983 Canberra ATCM debated the merits of a draft Recommendation by Chile, Argentina and the UK incorporating a proposal and a management plan for the designation of South Bay, Doumer Island, Palmer Archipelago as a SSSI covering terrestrial and marine areas.[51] The first substantive statement on the issue revealed concerns that some states had concerning the implications of marine SSSIs for Article VI of the Antarctic Treaty.[52] The decision on the approval of the proposal, which had received SCAR's prior endorsement,[53] was nevertheless deferred pending further study.[54] Non-claimant states, especially the maritime powers with strong attachment to the freedom of the seas thus objected to regulation of marine areas because of the precedential implications for the right of open access to Antarctica guaranteed by the Treaty.[55] Freedom of action in the high seas, especially access to resources and freedom of navigation, had attained considerable importance in the foreign policy of the US under the Reagan Administration. Also at stake was the perceived need to avoid giving any recognition, implicit or explicit, to the sovereign rights asserted by Chile and other claimant states to coastal state jurisdiction in Antarctica waters.

The concept of protected areas in the marine environment in Antarctica did not gain complete acceptance with the ATCPs until the 1987 Rio de Janeiro ATCM.[56] Yet the management plan eventually adopted for the South Bay Marine SSSI was scarcely different from the original one (submitted by Chile, the UK and Argentina) in its geographical scope, management objectives, scope of research, and restrictions on activities. This delayed recognition contributed to much uncertainty as to the scope of the Agreed Measures regime and reduced its effectiveness. With the emerging salience of living and nonliving resource issues, as well as developments at the UNCLOS III conference with regard to new maritime zones, the ATCPs were forced to negotiate ad hoc sub-regimes that permitted them to maintain their control over both land and sea areas in Antarctica without affecting high seas freedoms in the area south of 60° South. The applicability of the Agreed Measures to marine areas also underwent revision, although a consensus did not immediately develop.[57]

Assessment of the Agreed Measures

The foregoing analysis reveals that the Agreed Measures regime had major structural deficiencies that were not evident when the pressure of human activities on Antarctic ecosystems were limited.[58] The standards of the regime became increasingly inadequate and anachronistic in light of the increased scale of human impacts caused by the expansion of states' interests in scientific research, and as environmental awareness began to develop rapidly in the 1970s and 1980s.

The lack of environmental awareness and domestic public concern in the initial phase also affected rigorous enforcement of the regime. Although the Agreed Measures were considered as interim guidelines after 1964, they did not formally enter into force until 1982. This stemmed from the fact that some ATCPs took over a decade to enact domestic legislation ratifying the Measures. The United States, Belgium, Australia and Japan

all cited complexities involving constitutional processes for the delay in giving effect to the Measures.[59] At the same time Antarctic conservation issues did not give rise to sufficient domestic concern to pressure governments into ratification. In the case of the US, objections from the Interior Department to the draft implementing legislation proposed by the State Department, and personnel shifts in agencies, caused a 14-year delay in Congressional approval of the Agreed Measures.[60]

The priorities of the late 1970s, such as the need of governments to justify resource regimes and bolster their environmental credentials at home and abroad, were the factors that ultimately precipitated the entry into force of the Agreed Measures. For some states, including Australia, the protection of sovereignty and environmental concerns in view of widespread speculation about resource activities were strong motivating factors.[61] At the same time the government in Canberra faced criticism from Parliament for delaying implementing legislation.[62] Nevertheless, with the change to a Labour government in 1983, the Australian government took an active role in attempting to update the protected area system in the face of growing pressure from environmental NGOs at home.

IV. Overhauling the Agreed Measures: The Impact of the Antarctic Protocol Regime

The end of the political consensus for a future Antarctic mining regime caused the negotiation of a new instrument to prohibit mineral resource activities in the Southern continent in 1990-91. The Madrid Protocol on Environmental Protection to the Antarctic Treaty, while imposing a 50-year ban on mining, at the same time addressed the need for updating the Agreed Measures regime. In overhauling the Measures, the issue of protecting fauna and flora was separated from the protection of areas through the adoption of two annexes.[63] The more comprehensive and integrated approach taken in the Protocol was perceived as necessary for

the protection of Antarctica for its intrinsic qualities, including its wilderness, aesthetic and scientific value, and in terms of its growing importance in global environmental processes.

Changing Scope of Fauna and Flora Conservation

The most conspicuous changes to the Antarctic fauna and flora conservation policy under Annex II involved the extension of protection to terrestrial and freshwater invertebrates and to native plants; the expansion of the definition of "harmful interference" with wildlife habitats to prevent disturbance to wildlife from the operation of helicopters, aircraft, vehicles or vessels; and significantly, the extension of "harmful interference" to cover all activity that resulted in the significant adverse modification of habitats of any species or population of native mammal, bird, plant or invertebrate.

Moreover, the Annex afforded greater protection to native mammals and birds by prohibiting their taking as food as permitted under the Measures. The latitude that governments had under the Measures to override the requirement of minimization of harmful interference with wildlife habitats in the establishment, supply and operation of stations, was considerably reduced by the proposed Annex. A permit is now required for any unavoidable consequences of the construction and operation of scientific support facilities; and governments are required to strictly regulate the number and nature of permits issued. The new regime established a measure of compliance by monitoring permits issued for the construction and operation of bases causing "harmful interference" to fauna and flora. The Committee for Environmental Protection (the advisory body to the ATCM for the implementation of the Protocol regime) has been accorded a coordinating and monitoring role in the exchange of information on permits (including their number and nature) issued annually by governments for taking fauna and flora and for conducting activities

involving "harmful interference" with wildlife. The Committee also has an advisory role in the review process of conservation measures by the ATCPs.[64]

Finally, Annex II afforded protection to fauna from imported diseases by imposing a ban on the introduction of dogs to Antarctica; those currently in the continent were to be removed by April 1994. Annex II has strictly regulated the importation of animals and plants and the introduction of micro-organisms to Antarctica.

Changing Scope of the Antarctic Protected Area System

The Madrid Protocol also expanded the protected area system and rationalized it in terms of its disparate categories of protection. Under Annex V on Area Protection Management, existing SPAs and SSSIs have been redesignated as Antarctic Specially Protected Areas (ASPAs). Any new area, including any marine area, was made eligible for similar designation to protect outstanding environmental, scientific, historic, aesthetic or wilderness values, any combination of those values, or ongoing or planned scientific research. Specific criteria assisting states in the identification of areas for ASPA status have also been established, along with a prohibition on entry except by permits issued according to stringent conditions. Thus, the Protocol cleared up much of the uncertainty as to the scope of the Agreed Measures in their application to marine areas. However, protection of the marine environment does not extend to the area covered by the Antarctic marine living resource regime. In addition, multiple planning area concepts were incorporated within the Annex by the creation of "Antarctic Specially Managed Areas" (ASMAs), a status which will be accorded to all areas where conflicting uses might arise.

Significantly, under the Protocol regime several entities have been afforded opportunities to propose areas for protection status: any ATCP or

acceding state, the Committee for Environmental Protection, SCAR and the CCAMLR Commission. The regime also establishes public input into the policy process by recognizing a role for environmental NGOs as observers on the Committee. Moreover, the Committee, as in Annex II was given a coordinating and monitoring role in the exchange of information on permits issued by governments and on measures taken by governments to implement the Annex including site inspections and actions on any violations of Management Plans. It will also have an advisory role to the ATCM on the approval of Management Plans. The Committee provides opportunities for a range of non-state experts to have input into the designation and management of areas.

Nevertheless, the failure of the Protocol regime to establish new institutions with substantial authority for interpretation, implementation, enforcement and compliance monitoring could limit the effectiveness of the Annexes on fauna and flora protection and the protected area system. Much of the effectiveness will be dependent on the system of inspection based on the Antarctic Treaty inspection mechanism (Article 14); the system of liability for environmental damage to be negotiated by the ATCPs (Article 16); and dispute settlement procedures (Articles 18-20).

V. Role of Non-State Actors in the Agreed Measures Regime

Although the Agreed Measures were not formally adopted as an international environmental convention, they provided the basic policy framework for protecting the unique fauna and flora of the Antarctic continent for the first two decades of the ATS regime. The predominant actors in the environmental policy formulation process were those governments of the ATCP states with an active presence in Antarctica and operating within the primary decision-making forum established by the Antarctic Treaty, the ATCM (Article IX). The Treaty, however, encouraged

an undefined level of participation in this process by non-state actors in the promotion of "international cooperation in scientific investigation in Antarctica." It identified to a degree the type and qualifications necessary for the participation of such non-state actors: for example, "Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica" (Article III [2]). Considerable latitude is granted to the ATCP states in the interpretation of this provision. In the absence of any explicit mention of conservation organizations in the Treaty, the ATCP governments were free to exercise their discretion as to which organizations were qualified to provide technical advice in the formulation and implementation of conservation policy. Moreover, the consensus approach to decision-making at ATCMs provided a veto to every state on the participation of conservation organizations, governmental or non-governmental.

The role of non-state actors in the Agreed Measures policy process can be conceptualized in terms of the activities of interest groups attempting to influence domestic policy processes through formal and/or informal channels. Due to the largely exclusive nature of the policy process, non-state actors have on the whole used informal channels to influence conservation policy. The following section will explore the role of non-state actors, especially SCAR and the IUCN, in the formulation and implementation of the Agreed Measures and its transformation under the Protocol. The debates within SCAR and the IUCN provide insights into the conflicts between the goals of Antarctic conservation and mineral resource exploitation.

Scientific Committee on Antarctic Research (SCAR)

The participation of non-state actors in the Agreed Measures regime grew in parallel with increasing awareness of the environmental effects of human activities in Antarctica as well as the increasing interest in the continent for its resources. Until 1977 when the United States included a public interest advisor on its delegation to the IXth ATCM at London (1977),[65] the only non-state actor involvement in the policy process was confined to the informal role of SCAR.

SCAR was concerned to promote vigorously an image of independence from, and non-involvement in, Antarctic politics and policy-making.[66] However, despite their apolitical and advisory role, most SCAR scientists have over the years shared common values, assumptions about appropriate policy outcomes on the conduct and direction of Antarctic science as well as on the type of conservation regimes that should be established. SCAR scientists belong to a transnational network of professionals with considerable access to policy-makers and politicians. They have sought to uphold the principle of freedom of scientific investigation in the Antarctic Treaty that guarantees access to the continent for the conduct of research. SCAR's membership consists of representatives of national SCAR affiliates who have interests in research projects that not only enhance their professional careers but also are perceived as bestowing national prestige on their states. Moreover, due to the fact that SCAR national committees are called on to advise their governments, some individual scientists, by virtue of their positions in national institutions or international scientific bodies as well as their professional prestige and achievements, are well placed to influence their governments' Antarctic policies.[67] Thus, although SCAR scientists are not formally organized as an interest group, they share common interests, values, preferences and assumptions about Antarctic research and the direction of conservation policy. And although the advice provided to the

ATCM is of a non-binding nature and as was previously evident, the ATCPs preferred occasionally to ignore such advice, SCAR enjoyed a privileged position with regard to its advisory role in influencing policies.

From the outset SCAR sought to take an apolitical approach to conservation issues and perceived itself as an enabling mechanism for informal and free discussion of problems. This was reflected in its refusal to give advice on the implementation and enforcement aspects of conservation in view of the sovereignty implications.[68] However, this political neutrality and informality has sometimes prevented SCAR from discussing freely issues pertaining to the compliance of the Agreed Measures bearing on the effectiveness of the regime. This was evident in its handling of the issues discussed earlier, pertaining to construction projects causing disturbance to the protected area system (i.e. the siting of *Bellingshausen* base and the construction of the Pointe Geologie airstrip). Moreover, the emphasis placed upon the autonomy of national SCAR committees did not promote free discussion of issues impinging on the objectives of conservation. Environmental impact assessment and waste disposal affected the effectiveness of the Agreed Measures, but SCAR was unable to address issues of compliance in deference to the autonomy of national committees. SCAR nevertheless accepted a coordinating and monitoring function at the request of the ATCPs on the collection of statistics on seals and birds killed and captured under permits and the status of such species under the Agreed Measures regime, a practice which ostensibly involves a degree of scrutiny of state compliance with the Measures that cannot be kept free of political overtones. In this regard it did express some criticism of the failure of national agencies to strictly adhere to the agreed reporting formats, on the grounds that these prevented accurate assessments of the status of populations of seals taken for food.[69]

SCAR's advisory role in the policy process of the Agreed Measures regime worked smoothly in its formative years. In the 1970s, however, SCAR

experienced problems attempting to enhance the effectiveness of the regime. This stemmed from the expansion of the national interests of the ATCPs into resource areas, in particular, Antarctica's offshore krill resources and potential mineral and oil deposits on the continental margin. A particularly instructive example was the failure of SCAR to get adequate protection of marine areas through SPAs and SSSIs. This was despite the fact that the ATCPs themselves had assured SCAR that protection of inshore marine areas was possible under the provisions of the Treaty and the Agreed Measures in 1975. Further constraints on SCAR's ability to strengthen the regime emerged from the extensive and urgent demands for advice on resource-oriented issues from the ATCPs. These partially diverted and put pressure on its modest financial resources. Such demands meant that SCAR had meagre funds to allocate for the conduct of basic research necessary for the identification of areas to be brought under the protected area system of the Agreed Measures.[70] It also meant that the Agreed Measures regime was partly overshadowed in the 1976-84 period by the priority placed by SCAR on assessing the environmental impacts of marine living and mineral resource exploitation as a prelude to political negotiations. However, the SCAR Working Group on Biology and its Conservation Sub-Committee made considerable efforts to prevent conservation issues from being overshadowed by resource priorities.[71]

Due in part to its financial problems, SCAR established relations with some of the other specialized international organizations which had an interest in Antarctic conservation. In this regard, the establishment of relations with the International Union for the Conservation of Nature and Natural Resources (IUCN) in the mid-1980s, after some clarifications with regard to the latter's goals for Antarctic conservation, resource exploitation and management regime, proved particularly useful. It enabled SCAR to obtain additional sources of funding and expertise for identifying scientific requirements for conservation before the ATCPs' interests in commercial exploration and exploitation of Antarctic resources became

entrenched.[72] The links were also vital in order to blunt criticism of the enforcement of the Agreed Measures regime, especially in light of the French airstrip construction project, levelled by environmental NGOs represented within IUCN.

A major product of the SCAR-IUCN collaboration was the presentation of a SCAR report to the 1987 ATCM that recommended additional protective measures based on a review of the effectiveness of SPA and SSSI concepts. Although the report provided the basis for streamlining the protected area system, many of the changes to the anachronistic elements of the Agreed Measures regime effected at the 1989 Paris ATCM, as was previously seen, were influenced to a large degree by the pressures exerted on the ATS by the informal alliance of ATCPs and environmental NGOs that advocated a comprehensive and integrated approach to environmental protection.

In light of the increased recognition of Antarctica for its intrinsic values, SCAR sought to clarify its conservation priorities in the post-1989 period in order to maintain its influence in the Antarctic environmental policy process.[73] However, the growing public demands for comprehensive environmental protection for Antarctica, especially the need for prior assessments of the impacts of scientific research, were perceived as "unnecessarily alarmist" and as "lead[ing] to unnecessarily severe constraints on the planning and implementation of [basic] scientific research."[74] The concept of a "World Wilderness Park" advocated by environmental NGOs, and on which the Madrid Protocol regime was in part modelled, was perceived as antithetical to the principle of free scientific investigation espoused by the Antarctic Treaty. The Protocol regime was thus received with less than full enthusiasm by SCAR. Several aspects of the new policy process was viewed as eroding SCAR traditional links with the Antarctic Treaty. For example, the Committee on Environmental Protection was viewed as a parallel institution that could potentially undermine its own role as primary advisor on environmental and conservation issues to the ATCMs. Moreover, there were fears of

competition for funding support from governments; duplication of scientific effort in management; diversion of funds from primary science to environmental monitoring; a disproportionate influence for environmental NGOs; and constraints on the work of Earth scientists.[75] The recognition accorded to interest groups in the ATS policy process has been perceived by some SCAR members as a politicization of the policy process.

These misgivings about the direction of the ATS regime were shaped in part by the diminution of SCAR's previously preeminent role in the advisory process of Antarctic conservation policy development in the first two decades of the regime. Although now accorded a formal role in the policy process, SCAR experienced difficulties in adapting to the changed policy environment under the Protocol regime. It has become simply one of several groups with expertise that have to compete for influence in the policy process. As we shall see later, environmental NGOs have been skilful at lobbying governments and influencing policy processes and international organizations at both the domestic and international level.

International Union for the Conservation of Nature and Natural Resources (IUCN)

IUCN, as the largest conservation organization in the world, became interested in the conservation of Antarctica even prior to the Antarctic Treaty's entry into force.[76] However, this initial interest was not maintained after the ATS regime was created. Interest was revived again in 1978 amid preparations for resource regimes within the Antarctic Treaty and as a result of the concern about potential environmental damage stemming from resource exploitation.[77] IUCN's hybrid character, especially its mixed membership of states (including twelve ATCP states), state environmental and resource agencies, scientific and environmental NGOs (including both SCAR and the Antarctic and Southern Ocean Coalition), provided a useful forum for raising such concerns at a time when the ATS

regime had few avenues for direct public participation in the policy process.

The reputation of IUCN as an autonomous conservation organization, as well as the higher profile that environmental NGOs enjoyed within it, provided a means for Antarctic conservation issues to be discussed without objection from the ATCPs. The Switzerland-based body thus became a major forum for establishing a dialogue with the ATCPs states which were reluctant to open up the ATCM policy process to "outside" organizations. Due to environmental NGOs' advocacy of a prohibition on potential Antarctic mineral resource development, IUCN debates on Antarctic conservation became highly contentious in the 1980s. The ATCPs and SCAR on one side, and environmental NGOs (led by ASOC) on the other, sought to influence the organization's policy recommendations. However, in spite of their numerical strength the environmental NGOs were not able to decisively influence the IUCN General Assembly in its triennial determination of policy until 1990, largely because of the rule that state members of IUCN have two votes and national NGOs collectively one vote.

IUCN's involvement with the Agreed Measures regime was inextricably linked to marine living and mineral resource issues. The adequacy of measures promoting protection of fauna and flora had to compete with issues of access to resources, freedom of the high seas, and freedom of scientific investigation in the establishment of conservation priorities. Some of the restrictions and prohibitions on human activities that went with strengthening and expanding the protected area system were perceived by most ATCPs, in particular the USSR and the US, as unnecessary restrictions on their freedom of action. SCAR saw them as impediments to the freedom of scientific investigation. IUCN thus faced major challenges reconciling the conservation, economic and political priorities of its heterogenous membership. The increasing complexity of issues meant that in addition to formulating recommendations on conservation policy, IUCN was also drawn into the debate about the future of Antarctica and its

appropriate management regime. However, in order to participate in and influence the largely exclusive Antarctic policy process, IUCN in making recommendations was compelled to tone down some of the criticisms voiced and changes demanded of the ATS regime by its own environmental NGO membership.

Nevertheless, within these constraints, IUCN sought to promote Antarctic conservation through its major policy document on the emergent global resource era, the *World Conservation Strategy* (WCS), the first edition of which was launched in 1980. This sought to persuade ATCPs to apply the concept of sustainable development to their new economic priorities in Antarctica. In particular, the WSC attempted implicitly to persuade all ATCPs to ratify the Agreed Measures.[78] However, WCS assumptions about Antarctica subsequently strained IUCN's relations with the ATCPs and SCAR. Due to the lack of universally recognized sovereignty in Antarctica, the WCS considered the continent and the circumjacent Southern Ocean as part of "The Global Commons." In light of the connotations of joint use of Antarctic resources by the world community involved in this classification, it raised some consternation among the ATCPs and SCAR and widened the internal rift within IUCN.[79]

IUCN policy debates on Antarctica in the 1980s were often contentious as the body had to reconcile the interests of the ATCPs states, the NGOs and a growing membership of developing countries. The stakes were high since IUCN's policy positions on any issue had considerable symbolic value. Thus environmental NGOs viewed IUCN as a mechanism to give authority and validity to their goal of having the entire Antarctic, or at least large parts of it, designated as protected areas. This followed the 1972 Second World Conference on National Parks' recommendation to the ATCPs on establishing the first World Park in Antarctica and its circumjacent ocean under the auspices of the United Nations.[80] Developing countries were keen to get the IUCN to endorse a UN-sponsored regime for the use of Antarctic resources. The ATCPs on the

other hand sought IUCN support for the status quo under the Antarctic Treaty and the Agreed Measures.

These divergent views were only partly reconciled at the IUCN's 1981 Christchurch General Assembly session. This meeting among other things recommended improvements to the Agreed Measures regime involving expansion of the protected area system. Most significantly, it was the IUCN Secretariat's aspiration to obtain direct access to the ATS policy process as an observer that drove the organization's policy stand. Thus, a conscious effort was made to remove any references both to the UN, as these had connotations of "internationalizing" Antarctica, and also to the idea of a wilderness park in view of the objections that the ATCPs had to any designation which implied a prohibition on mineral resource activities.[81] Instead, new concepts involving area protection acceptable to the ATCPs were explored throughout the mid-1980s.[82] A major policy document drawn up by the IUCN Secretariat also adopted a compromise approach that sought to balance conservation with mineral resource utilization.[83]

The IUCN's 1984 Madrid General Assembly session marked the zenith of the confrontation between ATCP governments and environmental NGOs over conservation policy priorities and specifically the implementation of the Agreed Measures. Debate focussed on a proposed Antarctic Conservation Strategy, the extent and adequacy of the protected area system, and the merits of the Antarctic World Park proposal. All were inextricably linked to the future management regime for Antarctica.[84] Although the environmental NGOs were unable to obtain endorsement of their proposals for a "World Park" designation for Antarctica or for the establishment of an Antarctic Environmental Protection Agency, they were nevertheless successful in focussing IUCN's attention on the effectiveness of the Agreed Measures regime by having the Madrid Assembly debate the issue of the French airstrip construction project (Pointe Geologie) and adopt a critical resolution on it.[85] The Madrid General Assembly was also

significant as Greenpeace International was finally admitted to IUCN membership despite objections from governments, and some other NGOs, about its controversial tactics.[86]

The IUCN Secretariat thought that to straddle the middle ground in the increasingly polarized debate about mining in the fragile Antarctic environment would provide the best opportunity for influencing the ATS policy process from the "inside."[87] Nevertheless, the organization was increasingly vulnerable to alienating itself from the largest segment of its membership, the environmental NGO community. In the mid-1980s this involved about 300 organizations and provided channels for public input into the policy process. Although left out of many collaborative IUCN-SCAR projects, environmental groups launched their own initiatives. Greenpeace's World Park Campaign included the establishment of the first non-governmental scientific station in Antarctica, for example, and it became the centre of a global public awareness and lobbying campaign that highlighted the problems involved in the enforcement of the Agreed Measures and other environmental regulations.

The publicity that NGO members of IUCN generated on these regulations led the 1988 IUCN General Assembly to express scepticism that the Antarctic minerals regime then under negotiation might not be able to "totally guarantee environmental protection" and that consequently, "the wilderness qualities and scientific values of Antarctica could be irreversibly destroyed."[88] The call for an Antarctic Conservation Strategy - an idea that the Secretariat was already working on was given new emphasis through the call for an inclusion of the "no mining" option.

The IUCN's NGO membership seized the opportunity presented by the 1989 Australia-France initiative proposing an Antarctic "wilderness reserve" based on a comprehensive approach to protection. Acceptance of the "no-mining" option by two influential ATCP states strengthened their case against the Antarctic minerals regime. The US Congress in particular was a major target of lobbying by domestic and transnational NGOs.[89] By

now the Agreed Measures had become a side issue. NGOs were well placed to push for a major policy shift at the 18th IUCN General Assembly at Perth in December 1990. The momentum behind the "no-mining" position had built up to influence developments at the Assembly. By pointing out the inconsistency of the draft Antarctic Conservation Strategy with the simultaneous consensus on a minerals ban reached at the first session of the XIth ATCM at Vina del Mar, NGOs were able to have key sections of the draft Strategy revised to include a permanent mining ban.[90] The only reservations raised during the consensus adoption of the Strategy were by the state delegations of the UK, the US and Norway.[91]

In its final format the Antarctic Conservation Strategy thus reflected the influential contribution of environmental NGOs in what had originally been a largely exclusive process of IUCN/SCAR collaboration.[92] Moreover, the resolution on Antarctica adopted by the Perth General Assembly "strongly recommend[ed]" that the ATCPs and all other interested Governments and NGOs "work towards the adoption of a comprehensive environmental protection regime for Antarctica embodied in legally binding agreements," including "a permanent exclusion of mineral prospecting, exploration and exploitation."[93] The Resolution was transmitted to the Vina del Mar session of the ATSCM. It represented the most decisive policy position adopted by IUCN on Antarctic conservation and served to tilt the momentum within the ATS towards the "no-mining" position. Similarly, the *Strategy for Antarctic Conservation* which was circulated at the Madrid session of the XIth ATSCM (April 1991) provided guidance to the ATCPs in their development of a comprehensive environmental protection regime under the Protocol.

In sum, IUCN's stature within the global conservation movement allowed its non-governmental membership to use it as an effective strategy of influence to exert pressure on the ATCP states for the adoption of a comprehensive environmental policy that involved a mining ban.

VI. Conclusion

This chapter has explored how the conservation sub-regime emerged and evolved under the Antarctic Treaty regime. The policies that were formulated and implemented under the Agreed Measures for the Conservation of Fauna and Flora have for the most part been shaped since 1964 by the dominant interests, perceptions and priorities of the ATCP governments and by the steady growth in environmental awareness generated by non-state actor participation in the policy process.

Although in the first decade (1964-74) many of the regime's policies were directed towards preventing undue damage to flora and fauna from scientific research and logistical support activities, conservation interests did not get major priority when decisions were made on the location of scientific stations.

In the second decade (1975-85) the effectiveness of conservation policies was further constrained as the ATCPs' began to negotiate regimes for the commercial exploitation of Antarctica's living (krill and fish) and non-living (mineral and hydrocarbon) resources. The increasing emphasis placed upon access to resources, and freedom of scientific investigation to conduct resource assessments, was evident in the latitude of states in overriding environmental considerations involving the construction of logistic facilities, the slow expansion of the protected area system, the uncertain scope of the regime in its application to marine areas, the delayed recognition of wilderness values, and the delayed entry into force of the Agreed Measures. The issue of disputed sovereignty in Antarctica further accentuated the ineffectiveness of the regime in terms of its institutional lacunae, especially with regard to enforcement and compliance monitoring.

The Agreed Measures regime was negotiated at a time when environmental issues, global and Antarctic, were insufficiently salient to generate public interest. Even within the 12 ATCP states (the original

signatories to the Antarctic Treaty), public knowledge and awareness of Antarctic environmental issues was marginal and restricted to a policy community of diplomats and scientists bound by close ties and shared perceptions of the policy direction. The role of SCAR in the first two decades of the Antarctic policy process can be viewed as that of an "epistemic community":[94] a group whose expertise, based on common beliefs, values and approaches to Antarctic conservation, allowed them to play an influential role in defining the scope of the Agreed Measures regime. Moreover, the structure and procedures of the policy-making process at biennial ATCMs, characterized by an emphasis on secrecy, did not foster public interest or awareness of Antarctic policy issues. Until the early 1980s, the reports and documents of the ATCMs did not receive wide circulation. Some information pertaining to expansion of the scope of the protected area system to marine areas was not published due to the perceived sensitivity of the issue.

Thus the structure of the regime, and the wide discretion granted to states in the determination of the eligibility and scope of participation of non-state actors, reinforced exclusivity. The internalized policy process was unable to respond adequately to the demands for participation and input by non-state actors, particular conservation groups. As evident in the case of IUCN, the access to the ATCM environmental policy process was contingent on its clarifications and assurances about its policy preferences on Antarctic conservation. This also had the effect of entrenching a particular sets of values, assumptions, preferences and perceptions that acted as criteria for permitting non-state actor participation. Environmental NGOs, articulating a different set of values, assumptions and policy preferences to that of SCAR and the ATCPs, initially found major barriers to access and participation both directly in the regime, and indirectly through their membership in IUCN. Environmental awareness in the 1980s helped NGOs mobilize public opinion in the domestic political processes of many Western ATCPs. The subsequent

opening up of direct and indirect channels of NGO participation was stimulated more as a result of the ability of such organizations to mobilize public opinion than as a result of the ATCP governments' recognition of non-state actors' right to know, to have access to information, or to be consulted and participate in policy formation.

Notes for Chapter 3

1. *SCAR Bulletin* (1961), "Conservation of Nature in Antarctica," No. 8 in *Polar Record* Vol. 10, pp. 532-40.

2. Ibid., p. 533.

3. See Recommendation III-VIII in "Report of Third Antarctic Treaty Consultative Meeting, Brussels, 1964" in *Polar Record* (1966) Vol. 12, pp. 457-62.

4. At the 1962 Buenos Aires ATCM the UK proposed a draft Convention for protecting Antarctic wildlife. See Recommendation II-II in "Report of Second Antarctic Treaty Consultative Meeting, Buenos Aires, 1962" *in Polar Record* (1962) Vol. 11, p. 467. See also comments of David Anderson (Assistant Legal Adviser, UK Foreign and Commonwealth Office and member of UK ATCM Delegations) in Anderson (1968), "The Conservation of Wildlife Under the Antarctic Treaty" in *Polar Record* Vol. 14, p. 26.

5. See comments of a Belgian negotiator, Alfred Van der Essen in Van der Essen (1983), "The Application of the Law of the Sea to the Antarctic Continent" in Orrego Vicuña [ed], *Antarctic Resources Policy: Scientific, Legal and Political Issues*, p. 236.

6. *SCAR Bulletin* (1961), pp. 533-4.

7. Van der Essen (1983), p. 236.

8. See Recommendation III-IX in *Polar Record* (1966), p. 462.

9. See comments of a British negotiator, Brian Roberts in Roberts (1977), "Conservation in the Antarctic" in *Philosophical Transactions of the Royal Society of London* Vol. 279B, p. 100.

10. See *SCAR Bulletin* (1987), "Seals and Birds Killed or Captured in the Antarctic, 1975-85," No. 86 in *Polar Record* Vol. 23, pp. 622-7.

11. See Recommendation VI-8 (Permits for Entry to Specially Protected Areas) in "Report of Sixth Antarctic Treaty Consultative Meeting, Tokyo, 1970" in *Polar Record* (1971) Vol. 15, pp. 738-9.

12. See Recommendation IV-18 in "Report of Fourth Antarctic Treaty Consultative Meeting, Santiago, Chile, 1966" in *Polar Record* (1967), Vol. 13, p. 636.

13. See Recommendation VII-2 in "Report of the Seventh Antarctic Treaty Consultative Meeting, Wellington, 1972" in *Polar Record* (1973), Vol. 16, pp. 604-5; and Recommendation VIII-2 in *SCAR Bulletin* (1976), p. 206.

14. See Recommendation VIII-3 in *SCAR Bulletin* (1976), pp. 207-8.

15. See Recommendation VI-7, (1) & (2)-[c] in *Polar Record* (1971), p. 738.

16. See Recommendation IV-12 (Specially Protected Areas: Fildes Peninsula) in *Polar Record* (1967), Vol. 13, p. 634.

17. SCAR found that the Fildes Peninsula's freshwater lake had been contaminated by activities at the *Bellingshausen* and *President Frei* [Chilean] stations situated within the SPA and therefore had lost its scientific value. *SCAR Bulletin* (1975), "Thirteenth Meeting of SCAR, Jackson Hole: 3-7 September 1974," No. 49 in *Polar Record* Vol. 17, p. 443.

18. See Recommendation VIII-4 in *SCAR Bulletin* (1976), "Report of the Eighth Antarctic Treaty Consultative Meeting, Oslo, 1975," No. 53 in *Polar Record* Vol. 18 pp. 215-6.

19. See comments of Bernard Morlet (French Department for Austral and Antarctic Territories) reported in *Nature* (1989), "Greenpeace's Claims Refuted" Vol. 338, p. 9.

20. See statement by France in United Nations. General Assembly (1984), *Question of Antarctica: Study Requested Under General Assembly Resolution 38/77: Report of the Secretary General: Views of States*, Doc. A/39/583 (Part II), Vol. 2, p. 64.

21. See Jouventin et al. (1984), "The Seabirds of the French Subantarctic Islands and Adèlie Land" in Croxall et. al [ed], *Status and Conservation of the World's Seabirds*, International Council for Bird Protection Technical Publication, No. 2, pp. 609-25.

22. Greenpeace International (1984), *The Future of Antarctica: Background for a Second UN Debate*, p. 11.

23. As a result of the public opprobrium in France and other Western ATCP states stemming from the publicity given to the photographic and film evidence of the destruction of wildlife gathered by NGOs, France temporarily suspended the construction project to enable adequate environmental impact assessments to be carried out between 1984-88. Ibid., pp. 10-12; May [ed] (1989), *The Greenpeace Book of Antarctica: A New View of the Seventh Continent*, pp. 136-7.

24. See comments by two French scientists (Drs. Pierre Jouventin and Vincent Bretagnolle) attached to the environmental impact minimization and monitoring program at Pointe Geologie in Jouventin and Bretagnolle (1991), "Life on the Antarctic: Why and How to Protect It" in Patel and Mayer [eds], *Antarctica: The Scientists' Case for a World Park*, Compiled by Greenpeace-UK, pp. 43-4.

25. Roberto Guyer, an Argentine Antarctic diplomat, has commented that the creation of a secretariat or any centralized organ was inhibited by the desire of some ATCPs to "avoid, even by implication, the possibility of an internationalisation of the [Antarctic]...[and] to avoid the establishment of a cumbersome and costly organism." Guyer (1973), "The Antarctic System" in *Recueil des Cours de l'Academie de Droit International* Vol. 139 (II), p. 190. Edvard Hambro, a Norwegian Antarctic diplomat noting the lack of "even [a] common archives" for the ATS observed that "certain of the contracting parties have also opposed any kind of institutionalization." Hambro (1974), "Some Notes on the Future of the Antarctic Treaty Collaboration" in *American Journal of International Law* Vol. 68, p. 224.

26. Recommendation V-6 in *Polar Record* (1969), pp. 668-9.

27. Recommendation VI-9 in *Polar Record* (1971), p. 739.

28. The SCAR Working Group on Biology reported in 1982 that it received "disturbing reports of incidents in contravention of the Agreed Measures concerning the wilful destruction of birds by research station personnel and ships' crews, and of dogs being imported to the Antarctic, or being allowed to run free, in some cases killing large numbers of penguins." *SCAR Bulletin* (1983), "Seventeenth Meeting of SCAR, Leningrad, USSR: 5 to 9 July 1982" No. 73 in *Polar Record* Vol. 21, p. 419.

29. See "Report on the Protected Area System in the Antarctic by the SCAR Ad Hoc Group on Additional Protective Measures" in Bush [ed] (1991c), *Antarctica and International Law: A Collection of Inter-State and National Documents: Part 1-Antarctic Treaty Regime: Documents of the Fourteenth Antarctic Treaty Consultative Meeting 1987*, Booklet AT3, Doc. AT22061987, p. 11.

30. Ibid., p. 2.

31. Federated Republic of Brazil. Ministry of External Relations (1987), *Antarctic Treaty: Final Report of the Fourteenth Consultative Meeting: Rio de Janeiro 5-16 October*, pp. 35-6.

32. *SCAR Bulletin* (1973), "Twelfth Meeting of SCAR, Canberra, 14 to 19 August 1972" No. 43 in *Polar Record* Vol. 16, p. 636.

33. Recommendation VII-2 [3-4] in *Polar Record* (1973), p. 605.

34. "Report of the Protected Area System in the Antarctic by the SCAR Ad Hoc Group on Additional Protective Measures" in Bush [ed] (1991), p. 11.

35. Greenpeace International (1990), *Expedition Report: Greenpeace Antarctic Expedition 1989/90*, pp. 50-1.

36. See "Australian Paper Proposing the Concept of Managed Areas" in Bush [ed] (1991b), *Antarctica and International Law: A Collection of Inter-State and National Documents: Part 1-Antarctic Treaty Regime: Documents of the Thirteenth Antarctic Treaty Consultative Meeting 1985*, Booklet AT2, Doc. AT08101985, p. 9.

37. Kingdom of Belgium. Ministry of Foreign Affairs, External Trade and Co-operation in Development (1986), *Final Report of the Thirteenth Antarctic Treaty Consultative Meeting: Brussels, 7-18 October 1985*, pp. 20-1.

38. Australia's emergence as a leading proponent of the wilderness values of Antarctica can be traced to the early 1980s. After playing an influential role in the negotiation of the marine living resource conservation regime based on the ecosystem-as-a-whole concept in the late 1970s, Australia was the only state, among the 54 states that responded to the UN Study on the "Question of Antarctica" to address such values. While being supportive of the continent's resource and economic values in terms of potential minerals which it subsequently renounced, Australia also addressed its non-consumptive values, what it called the "passive utilization of wilderness" in Antarctica, i.e. the continent's existence as a "real place to which [people] can mentally escape from the pressures of life" and its popularization in the "production and enjoyment of documentary material (books, articles, photographs, films)"; it perceived that "[m]uch of the public support for the concept of the Antarctic as a wilderness reserve may stem from this passive appreciation of wilderness and active concern that its attributes are maintained." See statement by Australia in United Nations. General Assembly (1984), pp. 64-5.

39. See comments of Roger Wilson (Greenpeace International) in May [ed] (1989), p. 172.

40. See "Report on the Protected Area System in the Antarctic by the SCAR Ad Hoc Group on Additional Protective Measures" in Bush [ed] (1991), p. 2.

41. Federated Republic of Brazil. Ministry of External Relations (1987), p. 40.

42. Recommendation XV-8 in Republic of France (1989), *Final Report of the Fifteenth Antarctic Treaty Consultative Meeting: Paris, 9-20 October*, pp. 78-9.

43. Recommendation XV-11. Ibid., pp. 84-6.

44. Ibid., pp. 30-1; 84-6 [Recommendation XV-11].

45. Australia. Department of the Office of the Prime Minister (1989), "Joint Statement on International Environmental Issues Agreed by the Prime Ministers Hawke and Rocard, Canberra, 18 August 1989."

46. See Recommendation III-XI in *Polar Record* (1966), pp. 462-3.

47. During the VIIIth ATCM at Oslo in 1975, the delegates of the ATCP states and their legal advisors met with the President of SCAR and reviewed the applications of both Article VI of the Antarctic Treaty and Article I of the Agreed Measures in light of SCAR's opinion that the protected area system under the Measures could not be extended to marine areas. Consequently, SCAR was advised that "such a designation of marine areas was possible under the provisions of the Treaty and the 'Agreed Measures'." See *SCAR Bulletin* (1975), "Report of the SCAR Executive Meeting, Cambridge, 25-26 June 1975" No. 51 in *Polar Record* Vol. 17, p. 711.

48. Roberts (1977), p. 98.

49. United Kingdom. Foreign and Commonwealth Office (1977), *Antarctic Treaty: Report of the Ninth Consultative Meeting: London 19 September-7 October*, p. 9.

50. United States. Department of State (1979), *Antarctic Treaty: Report of the Tenth Consultative Meeting: Washington, D.C. September 17-October 5*, p. 8.

51. See "Draft Chilean, British and Argentine Recommendation to Establish South Bay, Doumer Island, Palmer Archipelago as a Site of Special Scientific Interest" in Bush [ed] (1991a), *Antarctica and International Law: A Collection of Inter-State and National Documents: Part 1- Antarctic Treaty Regime: Documents of the Twelfth Antarctic Treaty Consultative Meeting 1982-83*, Booklet AT1, Doc. AT22091983, pp. 38-40.

52. The proposed management plan was carefully drafted by Chile, Argentina and UK (all of whom were claimants in the area) to provide for the freedom of navigation in the area and minimal environmental regulation. Australia. Department of Foreign Affairs (1984), *Antarctic Treaty: Report of the Twelfth Consultative Meeting, Canberra, 13-27 September, 1983*, p. 9.

53. See REC XVII-BIOL-1 in *SCAR Bulletin* (1983), p. 418.

54. Australia. Department of Foreign Affairs (1984), p. 10.

55. See comments of John Rowland, ex-Australian Antarctic diplomat on the Soviet Union's conspicuous and persistent opposition among non-claimants to the designation of marine SSSIs in order to uphold its freedom of action in the high seas. Rowland (1988), "The Treaty Regime and the Politics of the Consultative Parties" in Joyner and Chopra [eds], *The Antarctic Legal Regime*, p. 28.

56. See Recommendation XIV-5 in Federated Republic of Brazil. Ministry of External Relations (1987), pp. 79-118.

57. Ibid., p. 38.

58. At one time the Agreed Measures were lauded by an Antarctic diplomat as "one of the most comprehensive and successful international instruments for wildlife conservation on land that has yet been negotiated." See comments of British diplomat Brian Roberts in Roberts (1978), "International Cooperation for Antarctic Development: The Test for the Antarctic Treaty" in *Polar Record* Vol. 19, p. 109.

59. See statement of Robert C. Brewster (Department of State) in United States. Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1978), *Fish and Wildlife Miscellaneous, Part 1*, Hearing (Serial 95-18), Sept. 12, 95th Cong., 1st Sess,. pp. 284.

60. See testimony of Department of State in United States. Congress. Senate. Committee on Foreign Relations (1978), *Exploitation of Antarctic Resources*, Hearing, Feb. 6, 95th Cong., 2nd Sess., pp. 29-30.

61. Speech by David Thomson, Minister for Science and the Environment in the debate on the Antarctic Treaty (Environment Protection) Bill in Australia. Parliament. House of Representatives (1980), *Parliamentary Debates: Weekly Hansard*, No. 8, 31st Parl., 1st Sess., April 23, pp. 2185-6.

62. See remarks of Senators Sibraa and Puplick in the debate on the Antarctic Treaty (Environment Protection) Bill in Australia. Parliament. Senate (1980), *Parliamentary Debates: Weekly Hansard*, No. 11, 31st Parl., 1st Sess., May 23, pp. 2796; 2804.

63. During the 1990-91 negotiations Annex II on "Conservation of Antarctic Fauna and Flora" (see APPENDIX 4) was adopted. An additional Annex V on "Area Protection and Management" (see APPENDIX 5) was subsequently negotiated as a Recommendation at the 1991 Bonn ATCM. Both are scheduled to come into force at the same time as the Protocol on ratification by all ATCPs that negotiated it.

64. However, some NGOs such as ASOC have cautioned that the application of the permit system for this purpose "will be misused to allow for projects, such as the airstrip at Dumont d'Urville, to go forward and impact significantly on local wildlife." See "A Critique of the Protocol to the Antarctic Treaty on Environmental Protection (Submitted by ASOC)," Antarctic Treaty XVIth Consultative Meeting, Bonn (1991), Doc. XVI ATCM/INFO 21, October 8, p. 7.

65. Patricia Scharlin-Rambach of the San Francisco-based environmental NGO, Sierra Club was the first public interest NGO to attend a ATCM. *SCAR Bulletin* (1976), p. 85.

66. The SCAR Constitution attempted to institutionalize the separation of science and politics. *SCAR Bulletin* (1987), "SCAR Constitution" No. 85 in *Polar Record* Vol. 23, p. 492.

67. Some US Antarctic scientists interviewed for this study, speaking off the record, acknowledged that in specific circumstances favourable conditions existed for scientists engaged in research fields to act as informal lobby groups to influence government decisions, especially with regard to funding. But they insisted that not all scientists were inclined to get politically organized or were adept at such activity.

68. E.g. on the issue of authorization of certain prohibited activities within protected areas which had implication for the exercise of sovereignty in Antarctica, SCAR advised the ATCPs that such an issue "must remain a matter for discussion between the responsible authorities" although it provided some guidelines for helping states draw up regulations. See *SCAR Bulletin* (1961), pp. 535; 538-40.

69. *SCAR Bulletin* (1984), "SCAR Group of Specialists on Seals: Report of a Meeting Held in Pretoria, South Africa, 7-8 September 1983" No. 77 in *Polar Record* Vol. 22, pp. 242-4.

70. *SCAR Bulletin* (1981), "Sixteenth Meeting of SCAR, Queenstown, New Zealand: 14-24 October 1980" No. 68 in *Polar Record* Vol. 20, p. 491.

71. E.g., the updating of the Working Group's statement of its biological program *in SCAR Bulletin* (1984), "Biological Research in the Antarctic" No. 77 in *Polar Record* Vol. 22, pp. 221-6; and the 1985 publication of an atlas of the protected area system *Conservation Areas in the Antarctic* edited by two leading Antarctic biologists W.N. Bonner and R.I. Lewis Smith. See *SCAR Bulletin* (1985), "Eighteenth Meeting of SCAR, Bremerhaven, FRG: 1 to 5 October 1984" No. 80 in *Polar Record* Vol. 22, pp. 589-90.

72. SCAR Bulletin (1985), "Joint IUCN/SCAR Symposium on the Scientific Requirements for Antarctic Conservation" No. 81 in *Polar Record* Vol. 22, pp. 730-1.

73. See *SCAR Bulletin* (1989), "Objectives of Conservation in the Antarctic" No. 93 in *Polar Record* Vol. 25, pp. 181-3.

74. See "Report from the Scientific Committee on Antarctic Research (SCAR) to the XVIth Antarctic Treaty Consultative Meeting: A Framework for Antarctic Science into the XXIst Century: SCAR Perspectives on Antarctic Research and Management" in Federal Republic of Germany (1991), p. 241.

75. However, some scientists have welcomed a more rigorous environmental regime on the grounds that it will guarantee the largely pristine nature of the Antarctic continent for the conduct of atmospheric, oceanic and glaciological sciences which are critically dependent on uncontaminated conditions which act as a baseline for measuring environmental change elsewhere on Earth. See Patel and Mayer [eds] (1991).

76. See International Union for Conservation of Nature (1991a), *A Strategy for Antarctic Conservation*, p. 74.

77. International Union for Conservation of Nature (1979), *14th Session of the General Assembly of IUCN and 14th IUCN Technical Meeting: Ashkhabad, USSR: 26 September-October 1978: Proceedings*, pp. 55-7.

78. International Union for Conservation of Nature (1980), *World Conservation Strategy: Living Resource Conservation for Sustainable Development*, section 18.

79. See comments of W.N. Bonner, Chair, Conservation Subcommittee of SCAR Working Group on Biology to a 1985 conference on Antarctica in Bonner (1987), "Recent Developments in Antarctic Conservation" in Triggs [ed], *The Antarctic Treaty Regime: Law, Environment and Resources*, p. 146.

80. Recommendation 5 in Elliott [ed] (1974), *Proceedings of the Second World Conference on National Parks: Yellowstone and Grand Teton National Parks, U.S.A., 1972*, pp. 443-4.

81. Resolution 15 in International Union for Conservation of Nature (1983), *Proceedings: 15th Session of the General Assembly of IUCN and 15th IUCN Technical Meeting: Christchurch, New Zealand: 11-23 October, 1981*, pp. 60-5.

82. Recommendation 4 in McNeely and Miller [eds] (1984), *National Parks, Conservation, and Development: The Role of Protected Areas in Sustaining Society: Proceedings of the World Congress on National Parks, Bali, Indonesia, 1982*, p. 767.

83. Timberlake and Cheney [eds] (1984), *Conservation and Development of Antarctic Ecosystems*.

84. The conflicting priorities of governments and NGOs was evident in the comments made by the UK governmental delegate, Dr. John Heap (Foreign Office) and the Honourary Chairman of the International Council of the World Wildlife Fund, the late Sir Peter Scott. Dr. Heap reportedly told the Madrid General Assembly that "[t]here was no way the United Kingdom is going to agree that conservation is the paramount [Antarctic policy] issue". Scott told the Assembly that "[t]he continent of Antarctica does not belong to the treaty nations in perpetuity. Its integrity is the concern of all mankind". Quoted in *Times* [London] (1984), "Scott Rallies Defenders of Antarctica" November 10, p. 7.

85. International Union for Conservation of Nature (1986), *Proceedings: 16th Session of the General Assembly of the IUCN and 16th IUCN Technical Meeting: Madrid, Spain: 1984*, pp. 35 and 105.

86. Ibid., pp. 21-2.

87. See remarks by Director General Kenton Miller to a 1985 international workshop on the ATS reported in *IUCN Bulletin* (1985), "Memorandum: Antarctica: IUCN Action Under Way" Vol. 16, p. 3.

88. See Resolution 17/53 in International Union for Conservation of Nature and Natural Resources (1988), *Resolutions and Recommendations: 17th Session of the General Assembly, San Jose, Costa Rica*, pp. 27-8.

89. The lobbying activities of Capt. Jacques-Yves Cousteau on behalf of the Cousteau Society, with offices in France and the US, was a major source of influence on the US Congress' decision not to ratify the Antarctic minerals convention, to adopt legislation prohibiting US citizens and companies from engaging in Antarctic mineral resource activities and to call on the Bush Administration to negotiate a permanent ban on such activities within the Antarctic Treaty regime. See *Washington Post* (1989), "Cousteau's Washington Plunge: Charming the Town for Antarctica" September 21, pp. C1 and C15; see also United States.

Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1990), *Antarctica Briefing With Jacques-Yves Cousteau*, Hearing (Serial 102-85), May 2, 101st Cong., 2nd Sess.

90. The Strategy claimed that "[t]he overwhelming majority of IUCN members are of the firm opinion that mining (indeed minerals activities of all kinds) should never occur in the Antarctic" and recommended that the "exclusion of mineral resource activities from Antarctica is the logical choice from a conservation standpoint." See International Union for Conservation of Nature (1991a), pp. 62; 64.

91. International Union for Conservation of Nature (1991b), *Proceedings: 18th Session of the General Assembly of IUCN: Perth, Australia: 28 Nov - 5 Dec, 1990*, pp. 31-2; 41-3.

92. International Union for Conservation of Nature (1991a), p. 73.

93. See Recommendation 18/75 International Union for Conservation of Nature (1991b), p. 76.

94. This concept has been elaborated along roughly similar lines by Ernst Haas and Peter Haas. See Haas, E. B. (1990), *When Knowledge is Power: Three Models of Change in International Organizations*, p. 42; and Haas, P. M. (1990), *Saving the Mediterranean: The Politics of International Environmental Cooperation*, p. 55.

Chapter 4 The Politics of Implementing Antarctic Environmental Impact Assessment and Waste Disposal Policies

I. Introduction

In the first decade of the Antarctic Treaty regime's operation, the Agreed Measures regime was considered adequate to control the impacts of scientific bases. But the expansion of the presence and activities of states in the mid-1970s in pursuit of resource-oriented scientific interests necessitated the creation of ad hoc sub regimes to control and mitigate impacts beyond the local disturbances of wildlife populations. This Chapter will analyze the implementation of policies of the sub-regimes established for Antarctic environmental impact assessment (EIA) and for waste disposal. It will assess the effectiveness of such policies by focussing on the interplay between the domestic and international processes of the sub-regimes and their linkages with other issue areas.

The chapter will first assess the significance of IA and waste management in the context of the sensitivity of Antarctic ecosystems and the emergence of environmental awareness, and the influence of the US domestic milieu in the emergence of Antarctic Treaty regimes for both issue areas. It will investigate the influences and constraints on the establishment of these regimes. The chapter will then examine the national responses to implementation in the formative phase of the regimes. The US domestic implementation process will serve as an instructive example of the factors that impaired the effectiveness of EIA. It will then focus on the external and internal pressures on the ATS regime that influenced the ATCP governments to establish stronger regimes in the 1980s and identify some of the constraints on such endeavours. The chapter will then evaluate the opportunities and constraints on effective implementation of EIA and waste management policies presented by the new emphasis on the environmental values of Antarctica by the Madrid Protocol regime. The

discussion will then focus on the unique circumstances of the US domestic process that have enhanced the enforcement potential of EIAs under the Protocol regime. Throughout the chapter, particular attention will be paid to the influential role played by environmental NGOs both at the international and domestic levels in enhancing the effectiveness of these regimes.

II. Environmental Impact Assessment, Antarctic Ecosystems and Environmental Awareness

Environmental impact assessment by definition involves a precautionary approach to decision-making in the planning and execution of human activities. It provides a "look before you leap" warning to policy-makers to base decisions on adequate knowledge about the potential damage to the natural environment and on a maximum range of options. The need for knowledge in successful EIA is contingent on broader questions of awareness of habitats and ecosystems, their interconnectedness, and humankind's own relationship with nature. Awareness of the vulnerability and fragility of Antarctica's ecosystems and their interrelated nature were vital factors in the development of policies to mitigate the impacts of the human presence in the continent.

This environmental consciousness was slow to develop. As already seen in Chapter 2, the first large-scale human presence in Antarctica generated by the IGY had been established without apparent awareness of the difficult conditions for the survival of the region's plant and animal life, the simplicity of its ecosystems, and the slow rate of biodegradation of pollutants in its frigid temperatures. The policy vacuum on EIA or waste disposal was particularly evident in the criteria used (for example, scientific needs, speed and logistical convenience)[1] to select sites for scientific stations located in the two percent of ice-free coastal areas of Antarctica that were also the sites of local

wildlife habitats; in their subsequent (post-IGY) expansion, necessitated by the political, strategic and scientific imperatives of a permanent presence; and in the problems of disposing of wastes generated by the introduction of higher volumes of man-made materials into a cold, dry environment.[2] By the late 1960s some Antarctic scientific bases became almost like urban sprawls, with the inevitable local pollution problems.[3] The mechanics for fostering environmental awareness, such as environmental monitoring necessary for documenting evidence of the impacts as well as the education of station personnel on appropriate environmental conduct, were not established because of the low priority placed on environmental issues. Thus ironically, it was apparent that the conduct of science in the absence of rules to control its impacts had the potential to undermine the scientific value of Antarctica, which was derived largely from its near pristine and undisturbed condition. Both EIA and waste disposal raised fundamental questions about the environmental sustainability of human presence and activities.

The Influence of the US Domestic Milieu on Antarctic Environmental Policy

Several parallel developments in the domestic contexts of Western industrialized countries in the 1970s drew attention to the emerging environmental problems in Antarctica. First, the continent became the target of intense interest for its resources stimulated by a shift in the focus of Antarctic marine and geological research.[4] Secondly, the wave of environmental awareness and concern among Western publics which had given environmental issues political saliency at home also had its influence on Antarctic Treaty governments and scientists. Recognition of the worldwide and long-range transboundary nature of environmental problems prompted the ATCP states to contemplate some of the same safeguards for Antarctica that they had enacted through their domestic environmental policies. The 1970 Tokyo ATCM was a landmark in this regard; it was the first

intergovernmental forum to address the environmental impacts of increasing human activity in Antarctica, including scientific research and logistics.[5]

Much of the impetus for measures to prevent or minimize harmful human interference came from the US. President Nixon in a 1970 US policy review stressed the need "to protect the Antarctic environment." At the same time he attempted to keep US resource interests alive, by calling for "appropriate measures to insure the equitable and wise use" of the continent's living and non-living resources.[6] The American initiative can be seen in the context of its domestic environmental laws, especially the National Environmental Policy Act (NEPA) of 1969. This broke new ground in national environmental legislation by recognizing, among its goals, the federal government's obligation to "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." NEPA directed all federal agencies to "recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment". Consequently, NEPA mandated an environmental impact statement (EIS) for "[proposed] major Federal actions significantly affecting the quality of the human environment."[7] NEPA's influence on US Antarctic policy-makers was evident in the 1973 decision to prepare the first-ever environmental impact assessment and monitoring process for a major scientific research project in Antarctica in accordance with NEPA guidelines: the Dry Valley Drilling Project, involving the US, Japan and New Zealand.[8]

Moreover, domestic US debates about the scope of NEPA's applicability to foreign soil also had some influence on US Antarctic policy-makers. Environmental agencies, particularly the Council on Environmental Quality, exerted pressure on the lead agencies responsible

for implementing US Antarctic policy (the State Department and the National Science Foundation) to conduct EIAs for US government initiatives in Antarctica.[9] There was also pressure from the American tradition of judicial review of public policy, which became a major tool of influence for environmentalists. The reluctance to conduct prior assessments of proposed development projects under NEPA by some agencies became grounds for the proliferation of public interest litigation by environmental NGOs to force government agencies to enforce NEPA provisions throughout the 1970s. This was a period widely perceived in US politics as the "environmental decade" when the US judiciary emerged as the principal enforcer of NEPA in the domestic arena.[10] In the foreign policy arena, some environmental groups had achieved a measure of success in compelling the application of NEPA to proposed projects abroad,[11] thus establishing possible precedents for its application for US activities in Antarctica. US policy on EIA was also influenced by its scientists, especially biologists, who were concerned to alert policy-makers about the possible stresses upon the Antarctic marine and terrestrial ecosystems from potential resource exploitation.[12] Their research on the continent had provided scientific evidence of emerging pollution problems at and around US bases and field camps, as well as the close links between Antarctica's atmospheric and oceanic systems. This evidence was also instrumental in drawing attention to the adequacy of the Agreed Measures to deal with impacts from increasing human activities on the continent.[13]

III. The International Politics of EIA and Waste Disposal in Antarctica: Influences and Constraints

Following the 1972 United Nations Conference on the Human Environment (UNCHE) at Stockholm, the need for national and international pollution abatement, control and regulatory measures received much impetus. There were spill-over effects on Antarctic environmental impacts

as well.[14] At the policy-making level, however, there were sharply divergent views on adopting mandatory, universal and uniform EIA rules modelled on the US NEPA regulations for major scientific projects with potentially significant environmental impacts. These differences surfaced at the 1972 Wellington ATCM.[15]

Nevertheless, international developments provided further momentum for EIA and waste disposal rules in Antarctica. Growing domestic pressures in several Western industrialized ATCP nations for diversification and expansion of sources of supply of strategic oil and other mineral resources following the 1973 world oil crisis stimulated international interest in Antarctic oil and hydrocarbons. In this regard the 1975 Oslo ATCM marked a watershed in the development of Antarctic policy on EIA and waste disposal. The meeting was dominated by discussions about balancing future resource uses of Antarctica with environmental protection. In the opinion of the Australian government, the Oslo Meeting was "a turning point in attitudes toward the development of the Antarctic", because it marked the "beginning of a serious examination of problems which could arise if the living and non-living resources of the [Antarctic] Treaty area were to become commercially exploitable."[16]

The major assumptions underlying the discussions were that commercial exploitation of Antarctic resources was inevitable; and that the environmental impacts of scientific research to assess Antarctica's resource potentials that would follow in the wake of an influx of expeditions needed to be mitigated. It was also assumed that the environmental impacts of scientific research would be relatively minimal and largely localized vis a vis the size of Antarctica (14 million km^2, with its then less than 50 isolated stations and small numbers of resupply ships, aircraft and surface vehicles.[17] Pollution was perceived as an inevitable outcome in the realization of the overriding political, economic and strategic interests of the ATCPs. Its worst effects were to be controlled through adequate planning.

The Oslo meeting adopted a "Code of Conduct for Antarctic Expeditions and Station Activities" that involved a package of guidelines covering both waste management and EIA.[18] The fact that they were non-binding on states (i.e. states could opt out by non-approval) reflected the contentious nature of their negotiation. To obtain consensus the meeting omitted several guidelines proposed by SCAR which were designed to give greater clarity (for example, on the definition of projects to be evaluated) and comprehensiveness (for example, sufficiency of information and technical data to allow adequate assessments) to EIAs in the planning of major Antarctic operations.[19] Despite the apparent concern expressed for the "protection of the unique Antarctic environment," diverse views of EIAs in terms of their necessity, scope and urgency among the ATCP states were apparent. The EIA and waste disposal rules sought to balance environmental protection with rational use of the continent's resources, but there was considerable concern on the part of some ATCPs that such policies should not have the effect of restricting their dominant economic, political and scientific priorities. The more environmentally-oriented states, however, felt that Recommendation VIII-11 "could have been even stronger and expressed a reservation accordingly."[20] As will be seen in Chapter 8, the rejection of a permanent prohibition on mineral resource development through the designation of Antarctica as a "World Park," as proposed by New Zealand at Oslo, was inextricably linked to this anxiety about stringent environmental regulations.

Pollution control policies were also perceived as urgent. The ATCPs' were keen to assert their authority as the exclusive policy-makers for Antarctica in light of the interest shown by some international organizations such as UNEP, in Antarctic environmental issues.[21] The Oslo guidelines were thus perceived as reinforcing the ATCPs' assertion that they had the "prime responsibility for Antarctic matters, including protection of the Antarctic environment." They were intended to demonstrate the ATCPs' competence in handling EIAs and monitoring without

the assistance of the "scientific and technical" expertise offered by UNEP,[22] and to assure the international community that it would be informed of any significant changes in the Antarctic environment caused by activities originating outside the Treaty area.[23] Thus, the scope and stringency of EIA and waste disposal guidelines were largely shaped by political and strategic considerations.

The only issue-area in which a broad consensus emerged on more rigorous regulation was nuclear waste disposal. This had already been expressly prohibited by the Antarctic Treaty. A proposal to dispose of high level radioactive waste in Antarctica[24] caused considerable consternation among the Southern Hemispheric ATCP states nearest to Antarctica. Australia raised the issue at the Oslo Meeting.[25] While challenging the credibility of the proposal "on the basis of existing knowledge," Australia declared that it "would firmly oppose any move to permit the disposal or storage of radioactive waste in the Antarctic ice sheet."[26] The adoption of a recommendation proposed by New Zealand reinforced the Antarctic Treaty's prohibition on the non-nuclearization of Antarctica. It achieved this in two significant ways. The Recommendation recalled the prohibition on disposal of nuclear waste contained in Article V of the Antarctic Treaty; and it invoked the general obligation imposed on all parties to the Treaty "to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the Treaty" contained in Article X to urge governments to "continue to exert appropriate efforts to the end that no one disposes of nuclear waste in the Antarctic Treaty Area."[27]

Thus although the ATCP states were sufficiently aware of the environmental threats posed by increased human activity in Antarctica, they were constrained by their unwillingness to accord a suitable level of rigorousness to EIA and waste management guidelines. They sought to bolster the Antarctic Treaty regime and expand its competence largely to

ward-off external involvement.

IV. The Politics of Implementing Environmental Impact Assessments, 1975-1982

National Responses

From the outset the ATCPs' attitude to the implementation of the EIA and waste disposal guidelines was characterized by their desire to retain autonomy and discretion in their respective national Antarctic programs. States had considerable latitude in applying either the Antarctic guidelines or their own national legislation to their activities. It became apparent that EIA in particular had ramifications beyond its immediate subject matter. Evaluating and subjecting proposed projects to an approval process based on environmental values impinged on the freedom of scientific investigation guaranteed by the Antarctic Treaty. But the degree of this limitation was magnified and perceived as a threat to national prestige and resource claim-staking activities in the 1970s. In this context there was much impetus for governments to downgrade, override or ignore EIA procedures, lest they impede the attainment of dominant policy goals, including access to resources. The dominant strategic and economic priorities were reinforced by the fact that Recommendations adopted by the ATCMs were not necessarily codified in the national laws of ATCP states; the only means of enforcement was by means of hortatory appeals to governments.[28]

We will examine some of the national responses to implementation in the formative phase of the regimes adopted at Oslo and attempt to identify the factors which impaired their effectiveness. However, a caveat needs to be added. The secrecy surrounding the Antarctic policy process at the international level also permeated the domestic implementing process of the ATCP states, and so the paucity of publicly available information will

restrict the analysis to aspects of the EIA processes of a few selected countries.

Some of the more instructive examples of strategic and economic priorities overriding EIA involved decisions about the siting or expansion of scientific research bases. The case of Poland's *Arctowski* station involved such a decision. In the planning of its first permanent scientific station in Antarctica, Poland placed considerable priority on meeting the requirement under the Antarctic Treaty to attain Consultative Party status (Article IX [2]), which it perceived as vital to its participation in any future negotiations for the creation of resource regimes within the framework of the Treaty. In selecting Admiralty Bay (King George Island) as the base site, Polish planners used criteria other than environmental.[29] Although the site was in close proximity to exceptional wildlife habitats, no impacts of the construction or operation of the *Arctowski* base or of the increased tourism likely to result from visits to the area were evaluated.[30]

Another conspicuous example of the influence of strategic and economic priorities in national project planning involved the case of the applicability of Australia's EIA procedures under the Environment Protection (Impact of Proposals) Act to the redevelopment of its Antarctic bases. In the context of the need to assert Australia's sovereignty in its claimed sector through a presence and stations,[31] as well as considerations involving the need to upgrade bases to maintain Australian claim-staking activity,[32] the relevant government agencies determined that environmental assessments "would not be required for the redevelopment proposal." Instead measures to mitigate the impacts of construction and the human presence were considered to be adequate responses.[33]

In other cases, time constraints played a decisive role in downgrading compliance with EIA guidelines. In January 1981, when West German plans for building its first permanent Antarctic scientific station on the Filchner-Ronne Ice Shelf on the coast of the Weddell Sea were

hampered by heavy pack ice, its expedition decided to select an alternate site at Atka Bay. Both sites were selected largely on criteria involving scientific needs, speed and logistical convenience.[34] The establishment of a permanent base was perceived with considerable urgency in view of the West German government's application for consultative status at the Special Consultative Meeting in March 1981. In this it had indicated that its station would be completed later in February, permitting both the start of scientific research and any inspections under the Antarctic Treaty.[35]

All three cases provide evidence of the discretion that states retained in complying with EIA guidelines. Moreover, in the Polish case, it was apparent that policy planners were either ignorant of the guidelines or preferred to ignore them. In the Australian case they were aware of the guidelines, but were concerned that implementation of EIAs would raise questions about the environmental acceptability of proposed projects and generate pressures for either modification, suspension or cancellation of activities. In the West German case, the exigencies of meeting Treaty requirements that served to enhance the country's national prestige and strategic interests outweighed environmental considerations.

US Antarctic Environmental Impact Assessments: Factors Impairing NEPA Implementation

The United States was the sole exception to the general trend among the ATCPs of non-implementation of EIA for Antarctic activities in the period under review. US domestic legislation provided a major impetus for its governmental agencies to carry out EIA for some of their activities in Antarctica. As already seen, the National Environmental Policy Act's mandated approach to EIA for proposed governmental activities at home generated some pressure for its application to Antarctica. However, although NEPA had been successfully applied in the domestic milieu, it

failed to provide effective evaluations of proposed US Antarctic activities. Analysis of the application of the NEPA policy process to US Antarctic activities gives us a useful perspective of the dominance of scientific, strategic and resource values. While it is beyond the scope of this chapter to engage in a detailed examination of the US Antarctic EIA process, the following analysis will briefly identify some factors which impaired the effectiveness of the application of NEPA to the US Antarctic activities.

Dominance of Scientific and Resource Values

The US Antarctic environmental EIA process was largely influenced by the scientific or resource values of proposed activities[36] and by perceptions about the role of Antarctic science and its strategic importance. National prestige and resource claim-staking activities meant the United States had to be committed to maintaining an active and influential presence in Antarctica.[37] The conduct of scientific research was perceived as enhancing bargaining power at various resource regime negotiations in the 1980s. The scientific values, in some cases, were reinforced by latent assumptions about the potential long-term economic benefits of proposed projects. The results of the geophysical program of the Ross Ice Shelf Project (RISP), for example, were perceived as assisting in the interpretation of the results of extensive drilling for hydrocarbons in the Ross Sea.[38] Thus, the potential contributions to resource assessments of proposed research projects tended to downgrade the question of environmental acceptability and to provide the main justification for projects in EIA processes.

The dominance of scientific values in the EIA process also resulted in the inadequate consideration of alternatives. The option of not proceeding with a proposed action that would have no impacts on pristine environments, such as the Dry Valleys, based on preserving them for their

intrinsic value[39] and for the conduct of non-polluting forms of biological research, was given inadequate consideration. The environmental risks of drilling in such sensitive ecosystems were justified by recommending pollution monitoring and abatement procedures and by giving weight to the scientific values of the sites concerned.[40] The option of closing the US *McMurdo* Station, the operation of which had severe on-going local environmental impacts,[41] was inadequately addressed despite an acknowledgement of the numerous pollution problems in the EIA of the United States Antarctic Program (USAP) in 1980.[42] Indeed the option of selecting an alternative site was never explored. Similarly, the importance of maintaining the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of globally relevant scientific research, was not adequately explored in the 1982 EIS for the proposed mineral regime.[43] Thus, the US EIA process in general was marked by a reluctance to forego scientific research irrespective of adverse environmental impacts.

Inadequate Integration with Project Planning and Decision-Making

The US EIA process, contrary to NEPA requirements, was largely characterized by *ex post facto* decisions on their preparation. Decisions to prepare an EIA, in some cases, were taken retroactively after US government agencies concerned had committed themselves to the proposed courses of actions; or after international negotiations had commenced and after many of the vital decisions had been made;[44] or were intended as a formality necessary to enable the US to ratify Antarctic resource conventions.[45] This was in part linked to uncertainty about the applicability of NEPA's provisions to proposed US activities in Antarctica and the potential for legal challenges by environmental NGOs. It invariably contributed to the tendency on the part of policy-makers to defend proposed activities, without ascertaining the environmental effects

of alternative policy choices.

Although some assessments were done in advance of international negotiations, the information on which the EIA was based proved to be inadequate due to insufficient time for data collection and analysis. The EIA for the proposed Antarctic mineral regime, despite recommending that the US should negotiate "a regime that permits only those activities shown to be environmentally acceptable, based on sufficient information relating to the Antarctic environment,"[46] nevertheless conceded that "[m]ore baseline data is needed to intelligently manage activities in Antarctica, but it is neither practical nor possible to obtain all the information that would be desirable in the time available".[47] Thus, EIAs in practice emerged as essentially symbolic or formal mechanisms, or as adjuncts designed to legitimize pre-determined outcomes.

US government agencies were also keen to limit the integration of environmental considerations into project planning activities. This was reflected in the 1979 Presidential Executive Order[48] to preempt NEPA provisions involving the preparation of EISs for Antarctic scientific research and logistic activities. The extensive administrative discretion granted by the Order for establishing agency procedures for EIAs abroad[49] was used by the National Science Foundation to exempt itself from the obligations to assess the impacts of its proposed Antarctic activities. In 1980 it decided, without public notice, that most US Antarctic scientific and logistic activities should be excluded from further environmental analysis.[50] This can largely be attributed to concern that a more rigorous impact analysis could potentially create barriers to an expansion of US Antarctic activities.

Internalized Policy Processes

The US Antarctic EIA process was also marked by inadequate opportunities for public participation. It stemmed from the fundamental

incongruity between the open and participatory process advocated by NEPA and the secrecy shrouding the Antarctic Treaty policy process, which intensified with the emergence of resource issues in the 1970s. The Department of State's consultation process with NGOs and private individuals was marked by controversy stemming from the reluctance to provide access to documents and to discuss all policy alternatives pertaining to resource regime negotiations. For example, the secrecy surrounding the 1972 Sealing regime negotiations prevented adequate representation of NGO views, especially on a moratorium option.[51] Similarly, the classification of documents, especially draft proposals by other ATCP states for the Marine Living Resource regime rendered the NEPA comment process on the draft EIA ineffective as NGOs and interested citizens lacked sufficient information and data on the policy positions of other states.[52] Although some US documents were released, this did not remove the inadequacy of information available for substantive public input into the US policy position. Moreover, the delay in the conduct of public hearings on the same EIA ensured that the US delegation was unable to consider the input of NGOs and private individuals prior to the crucial 1978 Canberra negotiating session.[53] Although the public accountability of federal agencies had been well established in the NEPA process in its application to domestic policy, the equivalent level of accountability was not encouraged by the concerned agencies in relation to Antarctica.

Public participation in the US EIA process was also affected by the low level of political saliency of Antarctic environmental issues, and the meagre organizational capabilities of environmental NGOs. Although several US environmental groups had developed interest in Antarctic issues, they were unable to muster adequate pressure on US agencies to apply the NEPA requirements effectively to proposed Antarctic projects. In spite of the threat of judicial challenges by NGOs - which partly influenced the application of NEPA to Antarctica - such groups lacked adequate capabilities to engage in a lengthy litigation process. This contrasted

sharply with the widespread use of judicial review for enforcement of NEPA in its application to proposed domestic projects. Moreover, US groups were themselves preoccupied with efforts at organizing a transnational coalition of environmental groups to influence Antarctic resource regime negotiations and largely neglected the EIA and waste management issues in the late 1970s.

In sum, NEPA was ineffective in its application to US projects in Antarctica. Justification of predetermined decisions, rather than genuine consideration of a maximum range of policy options, tended to predominate. The US position on EIAs was moreover, characterized by ambivalence. Its leadership role on environmental issues at the international level was not matched by a rigorous domestic implementation process. The agencies involved circumvented many of the substantive requirements of NEPA and subverted the transparency that it was intended to give to decision-making.

The US case provides a particularly instructive example of the factors that impaired the effectiveness of the Antarctic EIA regime in its formative phase. Application of EIA was ignored by most states largely as a result of fears about a competitive disadvantage in terms of access to Antarctica or its resources while other countries were unfamiliar with EIA procedures because they lacked a domestic evaluation system. The general reluctance among the ATCP states to scrutinize each others' conduct and the lack of enforcement mechanisms in the Treaty system further contributed to the ineffectiveness of the EIA regime.

V. The Politics of Environmental Impact Assessment and Waste Disposal, 1983-1989: Factors Influencing Stronger Regimes

Environmental impact assessment and waste disposal issues gained considerable political importance within the Antarctic policy milieu in the 1980s. Growing international awareness of the vulnerability of

Antarctic ecosystems, and the anticipated intensification of scientific research activities to assess the continent's mineral resource potential, gave Antarctic environmental issues higher priority on the agendas of ATCMs. In the 25 years since the IGY, the import of organic and inorganic materials into Antarctica had resulted in the accumulation of large amounts of wastes that could not easily be disposed of in the cold environment. Beginning with the 1983 Canberra ATCM, the need for establishing some form of codified EIA and waste disposal regulations for scientific and logistic activity took on greater urgency. Analysis of the factors that compelled the ATCP states to strengthen these regimes provides useful insights into the developments that led to the collapse of the CRAMRA Convention in 1989. Both issues raised fundamental questions about the human presence in Antarctica and about the relationship between humans and nature.

External Pressures on the ATS

International scrutiny of the environmental practices of states operating in Antarctica exerted considerable pressure on the ATCPs to update the EIA and waste disposal regulations established by the 1975 Code of Conduct for Antarctic Expeditions and Station Activities. The advent of Antarctic mineral resource regime negotiations in 1982 led to increased critical scrutiny of the management of the Southern Continent by non-Treaty developing countries and environmental NGOs. This prompted the ATCPs to give credibility to their claim to exercise on behalf of the international community the "prime responsibility for the protection of the Antarctic environment from all forms of harmful human interference."[54] The review of extant measures was aimed at blunting the calls for the transfer of management responsibilities over Antarctica to UN organs.

Enhancing the environmental stewardship of the ATCPs had special urgency in view of the activities of environmental NGOs, which

increasingly focussed attention on the lack of enforcement of existing regulations. In particular, NGOs' criticisms of the failure to perform prior assessments of the airstrip construction project at Pointe Geologie by France at its *Dumont D'Urville* base (over-riding application of Part 4 of the 1975 Code as well as relevant French national law) and the subsequent destruction of wildlife habitats (potentially in violation of the Agreed Measures[55]), provided a catalyst for updating the EIA regulations.

Similar concerns were aroused on waste disposal regulations with the announcement in 1985 by Greenpeace International of plans to send an expedition to Antarctica to establish a permanent base on the continent. Its main purpose was to mobilize public opinion for its campaign to have the continent declared a World Park, and to monitor states' compliance with environmental rules.[56] With its proven capacity to draw media and public attention to pollution issues (through non-violent direct action), ATCP governments feared that Greenpeace would focus on the failures of the ATS, especially the non-enforcement of the waste disposal regulations at several scientific bases.[57] Some of the existing waste disposal practices, such as burying non-combustible solid wastes at sea, had become anachronistic in view of new scientific knowledge about Antarctic ecosystems. But the publicity that Greenpeace was likely to generate on other waste disposal practices, for example at the US *McMurdo* base, such as burying waste in landfills at coastal bases, open burning (instead of removal from Antarctica) of rubber and plastics, and discharge of sewage into the sea without maceration - in contravention of existing guidelines - was a major concern influencing action on renewing the existing rules. These concerns were also evident in the Australian government's attempt to dissuade Greenpeace from undertaking the expedition to Antarctica, alleging the organization had made inadequate safety preparations for its expedition.[58] The visual impacts generated by Greenpeace's media campaigns of heaps of discarded rubbish, toxic chemical wastes from photo

laboratories, wildlife entangled in plastic debris or soiled by accidental or incidental oil leaks in the immediate vicinity of Antarctic bases, subsequently touched a responsive chord among publics already concerned about the survival of wildlife (e.g., whales) and environmental health issues stemming from hazardous and other waste disposal problems in local environments.

Moreover, Greenpeace and other NGO observer reports on environmental practices at Antarctic scientific bases alleged violations of both the international laws of the ATS and the domestic laws of some ATCP states.[59] The practical implications of the failure to comply with the EIA guidelines in regard to station siting on King George Island, for example, such as overpopulation in terms of the density of bases and the impacts on wildlife, illustrated the need for more mandatory rules. External pressures on the ATS for stronger EIA and waste disposal rules were also generated by the debates sparked off in various international forums by environmentalists' lobbying and awareness-building campaigns. The General Assembly of IUCN, at the urging of its non-governmental members, adopted a resolution on the Pointe Geologie airstrip construction project in 1984, focussing attention on Antarctic environmental issues.[60] Similar pressures were generated by the 1987 debates of and resolutions adopted by the European Parliament on Antarctica, and by IUCN again in 1988.[61] Although the resolutions were non-binding on the respective Antarctic Treaty member states of each body, they opened up new channels for mobilizing international opinion against future Antarctic mining by heightening awareness of the fragility of Antarctic ecosystems. Both IUCN and the European Parliament debates allowed environmentalists to press for an Antarctic Conservation Strategy based on Antarctica's wilderness values as a primary consideration, which would incorporate uniform procedures and consistent standards for EIA, environmentally safe waste disposal practices, and that would provide for transparency, accountability and participation in the policy processes.

External pressures on the ATS also had implications for ATCP states with federal systems. In the US in particular, the shared jurisdiction on international environmental policy enabled NGOs to lobby Congress to renew its oversight function - its practice of reviewing executive and agency decisions - with regard to the National Science Foundation's administration of the USAP. This led to the scrutiny of the EIA and waste disposal practices of US Antarctic activities, and to the drafting of new laws to bring such activities into greater conformity with US environmental standards.[62]

Internal Pressures on the ATS

Several internal pressures also developed that compelled the ATCP states to address EIA and waste disposal issues. Unlike in the 1970s when the issues were largely marginalized, a few ATCPs were now concerned to play lead roles in sponsoring initiatives designed to bolster the external credibility of the ATS on EIA and waste disposal. Thus the UK provided leadership on EIA guidelines; it proposed voluntary interim rules for EIA that would provide guidance to the development of EIA procedures for the future Antarctic minerals regime.[63] Subsequent British proposals focussed on more mandatory rules designed to subject national EIAs to a measure of independent, third party review (by other contracting parties and by SCAR) prior to final decisions on implementation of proposed projects; and on establishing greater accountability for such decisions, irrespective of whether the projects were implemented in their original or in a modified form.[64] British and US experts also played lead roles in the deliberations within SCAR on advising the ATCPs on procedural guidelines for evaluating the environmental impacts of science and its logistic support activity and in establishing a clear rationale for EIAs.[65]

Similarly Australia played a lead role in attempting to have waste disposal rules updated.[66] It also took several initiatives aimed at

monitoring state compliance with existing waste disposal rules, and improved its own compliance with them: inspections of Antarctic bases were expanded to monitor environmental conduct;[67] Australian scientists played a prominent role in expediting the SCAR process set up to update the 1975 Code;[68] and the Australian Antarctic Division made a major policy decision to retrograde waste from its bases (i.e. returning waste material to the country of origin) - a measure seen as vital in view of the low level of biodegradability of organic matter in the frigid temperatures of Antarctica.[69] Moreover, Australia along with New Zealand were the only states to exert pressure on France to subject its airstrip construction project to environmental review, a move partly designed to deflect the criticism of environmentalists.[70] New Zealand also played a behind-the-scenes role in pushing for a consensus on higher standards on both EIA and waste disposal than those set out in the existing guidelines.[71] In this regard, both Australia and New Zealand made unsuccessful attempts within SCAR to have some input from outside expert agencies into the process of devising higher standards of waste disposal, including advice from environmental NGOs.[72]

These Australian and New Zealand initiatives were influenced first by their respective domestic milieus. In both countries Antarctic EIA and waste disposal issues received considerable public attention throughout the 1980s. Australia, in particular, was motivated by the growing domestic awareness of and pressure to address waste disposal problems at Australian Antarctic stations.[73] Consistent pressure from Parliament generated by the lobbying activities of environmental groups compelled the Australian government to make financial commitments to acquire the necessary ships for returning the wastes generated by its bases to Australia[74] - an attempt to give practical effect to a standard that was increasingly viewed as the most environmentally safe method of waste disposal in Antarctica.[75] In New Zealand, the adoption of a comprehensive and integrated national EIA policy provided impetus for the integration of

EIAs within that country's Antarctic program in 1986.[76] Secondly, the pressures generated by the UK, Australia and New Zealand through their leadership on EIA and waste disposal issues were designed to deflect outside criticism and shore up the external credibility of the ATS as the sole policy-making forum for Antarctic environmental protection.

The strongest internal pressures for EIA and waste disposal rules were generated by the 1989 initiative of Australia and France to ban mining in Antarctica and to maintain the continent as a "wilderness reserve" through a comprehensive environment protection convention. The changes sought in the policy direction of the ATS regime - from one largely oriented towards conservation to one of preservation based on the intrinsic value of Antarctica, especially its wilderness and aesthetic values - gave a new focus to EIA and waste disposal in terms of the application of a more integrated and rigorous approach to the planning of scientific and logistic support activities in Antarctica.[77]

VI. Constraints on Effective EIA and Waste Disposal, 1983-1989

This combination of external and internal pressures on the ATS led to the adoption of EIA and waste disposal guidelines at the 1987 Rio de Janeiro and the 1989 Paris ATCMs respectively. The new rules sought to legally bind states. They established new goals (for example, the integration of EIA into project planning and reduction to the maximum extent possible of the volume of wastes generated in Antarctica); sought to ensure a modicum of enforcement (for example, through the designation of waste management officials); and emphasized the need for greater awareness of environmental conduct and required practices in Antarctica on the part of expedition members.[78] Nevertheless, the approach of the ATCPs to these regimes was narrowly circumscribed and cautious from the outset. Uniform, universal and mandated EIA and waste disposal procedures were strongly resisted by some states. This approach was reflected in the

debates within ATCMs throughout the 1980s. The following factors can be considered as some of the principal constraints on effective implementation of EIA and waste disposal regulations.

Sovereignty

Sovereignty represented a major constraint on effective implementation of the Antarctic EIA and waste disposal rules. Many of the objections to formalized, universal and mandatory EIA regulations were couched in terms of sovereignty. Procedures requiring centralized institutions or a measure of international coordination of EIAs were perceived as encroaching on states' rights to evaluate the environmental consequences of their activities.[79] As considerable national prestige was vested in the scientific competence of states, it was asserted that states themselves were best placed to provide direction on EIAs. Sovereignty was also invoked partly to avoid accepting standards comparable to those already in use nationally by other states,[80] although this caution also reflected the varying levels of priority accorded to environmental protection among the ATCPs. Objections based on sovereignty were also linked to the issue of access to potential mineral resource activities. Stringent EIA rules, it was feared, had the potential to force modification, suspension or cancellation of proposed mineral resource activities.

Sovereignty also constrained the effective enforcement and compliance monitoring of existing EIA and waste disposal rules. Inspections of Antarctic bases conducted under the Antarctic Treaty, for example, avoided scrutinizing compliance with EIA or waste disposal rules in deference to the sovereignty of the states whose stations were inspected.[81] Even when violations were cited, inspection reports avoided explicit criticism of practices.[82]

The autonomy of national programs was frequently upheld, especially

with regard to making threshold judgements about the preparation of environmental impact documents. States were able to retain their national criteria in determining whether proposed activities would have a significant impact on the Antarctic environment.[83] Varying national priorities, values and commitments thus resulted in different degrees of compliance with EIA.

Principle of Freedom of Scientific Investigation

The freedom of scientific investigation, which is a fundamental tenet of the Antarctic Treaty (Article II), was a major constraint on the effective implementation of EIA and waste disposal guidelines. Due to the fact that national prestige was defined in terms of a state's presence in Antarctica, its scientific competence and resource claim-staking activities, the principle of freedom of scientific investigation was invoked to restrict the scope of EIA in terms of its potential to prohibit activities that might have significant environmental impacts.[84]

Financial Constraints

Financial constraints also played a significant part in impairing the effectiveness of the EIA and waste disposal rules. Preparation of EIAs for proposed projects, and follow-up action such as environmental monitoring and reporting, as well as the upgrading of waste disposal practices, involve major financial commitments. There was considerable reluctance to invest in capabilities to upgrade environmental practices in Antarctica, as environmental considerations were of a lower order of priority in the first three decades of the ATS regime's operation. Expenditures on EIAs were perceived as diverting scarce resources away from scientific research.[85] Waste disposal practices such as returning wastes from bases in the Antarctic interior (where disposal problems were

particular acute) to coastal ones, returning all wastes from Antarctica to their country of origin, as well as the cleanup of abandoned or existing waste sites, were also seen as a drain on budgets largely oriented towards research and its logistical support.[86] Solid waste disposal practices such as landfilling, open burning and ocean discharge of untreated sewage, had begun during the IGY period; but their continuance even after some of their adverse environmental impacts became known can be attributed largely to the dominant priorities involving the maintenance of states' presence, scientific research and logistical capabilities, and resource claim-staking activities.

The general neglect of environmental considerations in Antarctic budgets was evident not only among the middle power ATCP states such as Australia,[87] but also the major powers. Thus the USSR delegation at the 1989 Paris ATCM, for example, obtained a specific recognition of the enhanced funding needed for implementing upgraded waste disposal practices as "a legitimate cost of operating in the Antarctic." This was in part designed to rationalize requests for increased Antarctic program funding to the national treasury in light of the new policy priorities that required among other things, the cleanup of existing and abandoned waste sites.[88] This was also a reflection of the general value-orientation of governments on Antarctica. Many of the funding preferences were determined largely by the interests of states in Antarctica's resource potential. Issues such as waste disposal and environmental impact assessment and monitoring were perceived as not having any tangible benefits. Indeed, those countries which subsequently made the requisite financial commitments to clean up polluted waste sites and to retrograde abandoned solid wastes, were largely influenced by the pressure from their domestic milieus. For example, the environmental awareness and public pressure generated by environmental groups influenced the US government and Congress to allocate $30 million for a four-year clean-up initiative in 1989.[89]

This reluctance to allocate additional financial resources was also evident in the debate on emission-controlled incineration as a waste disposal practice.[90] Incineration was seen as a major technological breakthrough in handling the volume of wastes generated by the augmented presence of states in Antarctica. Although perceived as an alternative to the more expensive option of returning wastes to their country of origin, the incineration option has subsequently proved controversial in view of the failure of the technology to control emissions of toxic pollutants into the atmosphere (see below).

Internalized Policy Processes

The internal policy processes of ATS states were another significant constraint on effective implementation of EIA and waste disposal regulations. Government agencies responsible for operations were assigned the task of both evaluating the impacts of proposed projects and of taking decisions. The process lacked any independent review of EIAs either by other government agencies or by outside agencies. In this regard, it is significant that the EIA regulations adopted in 1987 circumscribed the obligations proposed by SCAR[91] requiring independent review of national EIAs.

The implementation of national EIAs thus raised questions of objectivity. This was implicitly acknowledged by the French decision, following domestic and international pressure from environmentalists, to include at least two foreign scientists in an independent *Comité de Sages* which reviewed the Pointe Geologie airstrip construction project's environmental impact study. The review panel's recommendations called for the preparation of a new study of the project, giving more weight to the ecological consequences of increased human activity during and after construction. The panel also asked the government to consider less ecologically harmful alternatives to the project.[92] The report thus

highlighted the lack of transparency, accountability and public participation in the implementation process.

Internalized policy processes also did not allow for input from external sources of expertise, both inter-governmental and non-governmental. The capabilities of UNEP in the field of EIA, for example, were not actively requisitioned, although its policy documents in this area were utilized to guide the drafting of new EIA rules.[93] As already seen, UNEP's goals and institutional orientation were perceived with some suspicion by the ATCPs, which prevented it from being invited to participate in the policy process.

Other qualified bodies such as IUCN were able to have a measure of input only after clarification of their conservation goals for Antarctica. In particular, IUCN's initial position in favour of the "no mining" option for Antarctica was partly revised into one of support for potential mining based on strict environmental conditions (see Chapter 3). Collaboration with SCAR prompted IUCN to stress the importance of EIA for a future mining regime and the quality of data that went into it, in view of the more difficult task of predicting the environmental impacts of minerals development activities and the huge gaps in knowledge about Antarctic ecosystems. It also stressed the need for independent review and comment prior to approval of projects.[94] Despite an IUCN and SCAR observer presence at ATCMs after 1987, their influence on EIA policy was tenuous at best. For example, their call for independent review of proposed projects was ignored, and neither body was able to have direct input into the minerals regime negotiation process. Likewise SCAR's role, as the advisory body charged with updating EIA and waste disposal standards, was circumscribed as some of its national affiliates sought to dilute the rigour of the standards proposed.[95] Its inability to requisition detailed information on existing waste disposal practices from some governments also prevented it from substantively assessing the impacts at individual bases.[96]

Environmental NGOs, although denied access to the policy process, were able to use certain strategies which enhanced their ability to influence policy outcomes. These included publicizing violations of existing rules through the acquisition of independent scientific capabilities, including (as with Greenpeace) establishing a presence in Antarctica. NGOs also generated public pressure on governments,such as Australia, to adopt some of their policy positions with regard to waste disposal. Environmental groups were thus able to partly offset their exclusion from participation in the ATS. The 1987 Rio ATCM, for example, adopted an interim waste management policy which reflected some of the policy prescriptions proposed by environmental groups: the cleanup of existing waste disposal sites; minimization of the amount of wastes; the reuse or recycling of wastes; and removal of all wastes from the Treaty area that could not be disposed of in an environmentally sound manner.[97]

VII. EIA and Waste Disposal Under the Protocol Regime: Opportunities and Constraints for Effective Policy Implementation

The Australia-France initiative which proposed a permanent prohibition on mining in Antarctica and the designation of the continent as "wilderness reserve," provided the catalyst for the most wide-ranging policy debates on Antarctic EIA and waste disposal rules. The changes sought in the policy direction of the ATS regime - from one largely oriented towards conservation to one of preservation based on the intrinsic values of Antarctica - brought into sharper focus the underlying values, approaches and priorities of states on EIA and waste disposal. Two distinct approaches to the implementation of EIA emerged. One, pursued by Australia, France, Belgium and Italy (the "four-power" proposal) sought international, uniform and mandatory rules for EIAs and waste disposal implemented by permanent institutions with broad authority for project approval based on a system of classifying activities according to the risk

of damage to the environment.[98] The second, advocated by the US, the UK, Argentina, Norway and Uruguay (the "five-power" proposal), sought to retain the existing Antarctic Treaty rules in both areas, with implementation by national agencies with considerable latitude for interpretation and project approval.[99] Several factors influenced the negotiation of EIA and waste management policies under the Protocol regime.

Role of Institutions

First, the role of institutions in the new Antarctic policy milieu provides opportunities for more effective implementation of EIAs and waste disposal. This was particularly significant in view of the lack of such a framework in the Antarctic Treaty. Institutions provide greater certainty and coordination in policy processes; they can perform a useful guidance function as impartial interpreters of ambiguous terminology in regime rules, and they can provide the technical advice needed for implementing EIAs and waste management.

The Committee on Environmental Protection established under the Madrid Protocol on Environmental Protection to the Antarctic Treaty has a largely advisory role in EIA and waste disposal implementation. Nevertheless, under Annex I of the regime (see APPENDIX 4), states are required to submit Comprehensive Environmental Evaluations (CEEs) for the Committee's consideration; a list of Initial Environmental Evaluations (IEEs) and their decisions; significant information on monitoring measures taken on IEEs; and information on the review of CEEs. The Committee is empowered to seek clarifications on draft CEEs and report to the ATCM, but such advice will not be binding. Moreover, the Committee is largely excluded from any review functions in the preliminary assessments (PAs) of proposed activities determined to have "less than a minor or transitory impact." This is a major drawback to verifying state compliance with the

fundamental environmental principles of the Protocol, including whether PAs had been based on "sufficient information" and "informed judgements." In view of the past record of non-compliance with EIA rules, the latitude granted to states in this stage could turn out to be a major constraint on the effective implementation of EIAs under Protocol.

Annex III of the Madrid Protocol (see APPENDIX 4) which established a new waste disposal regime also empowers the Committee to review, and comment on, national waste management plans and to report on their implementation and review, although, again, such comment is not binding on states. It also established a measure of institutional guidance on emission standards and equipment to be used in the practice of on-site closed incineration, as well as on the removal of the solid residues of such incineration from Antarctica.

The need for a more elaborate institutional infrastructure was one of the most contentious issues at the Antarctic Protocol negotiations. To ensure credibility and objectivity to EIAs in particular, the "four-power" draft proposal sought to give substantive powers of review and veto to a Standing Committee (assisted by a Scientific and Technical Committee) over proposed state projects with a potentially higher risk of environmental damage, supplemented by an Inspectorate to monitor compliance. Institutional review was perceived by the "four-power" draft proposal as enhancing the enforcement and compliance monitoring functions of EIA. On the other hand, the US in particular viewed institutional review of EIA as a politicization of expert bodies and as an erosion of the powers of the ATCM as the primary decision-making body of the ATS.[100] The couching of the objections in terms of a defence of the ATCM's role in Antarctic decision-making can be largely attributed to sovereignty considerations; under the Antarctic Treaty states are solely responsible for implementing common rules within their own jurisdictions.

New Zealand, on other hand, sought to balance sovereignty concerns with the need to restore credibility to the EIA and waste disposal process

through detailed, mandatory and comprehensive measures. Although it proposed an institution with only advisory powers, it sought to give that body limited authority to review and comment on EIAs, including suggestions for eliminating or minimizing environmental impacts and for modifying proposed activity.[101]

The role of institutions under the Protocol regime had implications for the freedom of access and scientific investigation guaranteed under the Antarctic Treaty. Extensive powers of review for institutions, as proposed by the "four power" initiative, was perceived by some as unnecessarily restricting the freedom of scientific investigation. There was concern that institutions, even those subject to the direction of the ATCMs, would establish an inefficient bureaucracy that could potentially delay and stifle the autonomy of national scientific research programs and make science even more expensive. Institutional review of EIAs was also opposed by certain quarters of the scientific community for these reasons.[102] The fact that science was now subject to new rules and values stemming from growing environmental awareness ensured that defining the scope of EIA was, next to the prohibition on mineral resource activities, the most contentious issue in the Protocol regime negotiations.[103]

Environmental Standards

The Madrid Protocol proposed a comprehensive set of environmental standards (Article 3) applicable to all activities in Antarctica, including science, its logistic support activities, tourism and other governmental and non-governmental activities for which advanced notice is required under the Antarctic Treaty (Article VII [5]). Fishing, whaling and potential sealing were the sole exceptions. However, there were no agreed definitions of these standards or the impact thresholds for which the different levels of EIAs were required.[104] The lack of consensus can be attributed to the arguments advanced in favour of freedom of access and

scientific investigation in Antarctica. Although achieving precise definitions within the broad scope of on-going activities is difficult, this lack of guidance - along with the meagre level of institutional review of EIAs and waste management - could prove a major constraint on effective implementation of the Protocol.

Another major constraint on the effective implementation of the environmental standards under the Protocol is the lack of provisions on financial commitments. The changing character of the ATS regime in terms of the priority accorded to environmental values and the institutional machinery needed to give effect to such values, required major financial commitments. As already seen, meagre budgetary commitments in the past had undermined the effective implementation of EIA and waste disposal rules in Antarctica. While most of the affluent countries have been laggards in this regard, following Madrid, developing ATCP states will have to comply with higher environmental standards, which will add to their burden of international obligations. During the Protocol negotiations some in this group had sought less stringent rules citing inadequate financial resources to meet such new obligations. A Chilean proposal, for example, effectively sought to grant individual Antarctic bases considerable latitude in the decisions about discharging untreated wastes into the sea, justified in relation to the assimilative capacity of local environments, and in the disposal of wastes in general.[105] Although there had been early agreement that disposal of waste at sea would be permitted based on EIAs, this was not incorporated in the relevant operative part (Article 5) of the Annex on Waste Disposal. This lacuna has raised the possibility of varying levels of state compliance.[106] Moreover, the Protocol lacks provisions on the sharing of scientific facilities. These could conceivably reduce the financial costs of compliance with higher environmental standards, and also limit the scale of human impacts by preventing the opening of new facilities in undisturbed areas.

Accountability

The Madrid Protocol regime recognized the need for accountability in Antarctic EIA and waste management decision-making. In light of the secrecy of the ATS policy process which undermined especially the EIA processes in the past, there was consensus that a measure of accountability and public participation would ensure greater effectiveness. Based largely on proposals made by New Zealand, the Protocol established accountability for decisions involving proposed activities determined to have higher levels of environmental impacts. In particular, draft CEEs (prepared for activities with more than minor or transitory impact) would be subject to some degree of scrutiny: through public comment within the state proposing the project, following public circulation of documents; review by the Committee on Environmental Protection; and comment by other ATCP governments and interested publics. However, accountability is limited at the level of final decisions to proceed with projects. ATCMs are empowered to consider, albeit without explicit powers of veto, draft CEEs on the advice of the Committee. States proposing projects are also be obligated in final CEEs to address comments received from the public and other ATCPs, and to make final CEEs and related decisions publicly available. They must also explain the significance of the environmental impacts involved prior to the commencement of proposed projects. Although final decisions on project approval are required to be based largely on CEEs, the Protocol regime failed to clearly specify whether ATCMs could force states to modify, suspend or cancel proposals. Based on past practice of the ATS, and on the divisive debate on institutional review of EIAs during the Protocol negotiations, states can be expected to invoke the sovereignty argument to justify their exercise of final authority on proceeding with projects. The only formal option available to prevent an environmentally unsound project from proceeding is the binding dispute settlement mechanism. This,

however, has never been invoked by the ATCPs on decisions taken in accordance with past EIA rules or in accordance with rules of the various sub-regimes of the ATS because of their reluctance to challenge each others' conduct.[107]

Nevertheless, the Protocol regime provides transparency to the EIA process by guaranteeing opportunities for input from outside experts, at least at the international level. The participation as observers of relevant scientific, environmental and technical bodies in the Committee's work, albeit on the approval of ATCPs, allows environmental NGOs the opportunity to raise international awareness of any controversial aspects of any proposed national project. It also enables them to monitor the review process through access to documents. This supplements the mandated opportunities for public comment on draft CEEs by interested organizations and individuals at the domestic level in all states parties to the Antarctic Treaty.

However, the efficacy of the participatory process at the national level depends to a large degree on the implementing legislation which each ATCP state enacts. Moreover, factors such as awareness and interest in Antarctic issues, the capabilities and level of current involvement of environmental and scientific NGOs in policy processes and their effectiveness, the willingness of governments to circulate all relevant information and obtain input from competent groups, and the level of non-governmental activity in domestic environmental policy processes generally, will all shape Antarctic EIA processes in the domestic milieu.

Enforcement

The Madrid Protocol regime did not establish a centralized enforcement mechanism to verify state compliance with EIAs and waste management rules. Instead it provided continuity to the Antarctic Treaty regime's practice of broadly defined enforcement through national

legislation, regulations, administrative actions and inspections to ensure compliance. The Protocol also borrowed the Treaty's procedure with regard to obtaining compliance from non-Treaty states, which calls on the ATCPs to exert "appropriate efforts," consistent with the Charter of the UN, to prevent violations. In addition a system of mutual notification of state enforcement actions was established that provided scope for raising potential violations of the Protocol. States not party to the regime will also be notified of possible violations (Article 13). The Antarctic Treaty's compliance monitoring mechanism, originally designed as an arms control verification mechanism, was also adapted with minor changes to secure protection of the Antarctic environment. Inspections by observer teams nominated by the ATCPs may be undertaken either individually or collectively in accordance with Article VII of the Treaty; ATCMs are also empowered to designate observers for inspections. Reports of inspections will be made available to the states whose stations, installations, equipment, ships or aircraft are inspected for comment. Both reports and comments will subsequently be circulated to all ATCPs and to the Committee, and will be considered by ATCMs; they will be made publicly available (Article 14). Liability for damage to the environment from activities approved under the Protocol was also perceived as an enforcement mechanism, but negotiation of rules and procedures was deferred for the future (Article 16).

A national enforcement approach was also preferred for waste management rules. Although compliance with such rules is covered under the general inspections described above, a national on-site compliance monitoring capability was also seen as a supplement to micro-level enforcement, especially in view of the physical and financial problems of covering the vast expanses of Antarctica and the distances between some stations, especially in the interior of the continent. States are required to appoint waste management officials in their areas of operation and at specific sites to develop waste management plans and to monitor compliance

with them. In addition, building environmental awareness among personnel in the field was also adopted as a mechanism to secure compliance. The Training of personnel in appropriate environmental conduct addresses a problem highlighted by NGO inspections.

Based on past evidence, then, national enforcement under the Protocol regime could prove to be a major constraint on effective implementation of EIA and waste management. As most state agencies are simultaneously proponents, implementors and regulators of proposed projects involving EIA and waste management, it is conceivable that the independence and objectivity necessary for making judgements will be impaired. Establishing, assessing and documenting environmental damage by state agencies which under the Protocol require modification, suspension or cancellation of the activities involved (Article 3 [4] [b]), would be vulnerable to influence by factors such as financial cost and national prestige. Moreover, the record of the ATCPs in inspections has been marked by less than comprehensive scrutiny of each others' environmental conduct, and by reticence about compliance, as was evident in the case of France's airstrip construction project. The general dispute-resolution mechanism available under the Protocol regime may provide an avenue for resolving conflicts "concerning the interpretation or application" of the regime involving EIAs (Articles 18, 19 and 20), but the reluctance of the ATCP states to vigorously scrutinize each others' compliance could constrain the use of binding arbitration as an enforcement mechanism.

The system of national enforcement established by the Protocol is in some senses weaker than that in force under the CCAMLR regime. For example, it does not require states to report to the Committee prosecutions of any violations within their own jurisdictions. This gap constrains the ability of the regime to monitor the enforcement process. The transparency afforded in the initial phases of enforcement by the circulation of inspection reports and comments on them and their subsequent publication, will potentially be circumscribed if a state opts

to prosecute a violator through a confidential process.

The "four-powers" and New Zealand had sought to overcome the problems of objectivity in enforcement by proposing an independent inspectorate. As in the case of institutional review, however, objections were raised on grounds of inconsistency with inspections carried out under the Antarctic Treaty and financial burdens. Although the concept of collective inspection was partly addressed through joint state inspections and by inspections ordered by ATCMs, these were subject to state vetoes, particularly the latter in view of consensus rule at ATCMs. Nevertheless, based on past practice, this weakness may be offset by NGOs through their capacity to monitor states' compliance by initiating unofficial inspections, publicizing environmental monitoring data, and by direct pressure on governments for enhanced compliance with EIA and waste management rules.

VIII. Implementing EIAs Under the Protocol: The Politics of Strengthening an International Regime Through Domestic Laws: The Case of the United States

In light of the constraints identified above pertaining to EIAs and waste management in the Madrid Protocol, the domestic legislation of the ATCPs to implement the Protocol has taken on special significance. The substantial discretion in interpreting the Protocol will permit states to translate the terms of the regime into national laws based on differing approaches to environmental protection in Antarctica. Thus those states which resisted a strong regime at the negotiation stage can effectively shift their efforts to the implementation stage of the Protocol by adopting domestic legislation which only minimally meets the requirements. Nevertheless, in federal states, the division of powers in regard to ratification of international treaties provide for unique opportunities for groups which were disappointed with the outcome at the international

(negotiation) level to influence policy at the domestic (implementation) level. In the US, in addition to the Senate's constitutional role in relation to treaties, Congress has a significant role in assessing the domestic implementation requirements of agreements negotiated by the President.[108] Its oversight hearing process will provide a forum for debating the executive branch's proposals for implementing an international regime.

Since the adoption of the Protocol, Congressional hearings have sparked a major domestic debate about the scope and mechanisms for enforcement of the Protocol regime. The process has been used by environmental NGOs to press legislators to enhance the rigorousness of the US law and to provide greater transparency to the policy process. Congress has also been urged to carry out an administrative reorganization involving agency responsibilities for implementing the Protocol. Strong US legislation based on domestic environmental standards has been perceived by environmental groups as providing an impetus to other ATCP states to adopt similar legislation in implementing the Protocol regime. In particular, the enforcement of the provisions pertaining to EIAs, in terms of their vigour, has become a major area of contention between US government agencies and environmental NGOs in the context of the poor record of compliance by the National Science Foundation even with its own preferred enforcement mechanism, Executive Order 12114.[109] Many members of Congress have favoured the reinstatement of the application of NEPA for the implementation of EIAs under the Protocol regime. Environmentalists have lobbied for inclusion of NEPA's judicial review and citizen suit provisions in the implementing legislation in an attempt to give courts a greater role as interpreters and enforcers of the Protocol, and thereby provide greater transparency, accountability and public participation in Antarctic policy processes. These complex political processes of bargaining between the various actors for acceptable implementing legislation for the Protocol regime are still under way at the time of

writing. Two issues have been central: judicial review and administrative reorganization.

Judicial Review

Judicial review emerged in the post-negotiation period of the Protocol as a mechanism for enforcing US Antarctic policy. Bureaucratic resistance to the implementation of upgraded environmental standards and the inherent bias against EIAs - and the Bush Administration's strenuous objections to substantive institutional review of EIAs in the Protocol negotiations[110] - prompted US environmental groups to test the possibilities of establishing a precedent for judicial review of US Antarctic policy.

Despite some initial problems,[111] they obtained a landmark ruling in *Environmental Defense Fund v. Walter E. Massey, Director National Science Foundation* (1993) on NEPA's applicability to Antarctica. The court found that the NSF was bound by NEPA's rules and that it was required to prepare EIAs prior to operation of an Antarctic waste incinerator. Its opinion was based on the unique status of Antarctica in international law as a "global common." It held that Antarctica was not a foreign country: it was "a continent without a sovereign, and an area over which the United States has a great measure of legislative control." The doctrine of "extraterritoriality" (which presumes that US laws do not affect conduct or events outside the territory of the United States), as claimed by the NSF, accordingly did not apply.[112]

The court's dismissal of the Bush Administration's contentions that NEPA's EIA requirements were incompatible with those proposed under the Protocol regime and that they would constrain its autonomy over foreign policy, cause international discord and delay scientific research within the ATS, were vital in establishing a precedent for judicial review as a mechanism for enforcing the new regime. The prerogatives of national

sovereignty and the freedom of scientific investigation that had often been invoked to over-ride obligations pertaining to EIAs and waste management were thus no longer tenable arguments.

The *Massey* decision also settled the dispute between the government and NGOs on the applicable environmental standards for Antarctica. It imposed US national (NEPA) standards to Antarctica, dismissing government claims that they would be unnecessarily burdensome; implied that they should operate with immediate effect during the interim before the Protocol came into force; and suggested that in any case, the two levels could be integrated subsequently within the one environmental impact statement. The imposition of US standards was vital in view of the exemption that the NSF had granted itself from NEPA rules and in view of the failure of the ATCPs to clearly define the Protocol's standards.

The *Massey* decision potentially has considerable precedential implications beyond Antarctica for US foreign policy, and for the integration of environmental issues into political, economic and national security decision-making. Several agencies, including the NSF, had lobbied the newly installed Clinton Administration to appeal or seek a rehearing of the ruling.[113] The Adminstration decided to accept the application of NEPA to Antarctica. At the same time, however, it insisted that it would not accept it as a precedent in other potential extra-territorial applications of the law.[114] Nevertheless, the prospect of future citizen suits attempting to enforce environmental assessments under NEPA involving US activities abroad cannot be discounted. In terms of US Antarctic policy, the Congress has come under pressure to take account of the *Massey* opinion in writing the implementation legislation for the Protocol by including the NEPA process as the appropriate framework for EIA.

Administrative Reorganization

Administrative reorganization has also become a focal point in the US debate on the implementing legislation for the Protocol regime. As a result of the intense scrutiny and criticism of the NSF, NGOs have advocated a major or partial transfer of regulatory and enforcement responsibilities for EIAs and waste management under the new regime from the NSF to agencies with expertise in domestic environmental administration (for example, the EPA, the NOAA, and the Marine Mammal Commission). They have complained that the agency's predominantly scientific orientation does not permit it to take an objective or integrated approach to environmental protection and pollution control.[115] Despite the NSF's subsequent and belated compliance with existing waste management rules (14 years after the entry into force of the Antarctic Conservation Act), its initiatives improving waste management practices (such as recycling and cessation of incineration), and improvements to fuel handling and storage capabilities, has somewhat mitigated such demands, judicial review and citizen suit provisions were still perceived by NGOs as the ultimate guarantees of effective enforcement.[116]

These demands stemmed from the institutional monopoly of the NSF in the planning, management, funding and enforcement of science and logistics programs. This was a product of the IGY period and its aftermath, when scientific values dominated policy processes. In the 1970s and 1980s, when science programs became oriented toward resource interests, lead agency responsibilities were further consolidated within NSF to facilitate rapid decision-making for the maintenance of an active and influential US presence in Antarctica. As already seen, EIAs were largely marginalized in this period. In the new policy milieu by contrast, the reordering of priorities has focussed attention on the competence of the NSF as an environmental administrative agency.

EIA and Waste Management in the New US Antarctic Policy Milieu: The Case of the *McMurdo* Incinerator

The pivotal role of EIA in the new Antarctic policy process was illustrated by the US decision to terminate incineration of food waste at its *McMurdo* Station in 1994.[117] The decision had considerable ramifications for the US enforcement of the Protocol regime. First, the judicial enforcement of NEPA in the *Massey* judgment compelled the NSF to reevaluate the environmental effects of its decision on Antarctic waste incineration. Second, the agency considered additional information, including newly available emissions monitoring data from its Antarctic incinerator, that had not gone into the previous EIA. The NSF's leadership also made a major commitment to eliminating incineration as a preferred option based on new scientific evidence.[118] Finally, the revised EIA established minimization and the retrograding of wastes from Antarctica as the most environmentally sound practices.[119]

The *McMurdo* incinerator decision reflected the growing importance of EIA in the policy-making process. In particular it showed that judicial review and citizen suits can compel recalcitrant bureaucracies to prepare more comprehensive EIAs and to consider all necessary scientific information and a maximum range of policy options. NEPA expands the participatory approach to implementing EIA that the Protocol regime established by indirectly providing more opportunities for US citizens to intervene in the policy process of an international regime. Similarly, the Protocol affords all citizens of ATCP states opportunities to scrutinize and comment on every draft CEE (prepared for activities with more than a minor or transitory impact). US citizens in addition can hold their national implementing agencies accountable for all EIAs prepared in accordance with the NEPA process through judicial review and citizen suits.

The emergence of judicial review as a significant mechanism for

enforcement of EIAs for proposed US activities under the Protocol regime owes much to the role of one NGO, the Environmental Defense Fund (EDF). In contrast to Greenpeace, which used its Antarctic presence and scientific capabilities to detect and publicize noncompliance with regime policies with a view to mobilizing international public opinion, EDF adopted a more conventional approach. This involved litigation as a means of binding bureaucracies at the domestic level to the more comprehensive and integrated process of NEPA. In view of the weak enforcement mechanisms provided for by the (international) Protocol regime, the EDF's success at establishing judicial enforcement for at least US (national) policy reinforces and strengthens the capabilities of environmental groups in the Protocol regime.

The rejection of incineration as an environmentally unacceptable waste disposal practice in Antarctica has considerable implications for US implementing legislation. Although the Protocol regime has endorsed such a practice, NGOs have pressured Congress to legislate a prohibition on incineration. It could make obsolete a standard which the US itself insisted on at the Protocol negotiations. Such a unilateral action to strengthen the Protocol regime may even enable the US to contend with such countries as Australia and New Zealand in assuming a leadership role in Antarctic environmental regimes.

IX. Conclusion

This chapter has attempted to evaluate the effectiveness of the policies of the sub-regimes for EIAs and waste disposal established under the Antarctic Treaty. It provides insights into the ways regimes interact with the domestic political processes of member states. The creation of regimes at the international level in itself does not provide for successful implementation of their policies at the national level. Most governments failed to integrate the EIA and waste disposal guidelines into

their Antarctic planning processes and the management of scientific bases respectively until the Protocol regime was negotiated. Only the US sought to implement EIAs, but it was largely compelled to do so by the strength of its own domestic law. Scientific and resource priorities, bureaucratic resistance, and inherent tensions between the Antarctic policy process and the participatory process of NEPA, combined to undermine the effectiveness of these policies.

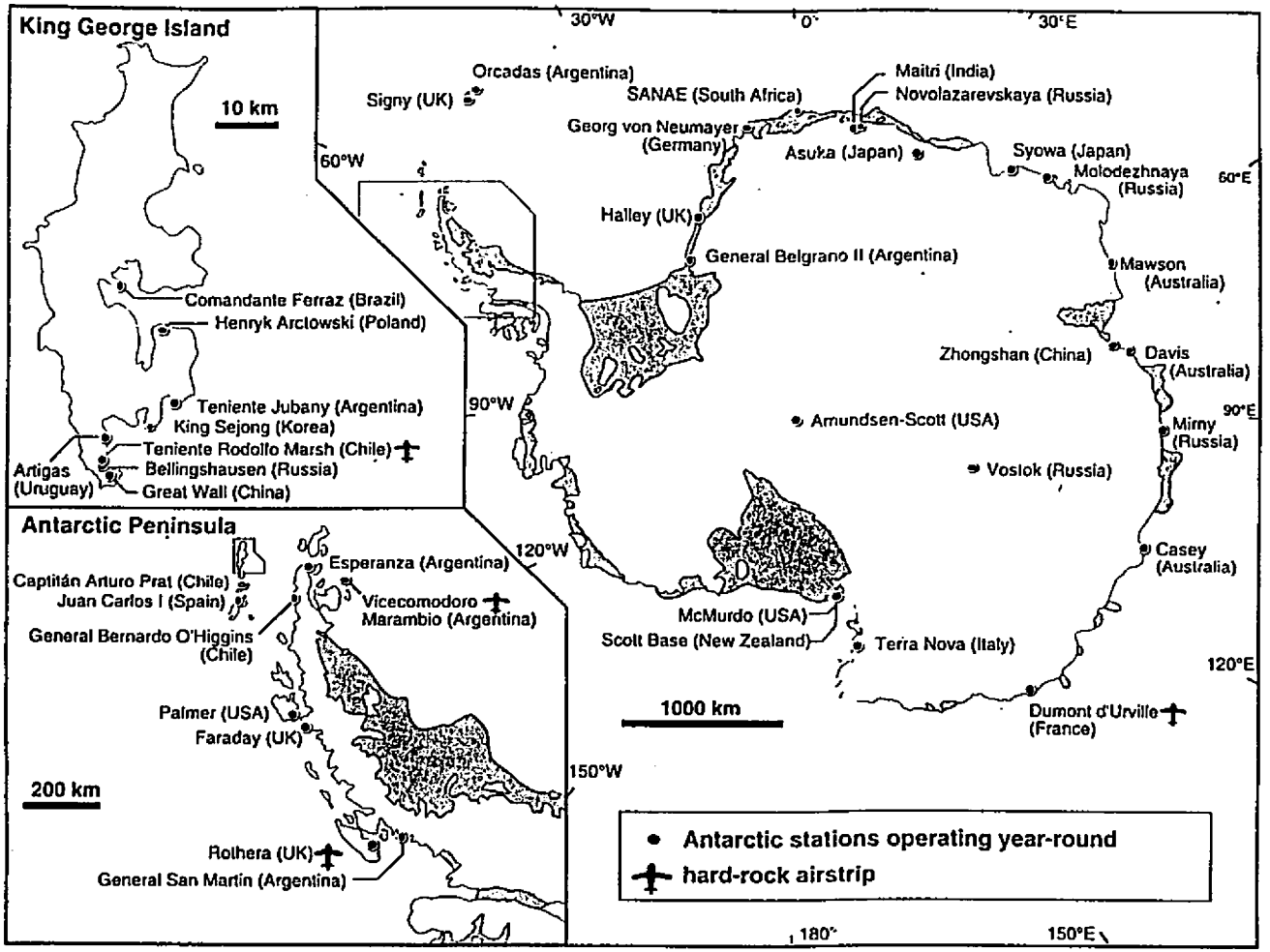
The effectiveness of policies is also impaired when states establish environmental regimes for political and strategic reasons and then ignore their international obligations. Antarctic EIA and waste disposal sub-regimes were created for more than the stated purpose of "protecting the unique Antarctic environment" from the impacts of the expanding presence and activities of states in Antarctica. They were also designed to serve latent political and strategic goals, such as thwarting the involvement of IGOs and non-Treaty states in Antarctic policy at a time of growing international interest in Antarctic resources.

Compliance with both the EIA and waste management regimes was thus largely ignored until the formation of the Protocol regime. Non-compliance was motivated by the need to avoid any modification, suspension or cancellation of proposed activities stemming from EIAs, which were widely perceived as establishing precedents that could impede access to Antarctica and to its resources. The limited effectiveness of Antarctic EIA and waste management subregimes can also be attributed to the lack of institutions with independent review and other enforcement capabilities. Implementation of regime policies in the domestic milieu can be significantly affected by the attitudes of bureaucracies toward regulatory processes. The complex technical nature of the EIA issue provided small groups of experts within agencies considerable discretion with regard to compliance. The concentration of functions involving planning, decision-making, management, funding and enforcement of environmental initiatives in one agency raise problems of objectivity. The effectiveness of

Antarctic EIAs and waste management was impaired by the lack of clearly demarcated administrative responsibilities. The EIA and waste management regimes were also undermined by the unwillingness of governments to commit the necessary financial resources to implement requirements. In the US and Australia domestic pressures exerted by environmental groups resulted in enhanced budgetary allocations. In countries without a domestic Antarctic constituency, enforcement was largely neglected. The limited capabilities of developing states considerably influenced the degree of their compliance with, and policy positions on, EIA and waste management in Antarctica.

Finally, NGOs played a significant role in focussing attention on EIA and waste disposal issues both at the international and domestic levels. The compliance monitoring activities and publicity given to violations by NGOs was largely responsible for mobilizing public opinion in the Western ATCP states. The repertoire of influence strategies available at the domestic level also afforded NGOs opportunities to influence implementation, as evidenced in the case of the use of judicial review and citizen suits by US-based groups.

Map 3



Source: Greenpeace International (1994), State of the Ice: An Overview of Human Impacts in Antarctica.

Notes for Chapter 4

1. See e.g., criteria used for site selection of US IGY stations in United States. Congress. House of Representatives. Committee on Interstate and Foreign Commerce (1958), *International Geophysical Year: The Arctic, Antarctica: Report*, (H.R. No. 1348), 85th Cong., 2nd Sess., p. 21.

2. See Schofield (1972), "Preserving the Scientific Value of Cold Desert Ecosystems: Past and Present Practices and a Rationale for the Future" in Parker [ed], *Conservation Problems in Antarctica: Proceedings of a Colloquium*, p. 216; and Tyler (1972), "Sanitation and Waste Disposal in Antarctica" Ibid., pp. 243-4.

3. See *New York Times* (1967), "City Life and City Problems Come to the Antarctic" December 22, pp. 1 & 3. For the marine pollution problems associated with the US McMurdo Station caused by the dumping of waste in inshore waters discovered by American oceanographers at the bottom of McMurdo Sound see, Dayton and Robilliard (1971), "Implications of Pollution to the McMurdo Sound Benthos" in *Antarctic Journal of the United States* Vol. 6, pp. 53-6.

4. *Christian Science Monitor* (1970), "Wealth Under Antarctica?" June 8, p. 11; *Times* [London] (1970), "Antarctica's Prize" August 26, p. 8. See also, a study commissioned by the US National Science Foundation. Potter (1969), *Natural Resource Potentials of the Antarctic*, A Resources For the Future Study; American Geographical Society Occasional Publication No. 4.

5. See Recommendations VI-4, VI-5, VI-6 in "Report of the Sixth Antarctic Treaty Consultative Meeting, Tokyo, 1970" in *Polar Record* Vol. 15 (1971), pp. 736-7.

6. "President Nixon Announces Review of US Policy for Antarctica: White House Press Release Dated October 13" in *Department of State Bulletin* Vol. 63 (1970), pp. 572-3.

7. "National Environmental Policy Act (Public Law 91-190--Jan. 1, 1970)" in *United States Statutes at Large* Vol. 83 (1970), pp. 852-3.

8. See the comments of Bruce C. Parker, Co-chairman, US Dry Valley Drilling Project Environmental Impact Committee in Parker and Howard (1977), "The First Environmental Impact Monitoring and Assessment in Antarctica: The Dry Valley Drilling Project" in *Biological Conservation* Vol. 12, pp. 163-77.

9. See United States. Council on Environmental Quality (1976), *Environmental Impact Statements: An Analysis of Six Years' Experience by Seventy Federal Agencies: Report*, p. 64. Throughout the 1970s the debate was compounded by the fact that Antarctica did not fall within the strict definition of a "foreign country" as no state had prior to or after the Antarctic Treaty's entry into force ever effectively exercised sovereignty, either partly or wholly, over the continent.

10. See Wenner (1982), *The Environmental Decade in Court*.

11. See "Wilderness Society et al...v. Rogers C. B. Morton, Secretary of the Interior, et al. No. 72-1090" in *Federal Reporter* Vol. 463, 2nd Series (1973), pp. 1261-3; and "Sierra Club et al., v. United States Atomic Energy Commission, et al., and General Electric Company, et al., Intervenors. No. 1867-73" in *Environment Reporter-Cases* Vol. 6 (1974), pp. 1980-3.

12. See Parker [ed] (1972) *Conservation Problems in Antarctica: Proceedings of a Colloquium.*

13. Llano (1971), "Antarctic Conservation: Prospects and Retrospects". Ibid., pp. 2-3.

14. The Antarctic environmental policy implications of the Stockholm principles and recommendations were discussed at the 1972 Wellington ATCM, but their outcome was not reported. See "Report of the Seventh Antarctic Treaty Consultative Meeting, Wellington, 1972" in *Polar Record* Vol. 16 (1973), pp. 596-7.

15. SCAR proposals for EIA and waste management guidelines were not adopted as governments sought time to considerer their acceptability. See Recommendation VII-1 [1-2], ibid., p. 604. However, the significance of the issue was nevertheless evident in a post-meeting field tour of Antarctica by some delegates during which, reportedly, "particular emphasis was placed on the problems of waste disposal and Antarctic ecological and conservation problems". See "Seventh Antarctic Treaty Consultative Meeting, 1972" in *Antarctic Journal of the United States* Vol. 8 (1973), p. 27.

16. "Antarctic Treaty Meeting: A Turning Point" in *Australian Foreign Affairs Record* Vol. 46 (1975), p. 432.

17. See observations of Argentine Antarctic diplomat, Roberto E. Guyer in Guyer (1973), "The Antarctic System" in *Recueil des Cours de l'Academie de Droit International* Vol. 139 (II), p. 201; see also *SCAR Bulletin* (1973), "Twelfth Meeting of SCAR, Canberra: 14 to 19 August 1972" No. 43 in *Polar Record*, Vol. 16, p. 637.

18. Recommendation VIII-11 in *SCAR Bulletin* (1976), "Report of the Eighth Antarctic Treaty Consultative Meeting, Oslo, 1975" No. 53 in *Polar Record* Vol. 18, pp. 224-5.

19. *SCAR Bulletin* (1973), p. 639.

20. *SCAR Bulletin* (1976), p. 203.

21. See intervention of Sweden in the UNEP Governing Council debate. "Cooperation in the Field of the Environment Concerning Natural Resources Shared by Two or More States: Report of the Executive Director" in United Nations Environment Program. Governing Council (1975), *Third Session*, Nairobi, Doc. UNEP/GC/44, February 20, p. 3.

22. "Cable for Ambassador Hambro from Executive Director Strong, UNEP, Nairobi," Antarctic Treaty Eighth Consultative Meeting: Oslo (1975), Doc. ANT/INF/4, June 10.

23. See Recommendation VIII-13 in *SCAR Bulletin* (1976), pp. 225-6.

24. The proposal had been submitted to SCAR by its US national affiliate, the Committee on Polar Research of the National Academy of Sciences. *SCAR Bulletin* (1974), "Report of the SCAR Executive Meeting, Cambridge: 9 to 11 July 1973" No. 46 in *Polar Record*, Vol. 17, pp. 83-4.

25. Australia declared prior to the Oslo ATCM that it was "irrevocably opposed to such waste disposal [in Antarctica] since there is inadequate knowledge of the behaviour of ice-flow over periods of thousands of years

for which wastes would remain active and potentially harmful" and that due to the waste disposal option being "canvassed extensively," it would "make its position clear at the next consultative meeting." See Australia. Parliament (1975), *Towards New Perspectives for Australian Scientific Research in Antarctica*, Discussion Paper Presented by the Hon. W.L. Morrison, M.P., Minister for Science, Paper No. 34, p. 3.

26. See "Annex I: Statement by His Excellency Mr K.G. Brennan, Representative of Australia, 12 June 1975" in *SCAR Bulletin* (1976), p. 204.

27. See Recommendation VIII-12 in *SCAR Bulletin* (1976), p. 225.

28. E.g., the 1977 London ATCM urged governments to integrate EIA procedures into their planning activities and to "refrain from activities having an inherent tendency to modify the Antarctic environment unless appropriate steps have been taken to foresee...and...control...harmful environmental effects." See Recommendation IX-5 in United Kingdom. Foreign and Commonwealth Office (1977), *Antarctic Treaty: Report of the Ninth Consultative Meeting: London: 19 September-7 October 1977*, pp. 17-8.

29. The only criteria by which the decision was taken was scientific and logistical convenience, in particular the need to conduct biological research (especially on krill) in a coastal region of either an island close to the Antarctic Peninsula or the Peninsular itself, and to take account of the fact that Poland lacked the logistical capabilities of icebreakers and the possibility of regular and easy contact with the station by trawlers. See "Appendix A: Statement of Dr. S.R. Suszczewski, Institute of Ecology of the Polish Academy of Sciences" in *SCAR Bulletin* (1977), "Fourteenth Meeting of SCAR, Mendoza: 18 to 23 October 1976" No. 56 in *Polar Record*, Vol. 18, p. 540.

30. Observation of the then Secretary of the Subcommittee on Conservation of the SCAR Working Group on Biology. See Parker (1978), "Introduction and Historical Background" in Parker [ed], *Environmental Impact in Antarctica*, p. 3. The rationale for the designation of the area close to Admiralty Bay, King George Island, South Shetland Islands - the site of Poland's *Arctowski* station - was that there was a threat to the exceptional scientific interest in the birds and mammals of the Western Shore of Admiralty Bay from accidental interference by tourists who frequently visit the base. See Recommendation X-5 (Man's Impact on the Antarctic Environment: Site of Special Scientific Interest-Interim Guidelines) in United States. Department of State (1979), *Antarctic Treaty: Report of the Tenth Consultative Meeting: Washington DC: September 17-October 5*, pp. 19-20.

31. Australia. Parliament. Senate. Standing Committee on Public Works (1981), *Report Relating to the Redevelopment of Australian Antarctic Bases*, Fifth Report, p. 9.

32. Ibid., p. 10.

33. Ibid., pp. 29-30.

34. Korbmann (1981), "German Antarctic Exploration Gains Momentum as Base Camp is Built" in *German Tribune*, February 22, p. 9.

35. See "Final Report of the Third Special Antarctic Treaty Consultative Meeting" in *Handbook of the Antarctic Treaty System: General Measures*, Part 1, 7th edition (1990), pp. 1112-3.

36. For example, the scientific values of proposed research were given preeminence from the outset of the EIA process for the Ross Ice Shelf Project. See Parker et al. (1978a), "Ross Ice Shelf Project: Environmental Impact Statement: July 1974" in Parker [ed] *Environmental Impact in Antarctica*, p. 32. For the stress on resource value of proposed activities in EIAs, see United States. Department of State (1982), *Final Environmental Impact Statement on the Negotiation of an International Regime for Antarctic Mineral Resources*, pp. 1-8-1-9.

37. United States. National Science Foundation. Division of Polar Programs (1980), *US Antarctic Program Final Environmental Impact Statement*, p. 5-1.

38. Parker et al. (1978a), p. 11. The results of drilling by the US ship *Glomar Challenger* had provided the first indication of Antarctica's oil and gas potential based on the geological similarity of the region to the productive areas of adjacent continents.

39. The Dry Valleys are essentially ice-free valleys unique to Antarctica, a continent 98 percent covered in ice. These were caused by a general lowering of ice sheet levels at certain times in the geological history of the Antarctica which resulted in the some glaciers receding or evaporating.

40. Parker et al. (1978b), "Environmental Appraisal for the Dry Valley Drilling Project Phases III, IV, V (1973-74, 1974-75, 1975-76) in Parker [ed], *Environmental Impact in Antarctica*, pp. 123-4.

41. Despite its advanced environmental laws and regulations, the US among the ATCP states, had by the late 1970s acquired the most negative reputation for its pollution problems at its scientific stations. *New Scientist* (1977), "Cold Comfort for the Antarctic Environment" in Vol. 76, p. 470.

42. United States. National Science Foundation. Division of Polar Programs (1980), pp. 5-6-5-7.

43. United States. Department of State (1982), p. 2-7.

44. E.g., see comments on the Draft EIS for the Antarctic Marine Living Resources Regime by NGO representatives, James N. Barnes and John Robinson (Center for Law and Social Policy on behalf of Environmental Defense Fund, Friends of the Earth, Natural Resources Defense Council and the Sierra Club) in United States. Department of State (1978), *Final Environmental Impact Statement on the Negotiation of a Regime for Conservation of Antarctic Marine Living Resources*, p. J-21.

45. In 1974 the Department of State determined that an EIS for the Antarctic Sealing regime was necessary in compliance with NEPA to enable the US to ratify the Convention on the Conservation of Antarctic Seals. See United States. Department of State (1974), *Environmental Impact Statement on the Convention for the Conservation of Antarctic Seals*.

46. United States. Department of State (1982), p. 2-5.

47. Ibid., p. 6-28.

48. "Executive Order No. 12114: Environmental Effects Abroad of Major Federal Actions" [issued by President Jimmy Carter, Jan. 4, 1979] in *Federal Register* Vol. 44 (1979), pp. 1957-62.

49. Executive Order 12114, although ostensibly designed to promote the National Environmental Policy Act with respect to the environment outside the United States, was nevertheless, effectively an instrument to ease the NEPA obligations on the preparation of EISs for proposed US governmental activities outside the US that significantly affect the environment. It was issued by President Jimmy Carter after considerable lobbying by the Department of State and other agencies. See *New York Times* (1978), "US Agencies Resist Environmental Limits Overseas" January 19, p. A7. In fact Executive Order 12114 failed to reflect and expand on many of the provisions of NEPA pertaining to public participation and judicial review; it claimed that its sole purpose was the establishment of internal procedures for Federal agencies to consider the significant effects of their actions on the environment outside the United States, and went on to preclude judicial review of or citizen suits against EIAs prepared in accordance with such procedures.

50. See comments of Gerald S. Schatz, former environmental protection policy advisor to the US Antarctic Program, National Science Foundation citing a National Science Foundation, Division of Polar Programs' internal memorandum (dated May 23, 1980) in Schatz (1992), "Environmental Regulation in the Antarctic" in *Dickinson Journal of Environmental Law and Policy* Vol. 1, pp. 105; & 114 (n. 67).

51. See *Audubon* (1972), "Commercial Sealing in Antarctica May be Imminent" Vol. 74 (2), p. 100.

52. See comments of NGO representative, Jim Barnes in United States. Department of State (1978), p. B20-1.

53. See respectively, comments of NGO representatives James N. Barnes and John Robinson (Center for Law and Social Policy), Chaplin B. Barnes (National Audubon Society), and David G. Ainley (Point Reyes Bird Observatory). Ibid., pp. J21; J33; & J35.

54. See declaration in Recommendation IX-5 (1) in United Kingdom. Foreign and Commonwealth Office (1977), p. 18.

55. This aspect has been addressed in Chapter 3.

56. *New York Times* (1985), "Greenpeace Sending Team to Antarctica" December 3, p. C10.

57. US officials were disturbed by the prospect of Greenpeace drawing attention to pollution in Antarctica. *Wall Street Journal* (1985), "Polar Predicament: If Antarctic Oil Search Is a Success, Pollution, Discord May Follow" December 9, p. 14.

58. See Parliamentary answers by the Minister for Science (Barry Jones) in Australia. Parliament. House of Representatives (1985), *Parliamentary Debates: Weekly Hansard*, No. 14, October 11, 34th Parl., 1st Sess., pp. 1906-7; and Ibid., No. 16, November 14, p. 2785.

59. See Greenpeace International (1988), *Expedition Report: 1987-88 Greenpeace Antarctic Expedition*; Greenpeace International (1989), *1988/89 Expedition Report*; Manheim (1988), *On Thin Ice: The Failure of the National Science Foundation to Protect Antarctica*, Report by the Environmental Defense Fund.

60. See Resolution "16/38 Airstrip at Pointe Geologie, Antarctica" in International Union for Conservation of Nature (1986), *16th Session of the General Assembly of IUCN and the 16th IUCN Technical Meeting: Madrid, Spain: 5-14 November 1984: Proceedings*, Vol. I: General Assembly, IUCN Program Series No. 4/1986, p. 105.

61. *Official Journal of the European Communities* (1987), "Economic Significance of Antarctica and the Protection of its Environment" Vol. 30 (C281), September 18, pp. 190-5; see also, European Communities. European Parliament. Committee on Environment, Public Health and Consumer Protection (1987), *Report on the Economic Significance of Antarctica and the Antarctic Ocean; Rapporteur: Mr. J. Moorhouse*, Doc. A 2-101/87, pp. 11-3; 15. For IUCN Resolution 17.52 see International Union for Conservation of Nature (1988), *Resolutions and Recommendations: 17th Session of the General Assembly of the IUCN: San Jose, Costa Rica, 1-10 February*, pp. 24-7.

62. United States. Congress. Senate. Committee on Commerce, Science and Transportation (1989), *Protecting Antarctica's Environment*, Hearing, Sept. 9 (S. Hrg. 101-637), 101st Cong., 1st Sess.; and United States. Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1990), *Antarctic Environmental Protection*, Hearing, June 26 (Serial No. 101-103), 101st Cong., 2nd Sess.

63. See "Draft British Recommendation on Environmental Impact Assessment" in Bush [ed] (1991a), *Antarctica and International Law: A Collection of Inter-State and National Documents: Part 1-Antarctic Treaty Regime: Documents and Report of the Twelfth Antarctic Treaty Consultative Meeting 1982-83*, Booklet AT1, Doc. AT091983, pp. 4-7.

64. See "British Draft Recommendation on Environmental Impact Assessment" in Bush [ed] (1991b), *Antarctica and International Law: A Collection of Inter-State and National Documents: Part 1-Antarctic Treaty Regime: Sixth Special Antarctic Treaty Consultative Meeting and Documents and Report of the Thirteenth Antarctic Treaty Consultative Meeting 1985*, Doc. AT14101985, Booklet AT2, pp. 25-8.

65. A SCAR report drafted by two scientists from the US and UK was presented to the 1985 Brussels ATCM; it concluded that Antarctic science and its associated logistic support are the main causes of environmental impact on land, with support activities contributing the much larger part. See Benninghoff and Bonner [eds] (1985), *Man's Impact on the Antarctic Environment: A Procedure for Evaluating Impacts From Scientific and Logistics Activities*, pp. 42-51.

66. "Draft Australian Recommendation Concerning Waste Disposal" in Bush [ed] (1991a), Doc. AT13091983, pp. 18-9; see also, "Australian Draft Recommendation to Amend the Code of Conduct For Antarctic Expeditions and Station Activities So Far As It Related to Waste Disposal" in Bush [ed] (1991b), Doc. AT08101985, pp. 6-8.

67. See Australia. Department of Foreign Affairs and Trade (1986), *Report of the 1985-86 Australian Observer Team: Visit to the French Station of Dumont D'Urville*, 3 January 1986.

68. At the 1986 SCAR Meeting a panel of experts on waste disposal was set up with J.E. Bleasel of Australia (Director, Antarctic Division, Department of Science) as chairman to develop a response to a request for advice on waste disposal for submission by SCAR to the 14th ATCM in 1987.

SCAR Bulletin (1987), "Nineteenth Meeting of SCAR, San Diego, California, USA, 23-27 June 1986" No. 85 in *Polar Record* Vol. 23, pp. 486 & 496.

69. Australia. Parliament. Senate. Standing Committee on National Resources (1985), *The Natural Resources of the Australian Antarctic Territory*, Paper No. 495, p. 74.

70. See Parliamentary answer by Minister for Foreign Affairs (Bill Hayden) in Australia. Parliament. House of Representatives (1985), *Parliamentary Debates: Weekly Hansard*, No. 8, May 13, 34th Parl., 1st Sess., pp. 1906-7; and *New Zealand Foreign Affairs Review* (1984), "Antarctica," Vol. 35 (4), p. 20.

71. *New Zealand Foreign Affairs Review* (1987), "Antarctica: Rio Conference" Vol. 38, p. 28.

72. *SCAR Bulletin* (1987), "Report of the SCAR Executive Meeting: Grenoble, France, 1-3 July 1987" No. 87 in *Polar Record*, Vol. 23 (147), pp. 742; 744-5.

73. See e.g., "Antarctica: Garbage Disposal (Question No. 1743)" in Australia. Parliament. House of Representatives (1981), *Parliamentary Debates: Weekly Hansard*, No. 8, May 7, 32nd Parl., 1st Sess., pp. 2206-7. See also criticisms of waste management by Australian scientists H.R. Burton and G.W. Johnstone presented to a Parliamentary inquiry in Australia. Parliament. Senate. Standing Committee on National Resources (1985), p. 72-3.

74. Australia. Parliament. Senate (1986), *Parliamentary Debates: Weekly Hansard*, No. 6, April 16, 34th Parl., 1st Sess., pp. 1837-8; and Australia. Parliament. Senate (1988), *Parliamentary Debates: Weekly Hansard*, No. 22, December 20, 35th Parl., 1st Sess., p. 4613.

75. Federative Republic of Brazil (1987), *Antarctic Treaty: Final Report of the Fourteenth Antarctic Treaty Consultative Meeting: Rio de Janeiro 5-16 October*, p. 34.

76. See comments of Harry Keys of the New Zealand Commission for Environment in Keys (1987), "Environmental Impact Assessment in New Zealand's Antarctic Programme - Where to From Here?" in *New Zealand Antarctic Record* Vol. 8 (1), pp. 11-4.

77. Republic of France (1989), *Antarctic Treaty: Final Report of the Fifteenth Antarctic Treaty Consultative Meeting: Paris, 9-20 October 1989*, p. 23.

78. Recommendation XV-3 in Republic of France (1989), pp. 49-53.

79. Recommendation XII-3 in Australia. Department of Foreign Affairs (1984), *Antarctic Treaty: Report of the Twelfth Consultative Meeting, Canberra, 13-27 September, 1983*, p. 34.

80. Ibid., p. 6.

81. The 1983 US Antarctic inspection, for example, which visited the French airstrip construction project site at Pointe Geologie, did not address the issue of the project's compliance with EIA guidelines. United States. Arms Control and Disarmament Agency (1983), *Report of the United States Observer Team in Antarctica 1983*, p. 3. It also failed to address

the compliance of Australia's *Casey* station with the waste disposal guidelines. A subsequent report by a British scientist (Dr. R. I. Lewis-Smith) working at *Casey* criticized the station for its "appalling" environmental neglect, especially with regard to the accumulation of its wastes that had on-going environmental impacts on animal and plant life in its vicinity. Lewis-Smith (1986), *Environmental Impacts and Related Matters in the Casey Station Area* (unpub. manuscript).

82. The 1985 US Antarctic inspection report although finding that "[e]very station visited burned plastics and/or used plastic garbage bags for trash dumped at sea, contrary to recommendations in the Handbook's Code of Conduct," nevertheless, concluded that "[d]uring the course of the 1985 inspection, the US Observer team found no arms control, environmental or other violations of the Antarctic Treaty." United States. Arms Control and Disarmament Agency (1985), *1985 United States Antarctic Observer Team Report*, pp. 2 & 3.

83. Federative Republic of Brazil. Ministry of External Relations (1987), pp. 30-1.

84. Recommendation XII-3 in Australia. Department of Foreign Affairs (1984), p. 34.

85. Bonner (1989), "Environmental Assessment in the Antarctic" in *Ambio* Vol. 18 (1), p. 87.

86. International Council of Scientific Unions. Scientific Committee on Antarctic Research (1989), *Waste Disposal in the Antarctic: Report of the SCAR Panel of Experts on Waste Disposal*, pp. 19-20; 26; and 36.

87. Australia. Parliament. Senate. Standing Committee on National Resources (1985), p. 74.

88. Antarctic and Southern Ocean Coalition (1989), *Report: Results of XV Antarctic Treaty Consultative Meeting, Paris*, p. 11; Republic of France (1989), p. 19.

89. *New York Times* (1989), "In Once-Pristine Antarctica, a Complicated Cleanup Begins" December 19, pp. C1; C12.

90. International Council of Scientific Unions. Scientific Committee on Antarctic Research (1989), pp. 29-30.

91. Benninghoff and Bonner (1985), p. 32.

92. Thaler (1984), *Rapport du Comité des Sages Concernant L'impact Ecologique du Project de Piste D'atterrissage en Terre Adélie.*

93. See Recommendation XIV-2 in Federative Republic of Brazil. Ministry of External Relations (1987), p. 71.

94. International Union for Conservation of Nature and Scientific Committee on Antarctic Research (1986), *Conservation in the Antarctic: Report of the Joint IUCN/SCAR Working Group on Long-Term Conservation in the Antarctic*, Doc. 2000B, pp. 45; 48.

95. *SCAR Bulletin* (1985), "Eighteenth Meeting of SCAR, Bremerhaven, FRG, 1-5 October 1984" No. 79 in *Polar Record* Vol. 22, p. 465; see also, *SCAR Bulletin* (1989), "Twentieth Meeting of SCAR, Hobart, Australia: 12 to 16

September 1988" No. 92 in *Polar Record*, Vol. 25, p. 74.

96. Federative Republic of Brazil (1987), p. 31.

97. Federative Republic of Brazil (1987), pp. 32-4.

98. See "Indicative Draft of a Convention for the Comprehensive Protection of the Antarctic Environment: Working Paper Presented by Australia, Belgium, France and Italy," Antarctic Treaty Eleventh Special Consultative Meeting, Vina del Mar (1990), Doc. XI ATSCM/1, 18 November, Article XXII (2).

99. See "Comprehensive Measures for the Protection of the Antarctic Environment and its Dependent and Associated Ecosystems: Outline of a Protocol on Supplementing the Antarctic Treaty: Submitted by Argentina, Norway, United Kingdom, United States of America and Uruguay," Antarctic Treaty Eleventh Special Consultative Meeting, Vina del Mar (1990), Doc. XI ATSCM/5, November 20, paras 11-12.

100. "United States Draft Annex With Comments on Environmental Impact Assessment" in Bush [ed] (1993), *Antarctica and International Law: A Collection of Inter-State and National Documents: Part 1-Antarctic Treaty Regime Documents and Reports: 1991*, Booklet AT91AA, Doc. AT22041991D, pp. 30-1.

101. "Draft Protocol to the Antarctic Treaty on Environmental Protection Submitted by New Zealand," Antarctic Treaty Eleventh Special Consultative Meeting, Vina del Mar (1990), Doc. XI ATSCM/2, 18 November, Parts V and VII.

102. See "Statement by Mr. Richard Laws, President of SCAR" in Republic of Chile (1990), *Interim Report of the Eleventh Antarctic Treaty Special Consultative Meeting: Vina del Mar*, 19 Nov-6 Dec," p. 92; Laws (1991), "Unacceptable Threats to Antarctic Science" in *New Scientist*, Vol. 129 (1762), p. 4; *The Scientist* (1991), "Increasing Environmental Vigilance Could Chill Research In Antarctica," Vol. 5 (6), March 18, pp. 1; 6; & 10. Cf. the views of other scientists who advocated more rigorous EIA procedures as part of a World Park regime designed to protect the undisturbed condition of Antarctica, a necessary condition for sustaining the scientific value of the continent. Broady (1991), "Antarctica: More Than Ice and Penguins" in Patel and Mayer [eds], *Antarctica: The Scientists' Case for a World Park*, Compiled by Greenpeace-UK, pp. 4-9.

103. Environmental groups which monitored the Madrid Protocol negotiations claimed that the perceived threats to the freedom of scientific research from a rigorous environmental regime were partly motivated by the need to keep future options for prospecting and exploration open in view of the proposed permanent ban on mineral resource activities by Australia, France, Belgium and Italy. Author interview with Susan Sabella (Greenpeace-US). See also *ECO* (1990), "A Scientific Perspective?," Vol. 77 (4), p. 2.

104. Testimony of R. Tucker Scully (Department of State) in United States. Congress. Senate. Committee on Foreign Relations (1992), *Protocol on Environmental Protection to the Antarctic Treaty (Treaty Doc. 102-22)*, Hearing, May 4 (S. Hrg. 102-640), 102nd Cong., 2nd Sess., p. 9.

105. See "Chilean Amendments to the Annex on Waste Disposal and Waste Management" in Bush [ed] (1993), Doc. AT23041991A, pp. 60-1.

106. See "Report of the Working Group II" in Spain (1991), *Antarctic Treaty: Final Report of the Eleventh Antarctic Treaty Special Consultative Meeting: Madrid 22-30 April; 17-22 June 1991; 3-4 October 1991*, p. 19.

107. "A Critique of the Protocol to the Antarctic Treaty on Environmental Protection (Submitted by AOSC)," Antarctic Treaty XVIth Consultative Meeting, Bonn (1991), Doc. XVI ATCM/INFO 21, October 8, pp. 3; 6.

108. United States. Library of Congress. Congressional Research Service (1993), *Treaties and Other International Agreements: The Role of the United States Senate: A Study Prepared for the Committee on Foreign Relations United States Senate*, S. Prt. 103-53, 103rd Cong., 1st Sess., pp. 199-202.

109. A NSF survey itself pointed out that "[w]ithout regulations implementing...Executive Order [12114], the Foundation has not assessed many of its activities in the Antarctic to determine whether environmental impact statements were required." See United States. National Science Foundation (1989), *A National Science Foundation Strategy for Compliance with Environmental Law in Antarctica: A Report to the Director from the Office of the General Counsel*, p. 26.

110. See testimony of Curtis Bohlen, Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs in United States. Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1992), *Antarctic Treaty Protocol on Environmental Protection*, Hearing, June 30 (Serial No. 102-85), 102nd Cong., 2nd Sess., p. 107.

111. A lower court had determined in 1991 that Executive Order 12114 of 1979 and not NEPA was the applicable process in the assessment of US Antarctic activities; but it also expressed concern at the National Science Foundation's attitude and approach to EIA which presumably provided an incentive for EDF to pursue the issue at the appellate level to obtain a reversal of the decision. See "Environmental Defence Fund, Inc., Plaintiff v. Walter E. Massey, et al., Defendants. Civ. A. No. 91-1068" in *Federal Supplement* Vol. 772 (1991), pp. 1296-8.

112. "Environmental Defense Fund, Inc.,..Appellant, v. Walter E. Massey, in His Official Capacity as Director, National Science Foundation, and National Science Foundation, Appellees: No. 91-5278" in *Federal Reporter* Vol. 986 2nd Series (1993), pp. 528-37.

113. Only the agencies administering environmental issues (i.e., the Environmental Protection Agency; the National Oceanic and Atmospheric Administration; and Council on Environmental Quality) were strongly supportive of the court's opinion. *Los Angeles Times* (1993), "US Law's Scope at Issue in Antarctica Case" February 24, p. A10.

114. United States. Department of Justice (1993), "Statement by the Department of Justice on EDF v. Massey," March 15.

115. See "Statement of Greenpeace...Presented by Susan J. Sabella" in United States. Congress. House of Representatives. Committee on Science, Space, and Technology (1993), *The Antarctic Environmental Protection Act of 1993*, Hearing (H.R. 103-21), February 23, 103rd Cong., 1st Sess., pp. 35-6. For counter-arguments by NSF officials that the agency has learnt from past mistakes and that it has developed an environmental awareness and expertise that warrant its continued oversight and enforcement role under the Protocol regime, see testimony of Dr. Frederick Bernthal, Deputy

Director, NSF. Ibid., p. 18.

116. See comments of Bruce Manheim, jr. (Environmental Defense Fund) and Beth Marks (The Antarctica Project) in United States. Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1993), *Implementing Legislation for the Protocol on Environmental Protection to the Antarctic Treaty*, Joint Hearing (Serial No. 103-83), November 16, 103rd Cong., 1st Sess., pp. 66-8; 104-5; 108-12.

117. United States. National Science Foundation. Office of Polar Programs (1994), *Environmental Assessment of the U.S. Antarctic Program's Management of Food and Food-Related Wastes at McMurdo Station, Antarctica for 1993-1996*, p. 70.

118. Emissions monitoring data revealed that NSF's Antarctic incinerator emitted levels of dioxin and hydrogen chloride that exceeded standards set even for the larger municipal incinerators in the continental US. Ibid., pp. 47; 52; 57; & 64. See also, Interpoll Laboratories (1994), *Results of the December 5-9 1992 Air Emission Compliance Testing on the Interim Incinerator at McMurdo Station in Antarctica*, p. 5.

119. United States. National Science Foundation. Office of Polar Programs (1994), p. 70.

Chapter 5 Protecting the Antarctic Marine Environment: The Politics of Preventing Pollution of a Global Marine Commons

I. Introduction

Attempts to prevent pollution of the Antarctic marine environment have been slow to evolve. Efforts at protection have largely been hampered by the lack of adequate information, political and legal conflicts, assumptions about the nature of marine pollution problems, and the geo-strategic importance of the region.

The chapter will first attempt describe the significance of the Southern Ocean in the transmission of pollutants and the technical problems of establishing a framework for Antarctic marine pollution control. It will then identify the factors that impaired the formation of a comprehensive marine pollution control regime for much of the thirty-year history of the Antarctic Treaty. In discussing these factors particular attention will be paid to the important role that sovereignty has played in thwarting the creation of knowledge about Antarctic marine pollution. The chapter will then analyze the factors that gave to the marine pollution issue salience in the late 1980s. It will provide an overview of the negotiations for a marine pollution regime in 1989-1991 and will assess the effectiveness of the regulations adopted. The debates on the marine pollution issue however, have been marked by stringent secrecy on the part of states. Indeed it can be said that the reticence in this area exceeds even the normally high level of confidentiality that has characterized Antarctic debates. This can in part be attributed to the geo-strategic importance attached by states to their activities in the Antarctic marine environment, especially due to their high level of dependence on shipping operations for maintaining a permanent presence in the Antarctic.

II. The Southern Ocean, Marine Pollution and Conflicting Jurisdictions

The circumjacent oceans of the Antarctic continent constitute the largest water mass on Earth, covering 36 million km², or about 10 percent of the world's oceans. The Southern Ocean is considered has a significant influence on the water mass characteristics of the world ocean; it is a major heat sink for the world ocean, and the principal link between the three major ocean basins, i.e. the Atlantic, Indian and Pacific.[1] The unique Antarctic Circumpolar Current, a surface oceanic current flowing from west to east and encircling Antarctica, is the greatest ocean current in the world; it plays a critical, albeit little understood role in the transfer and transport of marine pollutants into and out of the Southern Ocean.[2] Moreover, the continual production of Antarctic Bottom Water plays an important role in renewing the bottom waters of the world ocean, providing the necessary oxygen for global marine life and resources.[3] The impact of marine pollution on Southern Ocean ecosystems tends to be slow and insidious and can be much more serious than in tropical and subtropical regions.

The circumpolar waters of the Southern Ocean are effectively part of the high seas and a global marine commons. There is no recognized sovereignty on the landmass of Antarctica which can be extended to maritime areas in accordance with the traditional principles of international law. This puts the vast marine environment within the ambit of international conventions governing pollution of international waters. Moreover, although the Antarctic Treaty covers all waters south of 60° South Latitude, it specifies these areas as high seas, in which there is therefore, freedom of navigation, fishing, overflight and the laying of submarine cables and pipelines. Nevertheless, the application of international marine pollution agreements within the high seas area was not clarified by the Treaty, and until 1991 no attempt was made to integrate them.

III. Problems of Regime Formation: Antarctic Marine Pollution 1961-1987

Although the Southern Ocean is the least contaminated of the world's oceans, there is very little information about the level of pollution. As in other international waters, a major source of contamination is the operational discharge of oily ballast from oil tankers and other types of seagoing vessels navigating the southern routes. Southern Ocean waters were historically part of the "Great Circle Route" used by ships carrying cargo and emigrants from Europe to Australia from the 1850s. It has also been navigated by the world's whaling fleets and was subject to discharges of wastes and oil from coastal whaling stations during the first half of the twentieth century.[4] Following the establishment of permanent scientific stations, there have been major increases in the traffic of oil tankers, supply ships, oceanographic vessels, icebreakers, fishing trawlers, tourist cruise liners and non-governmental expedition vessels. Thus the Southern Ocean has not been immune from intentional discharges of oil and dumping of wastes generated by ships at sea.

Moreover, the hazards of navigation in the ice-infested Antarctic waters also pose threats of oil contamination from spills caused by shipping accidents. Until the oil spill caused by the grounding of the *Bahia Paraiso* in 1989, few records of oil pollution from shipping accidents in Antarctica had been kept. Nevertheless, attempts at enhancing knowledge of the pollution caused by intentional, operational or accidental discharges of oil or wastes from ships through marine scientific research remained the most controversial issue preventing the creation of regime until the late 1980s. An examination of this element provides insights into the problems of environmental regime formation in the maritime areas of Antarctica.

Sovereignty and Internationalization

Effective protection of the waters south of 60° South Latitude was not possible until the late 1980s. This can mainly be attributed to the underlying differences of the ATCP states in relation to the problem of sovereignty and the concomitant issue of the exercise of coastal state jurisdiction. The non-claimant states were determined from the beginning to avoid giving any recognition - implicit or explicit - to the claimant states' assertions of coastal state jurisdiction in the seas off "their" claimed sectors, and to uphold the freedom of the high seas safeguarded by Article VI of the Antarctic Treaty.

A measure of awareness of potential marine pollution problems in the Southern Ocean was nonetheless evident within Antarctic scientific circles at the inception of the Antarctic Treaty. Probably as a result of the magnitude and scale of ship operations during the IGY, SCAR advised ATCP states to address the issue of the discharge of oil from ships in coastal waters at their inaugural ATCM in 1961.[5] This meeting, at Canberra, recommended that governments adopt interim general rules of conduct, to the extent possible under national laws and international conventions, to prevent the "discharge of oil from ships in a manner harmful to animals and plants indigenous to Antarctica."[6] However by the 1964 Brussels ATCM, it had become apparent that there was no consensus on whether the Antarctic Treaty could govern activities causing pollution in the maritime areas, excepting the coastal waters covered by it.[7]

By the mid-1960s there was a measure of agreement among the ATCPs that knowledge of the Southern Ocean within the Antarctic Treaty area needed to be enhanced and a comprehensive scientific study undertaken. In view of the limited scope of the Antarctic Treaty with regard to conservation issues, and the lack of consensus on the maritime jurisdiction of the Treaty, the ATCPs stressed the purely scientific aspects of study. The marine pollution control implications were not

explicitly addressed. There was also a recognition that a measure of international coordination could lessen the financial burden of states undertaking oceanographic research in the Southern Ocean. The Intergovernmental Oceanographic Commission (IOC) of UNESCO, as the coordinating body for international ocean sciences, was seen as having the capability to coordinate the various national research programs on physical, chemical and biological processes in the Southern Ocean. Thus in 1967, the ATCP states initiated action within the IOC to establish the International Coordination Group for the Southern Ocean (ICG-SO). This was to coordinate existing and planned oceanographic research by countries adjacent to the area and from the Northern Hemisphere.[8] It was envisaged that its work would gradually evolve into a comprehensive international long-range study of the region, as proposed by the Soviet Union.[9] Its membership was restricted to the ATCP states conducting Antarctic oceanographic research (i.e., Argentina, Australia, Chile, France, Japan, New Zealand, South Africa, the UK, the USA and the USSR); and it was to be assisted by expert bodies such as the Scientific Committee on Oceanic Research (SCOR) and SCAR.

Nevertheless, the IOC's Southern Ocean subsidiary quickly encountered difficulties fulfilling its mandate. This was despite the ATCPs' acceptance that the IOC could play a useful role in the Antarctic Treaty area in the development of plans for the comprehensive study of the Southern Ocean.[10] From the outset some of the claimant states had misgivings about the possible participation of non-Treaty states in IOC decisions involving research activities in maritime areas claimed by them.[11] In addition, the emphasis placed by the 1972 Stockholm Conference on the principle of coastal state sovereignty for safeguarding the marine environment provided claimant states with a justification for asserting coastal state rights in Antarctica.

Perhaps the major impediment to progress was the inability to resolve the "controversial question of the division of the southern polar

waters into two regions."[12] The issue of defining the northern limits of the "circumpolar ocean surrounding Antarctica," and the use of a more approximate name for that area even within SCOR and SCAR, highlighted the political and legal problems for international marine scientific research in Antarctica.[13] To assuage the concerns of the claimant states with regard to the gathering of oceanographic information in those waters claimed as territorial seas, the 1970 Tokyo ATCM recommended that the annual Antarctic Treaty exchange of information between governments should be extended to cover information on the ships carrying out substantial oceanographic research in the Treaty area.[14]

A major barrier to the IOC's functional role was put up by Argentina. It refused to recognize the designation "Southern Ocean" for the waters surrounding Antarctica and succeeded in persuading the IOC to change the title of its subsidiary to "International Coordination Group for the Southern Oceans" (plural). The International Hydrographic Organization (IHO) was charged with the task of determining a more accurate designation for the area.[15] This, along with the call for a demarcation of the oceanic boundary, was apparently designed to strengthen Argentina's Antarctic claim.[16] This position was bolstered by Argentine national legislation which required foreign nationals, including companies and international organizations, to seek its prior authorization for marine scientific research in the continental shelf of its national territory,[17] including the sector over which it claimed sovereignty in Antarctica.

Developments in the Law of the Sea in the 1970s pertaining to the extension of coastal state jurisdiction, the widespread interest in ocean resources, and the advances in marine scientific research technology, had already made marine scientific research a contentious issue. The developed countries had emphasized the benefits of the traditional "freedom of research" in the oceans. Developing countries perceived such a freedom as being liable to abuse, possibly providing a cover for illicit commercial

operations and military activities.[18] In the Antarctic and Southern Ocean context, there was some suspicion on the part of the Latin American claimant states that marine scientific research undertaken by the major maritime powers under the auspices of the IOC might be a cover for exploration of mineral resources and intelligence-gathering operations. The sensitivity of marine scientific research to Argentina in particular was highlighted by the 1976 incident in the waters of the disputed continental shelf between Argentina and the Falkland Islands (Malvinas). Amid increased speculation about the petroleum potential of the region,[19] an Argentine naval vessel fired warning shots at the British oceanographic vessel *Shackleton*[20] which was engaged in a much publicized research mission for hydrocarbons.[21] Both sides disputed the *Shackleton's* location at the time of the incident.[22] Significantly, Argentina had previously complained to the UN about a British study on the possible existence of offshore oil deposits in the Falkland Islands, claiming that it covered potential petroleum deposits under the Argentine continental shelf near the Malvinas, and that no country had the right to explore for or extract minerals or hydrocarbons in what it considered an integral part of its national territory.[23]

The implications of the *Shackleton* incident were evident in a much wider regional context, as the IOC's area of operation (circumpolar waters south of 40° South) covered much of the contested continental shelf of Argentina and the Falkland Islands. Argentina had long considered the islands as part of its own continuous continental shelf, and as linking the mainland to Antarctica.[24] Its opposition to the work of an international organization within this single geopolitical and geostrategic sphere in the Southern Ocean, can be traced, in large part, to apprehension about losing control of its territorial claims both in the Antarctic and to the Malvinas. The IOC was perceived as potentially diluting its claim by internationalizing the region. This was evident in its marginal role in the International Southern Ocean Studies (ISOS)

program, which was part of the International Decade of Ocean Exploration (1970-79). Research was primarily undertaken by the US under bilateral agreements with Argentina, Chile, New Zealand and Australia in waters claimed by these states.[25]

Moreover, the search for new sources of petroleum and natural gas following the oil crises of the 1970s constrained the IOC's coordinating function for marine scientific research. An emerging scientific consensus in the mid-1970s that some of the regions of special interest for petroleum and natural gas exploration would be on the continental shelves of Antarctica and the outlying islands of the Southern Ocean most of which were the subject of disputed sovereignty, enhanced the strategic value of the region. In the new policy milieu, claimant states' attempts to assert sovereignty and strengthen their bargaining positions in resource negotiations proved detrimental to the involvement of international bodies. Consequently, the IOC's own expert group, Global Investigation of Pollution in the Marine Environment (GIPME), and the International Council of Scientific Unions' Scientific Committee on the Problems of the Environment (SCOPE) and SCOR, were largely ignored in ATCP attempts to establish a framework for assessing baseline levels and pathways of oil contamination of the Antarctic marine environment.[26] UNEP, which had considerable expertise in developing regional frameworks for marine pollution control, was also shunned.

Even where international technical agencies were perceived as performing a useful function, their role was largely circumscribed. The efforts of Argentina to revise the IOC's mandate within the Antarctic Treaty area was an instructive example. Coordination of research in physical and chemical oceanography (which provides the data necessary for marine pollution control regulations) was downgraded or discouraged, while the IOC's mandate in biological oceanography was limited to disseminating information on ship schedules and research on assessments of Antarctic marine living resource potential conducted by states.[27] Attempts at

redefining the IOC's mandate were also reinforced by demands for an explicit reference to coastal state authorization of research in Southern Ocean waters - a practice in international law that was already recognized by the IOC Statutes.[28] Sovereignty considerations likewise compelled the IOC to once again change the name of its subsidiary, this time to "Program Group for the Southern Oceans."[29] This reflected Argentinean opposition to the use of the term "International" within the Antarctic Treaty milieu because of the perception that such usage would internationalize the region and jeopardize its asserted rights.

Instead, Argentinean proposals called for SCAR to coordinate studies and all matters relating to sampling techniques, methods of analysis and interpretation and evaluation of data.[30] This task had originally been allocated to the IOC's ICG-SO group. The non-governmental nature and close links to the Antarctic Treaty of SCAR were perceived by Argentina as minimizing the potential internationalization of pollution control issues. This stand was reflected in the ATCPs' 1979 decision to entrust SCAR with the task of coordinating national studies for determining baseline levels of hydrocarbon content in the Southern Ocean,[31] although it had more limited capabilities than the IOC.[32] Likewise policy recommendations designed to reduce the risk of oil contamination of the Antarctic marine environment were also marked by a desire to have member states observe international marine pollution prevention convention standards without reference to the International Maritime Organization (IMO), the body responsible for negotiating and compliance monitoring of such accords.[33] Thus, a latent perception of the threat of creeping international jurisdiction over the region and its potential resources at a time of impending complex negotiations on resource regimes within the ATS, thwarted a potentially useful role for the IOC and other international bodies in the establishment of the scientific basis for marine pollution control in Antarctica. Yet for their part, expert bodies such as IHO and SCAR were, on the whole, reluctant to get involved in the politico-legal

dispute that plagued the work of the IOC in the Southern Ocean.[34]

The increased geostrategic importance of the Southern Ocean in the early 1980s effectively stalled any IGO from assuming a functional role for marine pollution control activities. The importance of this was highlighted by the advent of the Antarctic Treaty mineral resource regime negotiations, and the rise in Anglo-Argentine tensions over the sovereignty of the Falkland Islands/Malvinas. In particular, due to the discoveries of oil in the Argentine continental shelf and speculation about potential discoveries of vast oil and hydrocarbon deposits in the vicinity of the disputed continental shelf of the Falkland Islands/Malvinas,[35] scientific research activity by outside agencies was still further constrained.[36] Within the IOC, Argentina objected to reporting requirements on national research programs and to the exchange of data,[37] perhaps fearing that research data might be used to obtain information on the oil resource potential of the region. Significantly, the impasse on the renewal of IOC's mandate in the Southern Ocean coincided with the lead-up to the Anglo-Argentine War of 1982.[38] Although both states participated in the inaugural session of the mineral resource negotiations in the wake of the South Atlantic conflict, planning activities for regional marine scientific research under the IOC were suspended.

Inadequate National Concern

The establishment of an Antarctic marine pollution prevention regime was also hampered by the low level of priority accorded to environmental issues in the first 26 years of the Antarctic Treaty's operation. Most governments held that no marine pollution problems existed which warranted substantive national or international solutions. National Antarctic programs were primarily concerned about operational efficiency in terms of providing adequate supplies of food, cargo and petroleum products on a

timely basis to scientific stations in the short Austral summers during which melting ice enables greater access by ships. While IOC's attempts to coordinate oceanographic research were effectively blocked by sovereignty disputes, SCOR's efforts at mobilizing the capacities of ATCP states in the early 1970s were constrained by a lack of scientific consensus on the issue. Accordingly it tried to persuade national programs to commit Antarctic supply vessels for the task of supporting oceanographic research.[39]

Moreover, due to the lack of conclusive "visible" evidence of marine pollution in the Southern Ocean, there was a tendency to neglect the need for binding rules on intentional or operational discharges of oily ballasts or dumping of wastes from ships or tankers. It was generally assumed that the Southern Ocean had considerable buffering capacity due to its vast size and circulation patterns that could enhance dilution and dispersal of pollutants to harmless levels, particularly in the mid-ocean.[40] At the same time it was recognized that the "most significant introduction of oil into the Antarctic marine environment appeared to be from the operation of ships," and that the "presence of ice in Antarctic waters gives rise to particular hazards for the operation of ships."[41] The risks posed by tanker operations especially were recognized. Nevertheless, it was also assumed that ship operations in the Antarctic Treaty area were of a limited nature and therefore the application of existing international conventions negotiated under the auspices of the IMO to prevent intentional oil pollution of the oceans "provide for the time being an adequate and sufficient basis for minimizing risks of pollution".[42] However, the IMO conventions had themselves been subjected to criticism for their lax standards and lack of enforcement;[43] additionally, several ATCP states were not party to the IMO conventions and thus were not legally bound to observe them.

There was also some reluctance to adopt more stringent standards for the design, construction, equipment and crew training of ships to meet

specifically, the hazardous conditions of the Southern Ocean. Some of the ships engaged in or supporting Antarctic operations were built prior to existing international minimum standards.[44] There was resistance to apply stringent regulations on ship operations as these were perceived as a strategic factor for resource claim-staking activities. They provided access to Antarctica, permitted the establishment of a national presence on the continent, facilitated the conduct of marine geological and geophysical research designed to locate oil and hydrocarbon deposits, and contributed to the build-up of national logistical capabilities, all of which were seen as enhancing national prestige. Thus, most ATCPs wished to retain discretion in the enforcement of ship operating standards in view of the strategic importance of Antarctica. Stringent unilateral regulations were perceived as imposing competitive disadvantages because of the costs involved in upgrading standards and operating procedures. Even compliance with measures to control land-based sources of oil pollution, such as erecting protective walls around storage tanks at Antarctic bases, was made voluntary.[45]

From the early 1970s through the 1980s, however, sporadic evidence emerged of the inadequacy of marine pollution control measures. The growth in Antarctic ship traffic had subjected coastal waters to accidental, incidental or intentional discharges of oil (as in Arthur Harbour in the Antarctic Peninsula).[46] Accidental oil spills into the sea during the refuelling of stations was a regular but under-reported source of marine pollution.[47] Moreover, some Antarctic supply ships had been observed dumping their refuse from galleys or routinely discharging their bilges while at anchor offshore from bases along the Antarctic Peninsula.[48] Also, the siting of penguins and other wildlife coated with oil indicated increased vessel-source pollution in the Southern Ocean.[49] Nevertheless, the remoteness and vastness of the region did not allow for greater detection of the primary impacts of vessel source pollution such that they would attract media coverage and generate public pressures for government

action.

Marine pollution control issues in the Southern Ocean nevertheless gained increased salience in the context of resource exploitation. By 1975 some Antarctic marine biologists were concerned about threats to Antarctic marine ecosystems from the exploitation of mineral resources. The threats posed to Antarctic krill, from future prospecting and development of oil and hydrocarbon resources were of particular concern.[50] Nevertheless, few ATCPs committed adequate resources to marine scientific research to assess the hydrocarbon content of the marine environment in order to provide the baseline data necessary for detecting possible pollution by future oil exploration and exploitation.[51]

Thus attempts made at establishing a framework for marine pollution control were hindered by sovereignty considerations and by inadequate national concerns about the issue. Sovereignty disputes in the Southern Ocean were exacerbated by the enhancement of the strategic value of the region stemming from estimates of its marine resource potential. Fears about the implications of international coordination of the marine scientific research necessary for pollution control measures blocked regulatory attempts. Moreover, perceptions that the Southern Ocean was relatively free of pollutants, and a reluctance to adopt stringent rules for ship standards and operating procedures in view of the strategic importance of Antarctica, prevented states from taking substantive regulatory initiatives.

IV. The Emergence of Marine Pollution Issues

Antarctic marine pollution issues were not formally addressed by the ATCPs at their meetings in the 1982-87 period. However, by the 1987 Rio de Janeiro ATCM, the growth in maritime activities in Antarctica raised several issues that were linked to marine pollution issues.

First, concerns were raised about the safety of navigation due to

the increasing number of ships sailing the ice-infested waters of the Southern Ocean. A series of accidents and other navigational problems encountered by Antarctica-bound ships in the early 1980s highlighted the need for an internationally-coordinated system of marine hydrometeorlogical services, including accurate and up-to-date hydrographic charts, to enable ships to avoid the hazards of sailing the Southern Ocean. The potential for oil spills from shipping accidents highlighted the risks of marine pollution.[52] Antarctic tourist cruise ships were also liable to run aground on unchartered reefs in attempts to afford their passengers a closer view of the continent's scenic beauty and wildlife.[53] Problems of liability, insurance and ship safety standards crucial to the prevention of marine pollution were thus raised.[54] Second, the attention drawn by environmental NGOs to the marine dumping of oil, sewage and other liquid wastes by Antarctic coastal bases, also focussed attention on the question.[55] Moreover, the adoption of guidelines to control the environmental impacts of scientific drilling activities in offshore areas, resulting from potential blow-outs and spills of hydrocarbons,[56] also highlighted the need for greater effort to combat marine pollution.

Marine pollution issues also gained salience as a result of the linkage between the incidental mortality of seabirds and marine mammals in the Antarctic fishery caused by entanglement with, or ingestion of, discarded marine debris from fishing vessels. In this regard, parties to the Antarctic marine living resource regime, at their 1987 meeting, took several measures, including a request to member states to bring into force in Antarctic waters Annex V of the MARPOL Convention on regulating vessel-source pollution, especially the prohibition on the disposal of plastics from ships.[57] Research undertaken by some scientists had by the late 1980s also indicated an ever-increasing amount of pollution resulting from marine dumping, especially plastics, in the Southern Ocean.[58] Thus although the ATCPs had attempted to avoid explicitly addressing the marine

pollution issue throughout the 1980s, its linkage with a broad canvas of navigational safety, scientific, environmental and resource issues, gradually forced the issue onto the agenda of the ATCMs.

The *Bahia Paraiso* Oil Spill

The largely unregulated nature of marine pollution in Antarctica was highlighted by the oil spill caused by the grounding and sinking of the Argentine supply/tourist ship the A.R.A. *Bahia Paraiso* in January 1989 close to the US *Palmer* Station. It was the largest recorded accidental oil spill in the Antarctic[59] and raised several aspects of the marine pollution issue: the adequacies of marine navigation charts, data on weather and ice conditions and the lack of traffic regulations for vessel operating in severe ice conditions;[60] the problems of determining responsibility for the cleanup caused by Argentina's non-ratification of the 1978 Protocol of MARPOL 73/78;[61] the lack of national and/or international capabilities in Antarctica in contingency plans to respond to and control oil spills;[62] the problem of assessing liability for damages caused to the marine environment, to wildlife and to scientific research activities in light of the lack of universally recognized sovereignty in Antarctica.[63]

The *Bahia Paraiso* accident received widespread media coverage. Along with two other shipping accidents in the region which spilt unspecified amounts of oil into the marine environment,[64] it generated considerable domestic public pressures for urgent action by governments. Moreover, the Antarctic marine pollution issue gathered further momentum following the catastrophic oil spill involving the *Exxon Valdez* oil tanker in Alaska in March 1989. Thus the *Bahia Paraiso* accident proved to be a catalyst for creating an Antarctic marine pollution regime.

The Paris Negotiations (1989)

The Paris negotiations marked the first time that an ATCM formally addressed the issue of Antarctic marine pollution. These were also conducted in strict secrecy; few details of the policy positions adopted by states at the meeting were made public. The few details available were made public by US officials prior to the Paris ATCM under pressure from Congress and environmental groups to seek a comprehensive and preventive approach to marine pollution in the wake of the *Bahia Paraiso* oil spill. Moreover, the damage from the spill to important US scientific research projects especially one involving assessment of the effects of increased ultraviolet radiation on marine life caused by Antarctic ozone depletion, compelled American officials to be more forthcoming.[65]

Based on the US proposals,[66] the Paris ATCM adopted a Recommendation on marine pollution which addressed intentional discharges and dumping by ships.[67] It called for prohibitions within the Treaty area on intentional discharges or disposal into the marine environment of oil; plastics and garbage (except food, but not within 12 nautical miles of land); and sewage within 12 nautical miles of land. The new policy also advocated the ratification and implementation by all ATCP states in the Treaty area of specific IMO conventions pertaining to pollution and safety of ships. ATCP governments which were parties to MARPOL 73/78 were urged to initiate action within the IMO to designate the waters south of 60° South as a Special Area under the Convention's Annexes I and V. However, the reception facilities required under the Annexes to receive waste oil from ships were considered neither necessary nor desirable in view of the strategic sensitivity of the region. It was also agreed at Paris that the marine pollution control regime under the 1982 UN Convention on the Law of the Sea had applicability to Antarctica, although no specific action was envisaged in view of its not then being in force. Besides, the exercise of port state authority for marine pollution control envisaged under the

Convention has the potential to raise the issue of Antarctic sovereignty. And, for the first time, it was recognized that Antarctica needed contingency plans for marine pollution response, especially for vessels carrying oil. In this regard, it was also recognized that enhanced inter-governmental cooperation and the advice of IMO and other expert international organizations would be required to build the necessary capabilities to combat accidental oil spills.

In contrast to their approach of the late 1970s, the ATCP states made a firm commitment to establish an Antarctic marine pollution prevention regime under the 1989 Recommendation. The clarification with regard to the application of specific IMO Conventions and their enforcement within the Antarctic Treaty area marked a significant change. Moreover, the Paris Meeting's decision to seek the designation of Antarctica as a special area under MARPOL recognized the vulnerability of the region's marine ecosystem to oil discharges at sea. The involvement of experts from IMO, IOC, IHO and WMO reflected the growing belief that Antarctica and the Southern Ocean was, irrespective of its politico-legal status, too vast and fragile a region to be protected by the capabilities of the ATCP states alone.

Nevertheless, the effectiveness of the regime was compromised by the dominance of geo-strategic factors. This was evident in the exemption granted to warships, naval auxiliaries, and other state-owned or state-operated ships vessels from regulation.[68] As the vast majority of ships operating in Antarctica are involved in state-sponsored activities, the exemption had the potential of weakening compliance. Moreover, the limited enforcement mechanisms available under the IMO Conventions and the Antarctic Treaty, especially with regard to monitoring compliance with the prohibitions on intentional discharges or disposal of oil, plastics, garbage and sewage in remote parts of the Southern Ocean, further jeopardized the effectiveness of the regime.

Nevertheless, the Paris Recommendation was unprecedented in terms of

the ATCPs' ability to reach consensus on an issue in one meeting.[69] The public concern raised by the impacts of the *Bahia Paraiso* oil spill was a major factor in this regard. Environmentalists were able to focus international attention on the threats of Antarctic marine pollution by publicizing this and other accidents that occurred in the Treaty area. They were also able to focus attention on the risks of marine pollution from ship operations under a future Antarctic minerals regime by pointing to the impacts of these and the *Exxon Valdez* oil spills.[70]

The Paris ATCM was thus a watershed in the creation of an Antarctic marine pollution control regime. It established a consensus that the marine pollution issue should be dealt with as an integral part of a comprehensive environmental protection regime.[71]

V. Preventing Marine Pollution Under the Madrid Protocol: The Problems of Strengthening a Nascent Regime

The end of the political consensus on the Antarctic minerals convention resulted in the decision of the ATCPs to negotiate a comprehensive Antarctic environmental protection regime in 1990-91. The increased political saliency of Antarctic environmental policy issues raised expectations of more stringent marine pollution prevention rules as part of this regime. It was assumed that the nascent marine pollution prevention regime would be strengthened. The creation of a marine pollution prevention regime as part of an integrated and comprehensive approach to environmental protection in Antarctica required an expansion of the Paris agreement, especially in terms of its legal enforceability in the marine areas of the Treaty area.

By the time of the comprehensive negotiations at Vina del Mar in November 1990, the Antarctic marine pollution issue had already been addressed by competent international agencies. Immediately prior to the Vina session, the Marine Environment Protection Committee of the IMO had

adopted a resolution designating the Antarctic area involving "the sea area south of 60° South latitude" as a Special Area under Annexes I (prevention of pollution by oil) and V (prevention of pollution by garbage from ships) of MARPOL 73/78.[72] Under Annex I no discharges of oil or oily mixtures from any ship would be permitted in the Antarctic except under emergencies, a standard stricter than those applied to other special areas.[73] The unique conditions of the area were also recognized under Annex V, by requiring MARPOL regime states from whose ports ships depart en route to or arrive from Antarctica, to establish adequate reception facilities for sludge, dirty ballast, tank washing water and other oily residues. Further, states were required to ensure that those ships entitled to fly their flags before entering the Antarctic area had adequate retention capacity on board for garbage produced during their inbound and outbound trips, until accumulated wastes could be discharged at a reception facility outside the designated zone.[74] However, the effectiveness of these rules was dependent on the stringency of the regime for preventing marine pollution created by the Protocol negotiations themselves, as several ATCP states were not party to MARPOL 73/78 or to one or more of its annexes.

Considerable scientific evidence had also emerged about the level of pollution in marine sediments and the destruction of benthic habitats and communities in coastal areas caused by the discharge of ship bilges, and from dumping of burned oils and fuels, and raw sewage in the vicinity of human settlements in Antarctica.[75] Thus, there was considerable expectation that the ATCPs would create an innovative marine pollution regime that would set new environmental standards in keeping with Antarctica's vulnerable ecosystems.

Negotiations on Marine Pollution Prevention, 1990-91

The negotiations on preventing marine pollution in Antarctica focussed on creating a regional regime with standards modeled on MARPOL 73/78, while at the same time incorporating elements of the 1989 Paris Recommendation. A major problem was integrating the two regimes in relation to ATCP states which were either not parties to MARPOL, or else had not accepted its optional Annexes. Moreover, as there are no port states with recognized sovereignty in Antarctica, the enforcement of marine pollution regulations was also a problem.

Given recognition of the sensitivity of Antarctic marine ecosystems, Annex IV on marine pollution to the Madrid Protocol (see APPENDIX 4) has several weaknesses. A major threat to the effectiveness of the regime was the continuance of the exemption for warships, naval auxiliary vessels or other state-owned or -operated ships from compliance with the marine pollution prevention regime. States are required to ensure that their ships conform with the objectives of the annex (Article 11). However, as most vessels used in Antarctica are government-owned and/or -operated, the exemption is broad enough to potentially allow a large number of ships to avoid compliance with the annex. Although the immunity for government vessels has been justified on grounds of their being part of other international agreements on marine pollution, and on jurisdictional difficulties in Antarctica,[76] its application to that continent seems to contradict the goal of affording comprehensive protection to the unique environment. The regime's effectiveness was further compromised by the exclusion of the sovereign immunity article from the purview of the Protocol regime's dispute-settlement mechanism.

The retention of the article was necessitated in particular, by the demands of two groups of states. One group was constituted of states whose Antarctic logistics operations are provided by their respective militaries and which largely involved the Latin American states (e.g., Argentina,

Chile, Brazil, Peru, Ecuador, etc.). The presence of two claimant states - Argentina and Chile - with a tradition of opposing any intrusions on their perceived sovereign prerogatives in marine areas within this camp strengthened the demands for the exemption of government-owned or - operated vessels from marine pollution rules. A second group that sought to maintain the status quo involved the maritime states which insisted on upholding the principle of "freedom of navigation" for their global navies; they perceived any limits on such vessels even on environmental grounds as setting a "bad" precedent. Additionally, some within this group, especially the US, claimed that their national laws already imposed more onerous burdens on preventing pollution from government vessels and thus justifying the retention of the sovereign immunity clause.[77]

Another weakness of the annex was in the area of enforcement. Australia and its allies had originally proposed a centrally coordinated Inspectorate with substantial powers of inspection covering all vessels of the Antarctic Treaty states, including powers to board ships navigating international waters within the Antarctic Treaty area.[78] However, the marine pollution annex did not explicitly address the question of enforcement and compliance monitoring. Instead it relied on the general inspections required by the Protocol (to be undertaken individually or collectively by states) to enforce compliance with marine pollution rules. The scope of these inspections, modeled on the Antarctic Treaty inspections (Article VII), limits them to ships at harbour in Antarctica, or ships observed through aerial observation (Article 14). This limitation could inhibit compliance monitoring of the prohibitions that the Annex imposes on discharges of oil and noxious liquid substances, and of stringent controls on the disposal of garbage and sewage in the high seas. Such limitations can also be attributed to the ATCPs' desire to avoid reopening the sovereignty conflict and jeopardizing the rights of states to navigate freely in the waters of the Antarctic Treaty area.

The annex on marine pollution established under the Protocol regime

was also less comprehensive than the Paris Recommendation. The latter, for example, had required ATCP states to implement six international marine pollution prevention conventions within the Antarctic Treaty area. However, the Protocol annex dropped all but MARPOL 73/78 regime rules from application in the Treaty area. This can be attributed to the difficulties under international law of compelling those ATCPs not parties to such agreements to comply with their provision in the Antarctic.

The new marine pollution regime also failed to establish standards for design, construction, manning and equipment of ships to guarantee their navigational safety in the hazardous Southern Ocean. States were urged merely to take account of the objectives of the regime in operating ships in the region. In this regard most states were motivated by the fear of escalating operational costs. The Antarctic fleets of several countries contain ships which have been in service over long periods. Upgrading (for example, through ice-strengthening) or replacing them to meet uniformal international standards could have put unacceptably high pressures on budgets. Nevertheless, evidence from the *Bahia Paraiso* incident indicates that even ice-strengthened vessels are not immune from accidents in Antarctica. In addition, several Antarctic tourist ships lack ice-strengthened capabilities, making them vulnerable to accidents.[79]

The issue of liability for damage caused by marine pollution received meagre treatment in the Protocol and its marine pollution annex. The issue was deferred by an agreement to negotiate rules and procedures relating to liability for "damage arising from activities taking place in the Antarctic Treaty area" in one or more future annexes to the regime (Article 16). The lack of action can be attributed to the sovereignty and financial implications of assessing liability in Antarctica, as well as the perception that establishing rules for state responsibility for environmental harm in Antarctica could establish adverse precedents elsewhere in the world.[80] It is also explained by the past record of resistance to the regulation of ship operations. There was strenuous

opposition even to the definition of the main features of a future system of liability in terms of "environmental damage" as proposed by Belgium and Italy.[81]

However, the Protocol mandated states to develop capabilities to respond to marine pollution emergencies involving contingency plans for accidental discharges from ships and land-based sources. Particular emphasis was placed on contingency plans for oil tankers and oil spills from coastal installations. In recognition of the limited capabilities of states to respond effectively to oil spills, as evidenced in the *Bahia Paraiso* incident, the annex obligates states to develop and implement collectively response capabilities with advice from expert bodies such as the Committee on Environmental Protection and the IMO. Nevertheless, the regime failed to establish timetables for the implementation of contingency plans despite the risks of accidental oil pollution from increased vessel traffic in the Southern Ocean.

The new marine pollution regime ignored the need for a high-quality database on pollution in the Antarctic marine environment. Conspicuously absent in its text is any mention of initiatives for marine scientific research to better understand the size and nature of pollution problems and their change over time, which are vital to the strengthening of the regime. The controversial nature of oceanographic investigations in the context of sovereignty disputes in the South Atlantic and in Antarctica may have thwarted any intentions of addressing the question. Moreover, although international agencies such as the IOC were invited to send representatives to participate as observers in the Protocol negotiations, their contributions seem to have been marginal at best.

Nevertheless, this and other issues pertaining to the effectiveness of the marine pollution prevention regime could be addressed in the future under the review provision of the annex (Article 13). Additional measures, including amendments and new rules adopted under MARPOL 73/78, have been envisaged which could lead to the strengthening of the regime.

VI. Conclusion

This chapter has dealt with the attempts made to establish rules for the control and prevention of pollution in the Antarctic marine environment. The nature of the marine pollution issue, especially the difficulties of detecting its "visible" impacts in vast, open oceans such as the Southern Ocean, constrained governmental recognition of the need for preventive action. Political action was largely driven by the catastrophe caused by the *Bahia Paraiso* oil spill in 1989. Unlike terrestrial environmental issues where the primary impacts on specific sites and wildlife or their aesthetic aspects drew the attention of environmental groups, scientists, the media and the public, awareness of marine pollution in the high seas emerged largely as a result of this single accident. Until then, the ATCP states were able to delay action by claiming that there were no major threats or firm evidence of marine pollution in the Antarctic. Regime formation was also delayed by the dominant assumption that the vastness and buffering capacity of the Southern Ocean would allow for assimilation of pollutants through dilution and dispersal.

Another factor which slowed the process of regime formation was the limited knowledge of the Southern Ocean marine ecosystem. A scientific data base would have provided a better understanding of the physical processes and the scale and nature of the pollution problem. Early attempts to establish a knowledge base on the Antarctic marine ecosystem through international coordination were stymied by claimant state objections motivated by a fear of internationalization. The enhanced geo-strategic significance of the Southern Ocean as a potentially valuable source of oil and hydrocarbons exacerbated sovereignty disputes in the region, and prevented the input of international expert agencies in ocean science and marine pollution monitoring.

The effectiveness of the marine pollution prevention regime that was

created under the Protocol has been partly compromised by the lack of compliance-monitoring mechanisms for ships operating beyond Antarctic coastal waters, and by the exemption of sovereign immunity to government vessels. These weaknesses may be attributed both to the continuing dominance of strategic considerations in Antarctic maritime activities, and to the financial constraints involved in meeting the new pollution control standards.

Notes for Chapter 5

1. An estimated 55 to 60% of the world ocean is considered as owing its characteristics to Southern Ocean processes.

2. Zumberge [ed] (1979), *Possible Environmental Effects of Mineral Exploration and Exploitation in Antarctica*, p. 19.

3. United States. Department of State (1982), *Final Environmental Impact Statement on the Negotiation of an International Regime for Antarctic Mineral Resources*, p. A-13.

4. E.g., the whaling station at King Edward Cove, South Georgia, which functioned between 1905 and 1965 was the source of pollution from whale refuse and fuel oil. Platt (1978), "Assessment of the Macrobenthos in an Antarctic Environment Following Recent Pollution Abatement" in *Marine Pollution Bulletin* Vol. 9, pp. 149-53.

5. *SCAR Bulletin* (1961), "Conservation of Nature in Antarctica," No. 8 in *Polar Record* Vol. 10, p. 535.

6. See Recommendation I-VIII (3) (f) in "Report of the First Antarctic Treaty Consultative Meeting, Canberra, 1961" in *Polar Record* Vol. 11 (1962), p. 76.

7. The Agreed Measures implicitly recognized the problems of jurisdiction beyond Antarctic coastal waters by recommending that states "shall take all reasonable steps towards the alleviation of pollution of the waters adjacent to the coast and ice shelves". Article VII (3).

8. See Resolution V-5 (Coordination Group on the Southern Ocean) in Unesco. International Oceanographic Commission (1968), *Summary Report: Fifth Session of the Assembly: Paris, 19-27 October 1967*, Doc. SC/CS/150, Annex III, pp. 4-5.

9. See *SCOR Proceedings* (1967), "Statement Concerning the Need for Comprehensive Studies of the Southern Ocean: Presented by the USSR Delegation for Consideration by the Intergovernmental Oceanographic Commission," Vol. 3 (1), pp. 37-41.

10. See Recommendation V-3 (Southern Ocean) in "Report of Fifth Antarctic Treaty Consultative Meeting, Paris, 1968" in *Polar Record* Vol. 14 (1969), p. 667.

11. See observations of Argentine diplomat Ricardo Pedro Quadri in Quadri (1986), *La Antartida en la Politica Internacional*, p. 50.

12. Unesco. International Oceanographic Commission (1972), *Summary Report: Seventh Session: Paris, 26 October-5 November 1971*, Doc. SC/MD/29, p. 10.

13. See *SCAR Bulletin* (1971), "SCAR Working Group on Oceanography: Tokyo, 22 September 1970" in *Polar Record* Vol. 15, pp. 985-6.

14. See Recommendation VI-13 (Exchange of Information on Oceanographic Research) in "Report of the Sixth Antarctic Treaty Consultative Meeting, Tokyo, 1970" in *Polar Record* Vol. 15 (1971), pp. 741-2.

15. *SCAR Bulletin* (1974), "Report of the SCAR Executive Meeting, Cambridge: 9 to 11 July 1973" No. 46 in Polar Record Vol. 17, p. 83.

16. Unesco. Intergovernmental Oceanographic Commission (1973), *Summary Report: Eighth Session of the Assembly: Paris, 5-17 November 1973*, Doc. SC/MD/39, p. 15.

17. See "Act No. 20,489 of May 23 1973 Regulating Scientific and Technical Research Activities Conducted by Foreigners and International Organizations" [translated excerpts] in United Nations (1976), *National Legislations and Treaties Relating to the Law of the Sea*, UN Legislative Series Doc. ST/LEG/SER.B/18, pp. 145-8.

18. United States. Congress. Senate. Committee on Interior and Insular Affairs (1971), *The Law of the Sea Crisis: A Staff Report on the United Nations Seabed Committee the Outer Continental Shelf and Marine Mineral Development*, Committee Prt., 92nd Cong., 1st Sess., p. 3.

19. United States. Department of the Interior. Geological Survey (1975), *Latin America's Petroleum Prospects in the Energy Crisis*, Geological Survey Bulletin 1411, pp. 4; 30-1; *Times* [London] (1974), "Hopes of Oil in Falklands Embarrass Britain" December 2, p. 7.

20. *Times* [London] (1976), "British Ship Fired On by Argentine Warship" February 5, pp. 1 & 8.

21. *Times* [London] (1975), "Lord Shackleton for Falklands" October 23, p. 6; *Times* [London] (1975), "Argentina Warns Britain" October 23, p. 7.

22. See "Document S/11972: Letter dated 6 February 1976 from the Representative of the United Kingdom of Great Britain and Northern Ireland to the President of the Security Council", and "Document S/11973: Letter dated 10 February 1976 from the Representative of Argentina to the President of the Security Council" in United Nations. Security Council (1977), *Official Records: Thirty-First Year: Supplement for January, February and March 1976*, pp. 89-90; For a commentary on the *Shackleton* incident involving the nexus between freedom of marine scientific research, resource exploration, sovereignty and the law of the sea see *Nature* (1976), "The Shackleton Incident Could Profit International Law" Vol. 259, p. 435.

23. United Nations. General Assembly. Special Committee on the Situation With Regard to the Implementation of the Declaration on the Granting of Independence to Colonial Countries and Peoples (1975), *Falkland Islands (Malvinas): Working Paper Prepared by the Secretariat*, U.N. Doc. A/AC/482, March 28.

24. In the late 1970s Argentine geopolitical and geostrategic perceptions of the Southern Ocean seemed to particularly influence its conduct within international forums. These perceptions were best expressed by naval officer Fernando A. Milia in 1978. He wrote that Argentina perceives that the Malvinas/Falkland Islands as located on its continuous continental shelf, extending its national territory to Antarctica by way of an Argentine Sea and a whole chain of islands involving the Malvinas, through South Georgia, South Sandwich, South Orkney, and South Shetland to the Antarctic Peninsula; he called the region *Atlantardida*, a geopolitical space forming the "New Great Argentinean Frontier" coveted for, among other things, its emerging resource and strategic value. Milia [ed] (1978), *La Atlantartida: Un Espacio Geopolitico*, pp. 248 & 250.

25. The IOC was merely informed of ISOS projects by the US. Unesco. Intergovernmental Oceanographic Commission (1976), *Summary Report: Ninth Session of the Assembly: Paris, 22 October-4 November 1975*, Doc. SC/MD/55,

p. 19.

26. See Recommendation IX-6 (Oil Contamination of the Antarctic Marine Environment) in United Kingdom. Foreign and Commonwealth Office (1977), *Antarctic Treaty: Report of the Ninth Consultative Meeting: London 19 September-7 October*, p. 18.

27. See Resolution X-12 in Unesco. Intergovernmental Oceanographic Commission (1978), *Summary Report: Tenth Session of the Assembly: Paris, 27 October-10 November 1977*, Doc. SC/MD/60, Annex II, p. 13; Unesco. Intergovernmental Oceanographic Commission (1980), *Summary Report: Eleventh Session of the Assembly: Paris 15 October-3 November 1979*, Doc. SC/MD/65, p. 30.

28. Unesco. International Oceanographic Commission. Executive Council (1981), *Summary Report: Fourteenth Session: Tenerife, Spain 22-27 June*, Doc. IOC/EC-XIV-3, pp. 21-2.

29. See Resolution XI-13 in Unesco. Intergovernmental Oceanographic Commission (1980), Annex II, p. 14.

30. See "Annex D: Group of Technological, Environmental and Related Experts on Antarctic Mineral Resources Submitted by the Delegation of Argentina: Suggestions for the Study of Pollution in the Antarctic" of "The Report of the Group of Ecological, Technological and Other Related Experts on Mineral Exploration in Antarctica" in United States. Department of State (1979), *Antarctic Treaty: Report of the Tenth Consultative Meeting: Washington, D.C. Sept. 17-Oct. 5*, Annex 6, p. 114.

31. Recommendation X-7 (I) (2) (Oil Contamination of the Antarctic Marine Environment) in United States. Department of State (1979), p. 22.

32. This aspect was raised during the 1979 IOC Assembly debate on the role of the IOC in the Southern Ocean. Unesco. Intergovernmental Oceanographic Commission (1980), pp. 30-1.

33. Recommendation X-7 in United States. Department of State (1979), p. 23; see also, Argentina. Ministry of Foreign Affairs and Worship (1981), *Antarctic Treaty: Report of the Eleventh Consultative Meeting*, pp. 9-10.

34. E.g., in 1980, SCAR decided to endorse the decision of the International Hydrographic Organization (IHO) "not to define precisely the [ocean area surrounding Antarctica]," and to adopt for its own "official purposes the term Southern Ocean," without demarcating the northern boundary. However, it took care to clarify that the "use of the term by SCAR does not, in any way, prejudge the existence or non-existence of a Southern Ocean in any legal or diplomatic sense nor does it imply any changes to the limits of the Atlantic, Indian and Pacific circumpolar seas." *SCAR Bulletin* (1981), "Sixteenth Meeting of SCAR, Queenstown, New Zealand: 14 to 24 October 1980," No. 68 in *Polar Record* Vol. 20, p. 486.

35. See Frenchman (1980), "Oil Battle Looms in the Falklands" in *Times* [London], December 4, p. 12; Frenchman (1981), "The Oil that Has Not Helped to Calm the Falklands" in *Times* [London], February 23, p. 12; *Wall Street Journal* (1981), "Argentina Starts to Tap Vast Reserves" June 3, p. 33.

36. Research pertaining to oil contamination in the marine environment was largely conducted by the Argentine Antarctic Institute. See "Document Presented By the Delegation of Argentina on Agenda Item 9" in Argentina. Ministry of Foreign Affairs and Worship (1981), Annex 7, p. 59.

37. Unesco. Intergovernmental Oceanographic Commission. Executive Council (1982), *Summary Report: Fifteenth Session: Paris, 1-6 March*, Doc. IOC/EC-XV/3, p. 6.

38. The tensions in the South Atlantic region stemming from the Falklands/Malvinas sovereignty dispute were partly reflected in the inability of the IOC Executive Council to agree on renewing the mandate of the Program Group for the Southern Oceans. Unesco. Intergovernmental Oceanographic Commission. Executive Council (1981), p. 21.

39. See "SCOR WG 38: Special Studies in Circumpolar Waters South of 40° S: Report from Chairman-G.E.R. Deacon" in *SCOR Proceedings* (1973), "Report of the Seventeenth Meeting of the SCOR Executive Meeting, Texel, Netherlands, 14 to 16 May," Vol. 9, Annex V, p. 33.

40. See "AEIMEE Report No 2" in International Council of Scientific Unions. Scientific Committee on Antarctic Research (1986), *Reports of the SCAR Groups of Specialists on Antarctic Environmental Implications of Possible Mineral Exploitation (AEIMEE)*, R.H. Rutford [ed], p. 25.

41. See preamble to Recommendation X-7 in United States. Department of State (1979), p. 22.

42. Argentina. Ministry of Foreign Affairs and Worship (1981), p. 9.

43. See comments of US Congressman John Burton in United States. Congress. House of Representatives. Committee on Government Operations (1978), *Oil Tanker Pollution*, Hearings, July 18 and 20, 95th Cong., 2nd Sess., p. 4.

44. In 1981 the ATCPs called for "continuing review" of the "most appropriate preventive measures" to reduce the risks of pollution from tanker operations. Argentina. Ministry of Foreign Affairs and Worship (1981), pp. 9-10.

45. Ibid.

46. Parker (1972), "Conservation of Freshwater Habitats on the Antarctic Peninsula" in Parker [ed], *Proceedings of the Colloquium on Conservation Problems in Antarctic*, p. 157.

47. Australia. Parliament. Senate. Standing Committee on National Resources (1985), *The Natural Resources of the Australian Antarctic Territory*, Paper No. 495, p. 75.

48. Observations of Roger Tory Peterson, NGO consultant to the US National Science Foundation. Peterson (1973), "Render the Penguins, Butcher the Seals: The Antarctic's Bloody Past May Foretell Its Future" in *Audubon* Vol. 75, pp. 105-6; Lipps (1978), "Man's Impact Along the Antarctic Peninsula" in Parker [ed], *Environmental Impact in Antarctica*, p. 357.

49. Parker (1971), "The Case for Conservation in Antarctica" in *Antarctic Journal of the United States* Vol. 6, p. 51; Peterson (1973), p. 108; Wilson (1980), "Oiled Penguins in Antarctica" in *Living Wilderness* Vol. 44 (150), p. 16.

50. See "The SCOR/SCAR Polar Oceans Conference: Montreal, 6-11 May 1974: Resolutions" in *SCOR Proceedings* (1975), "Report of the Twelfth General Meeting: Guayaquil, Ecuador, 2 to 5 December 1974," Vol. 10, p. 178; *SCAR Bulletin* (1977), "Antarctic Resources-Effects of Mineral Exploration: Initial Response by SCAR, dated May 1976, to Antarctic Treaty Recommendation VIII-14," No. 57 in *Polar Record* Vol. 18, p. 634.

51. The USSR and Argentina were exceptions in this regard. See "AEIMEE Report No 2" in International Council of Scientific Unions. Scientific Committee on Antarctic Research (1986), p. 16.

52. See "Soviet Working Paper and Draft Recommendation on an International System of Marine Hydrometeorlogical Services to Navigation in the Southern Ocean" in Bush [ed] (1991c), *Antarctica and International Law: A Collection of Inter-State and National Documents: Part 1-Antarctic Treaty Regime: Documents of the Fourteenth Antarctic Treaty Consultative Meeting 1987*, Booklet AT3, Doc. AT101987, pp. 48-53. See also Recommendation XIV-10 (Marine Meteorological and Sea Ice Information Services for Navigation in the Treaty Area of the Southern Ocean) in Federative Republic of Brazil. Ministry of External Relations (1987), *Antarctic Treaty: Final Report of the Fourteenth Antarctic Treaty Consultative Meeting: Rio de Janeiro 5-16 October*, pp. 141-2.

53. E.g., the tourist cruise ship, M.V. *Lindblad Explorer* ran aground hitting an unchartered reef close to shore off the northern tip of the Antarctic Peninsula in 1979 while being used as a floating hotel. No oil was reportedly discharged, although damage involved a puncture of the outer hull of the double-hulled ship. *New York Times* (1979), "100 Flee Vessel that Hit a Reef in the Antarctic," December 26, pp. 11 & 19.

54. Federative Republic of Brazil. Ministry of External Relations (1987), p. 51.

55. In the development of possible standards for a new waste disposal regime, the Rio ATCM noted the possible application of standards set out in existing international conventions regulating marine pollution and dumping. Federative Republic of Brazil. Ministry of External Relations (1987), p. 32.

56. See Recommendation XIV-3. Ibid., pp. 75-6.

57. Commission for the Conservation of Antarctic Marine Living Resources (1987), *Report of the Sixth Meeting of the Commission: Hobart, Australia: 26 October-6 November*, pp. 10-12; 95-9.

58. See Gregory et al. (1984), "Pelagic Tar, Oil, Plastics and Other Litter in Surface Waters of the New Zealand Sector of the Southern Ocean, and on Ross Dependency Shores" in *New Zealand Antarctic Record* Vol. 6, pp. 12-28; Ryan (1987), "The Origin and Fate of Artefacts Stranded on Islands in the African Sector of the Southern Ocean" in *Environmental Conservation* Vol. 14, pp. 341-6; and van Franeker and Bell (1988), "Plastic Ingestion by Petrels Breeding in Antarctica" in *Marine Pollution Bulletin* Vol. 19, pp. 672-4.

59. About 190,000 gallons of various types of fuel were spilt. See testimony of Dr. Peter Wilkniss, Division of Polar Programs, National Science Foundation in United States. Congress. Senate. Committee on Commerce, Science and Transport (1989), *Protecting Antarctica's Environment*, Hearing (S. Hrg. 101-637), Sept. 8, 101st Cong., 1st Sess., p. 168.

60. The *Bahia Paraiso* which made an unscheduled visit to *Palmer* station for the benefit of its tourist passengers, had been warned by US base personnel not to take the route it had taken, because it is marked as highly dangerous due to pinnacle rocks on the hydrographic charts. See "Statement of James N. Barnes, Executive Director, The Antarctica Project" in United States. Congress. Senate. Committee on Commerce, Science and Transport (1989), p. 103; "Statement of Bruce S. Manheim, Jr., Attorney and Scientist: Environmental Defense Fund" in United States. Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1990), *Antarctic Environmental Protection*, Hearing (Serial No. 101-103), June 26, 101st Cong., 2nd Sess., pp. 106-7.

61. Argentina was one of three ATCP states not to have ratified the MARPOL Convention and its Annex I pertaining to prevention of pollution from ships. International Maritime Organization (1991), *Status of Multilateral Conventions and Instruments in Respect of Which the International Maritime Organization or its Secretary-General Performs Depository or Other Functions as at 31 December 1990*, Doc. J/2735/rev. 5, pp. 79-83.

62. None of the Antarctic stations had any contingency plans or equipment to contain and clean up an oil spill. The US flew a rapid response team to deal with the spill. But because it had to be transported by ship from Chile to *Palmer* Station, it arrived almost 1 week after leaving the continental US, which proved a major drawback in terms of timely action. *Antarctic Journal of the United States* (1989), "NSF Launches Oil-Spill Containment Team," Vol. 24, pp. 8-9.

63. The complex question of assessing liabilities in Antarctica was highlighted by the fact that the *Bahia Paraiso* was owned by the Argentine government; it sank in international waters claimed by Argentina, Chile and the UK; and it caused damage to the scientific research activities of the US. See testimony of Dr. Peter Wilkniss, Division of Polar Programs, National Science Foundation and R. Tucker Scully, Department of State in United States. Congress. Senate. Committee on Commerce, Science and Transport (1989), pp. 46; 168-73.

64. The two other accidents involved a British resupply vessel, the *HMS Endurance*, and a Peruvian resupply vessel, the *BIC Humboldt*. Antarctic and Southern Ocean Coalition (1989a), "Accidents in the Antarctic," ASOC Information Paper No. 4.

65. Wilkniss in United States. Congress. Senate. Committee on Commerce, Science and Transport (1989), p. 62.

66. The US made several proposals to the preparatory meeting for the 1989 Paris ATCM that involved the implementation within the Treaty area of existing international marine pollution control conventions, certain special measures (including contingency planning and liability for damages), as well as actions by competent international organizations for marine pollution control. See testimony of Scully in United States. Congress. Senate. Committee on Commerce, Science and Transport (1989), p. 170.

67. Recommendation XV-4 [1] (Human Impact on the Antarctic Environment: Prevention, Control, and Response to Marine Pollution) in Republic of France (1989), *Antarctic Treaty: Final Report of the Fifteenth Antarctic Treaty Consultative Meeting: Paris 9-20 October*, pp. 54-5.

68. In the Final Report of the Paris ATCM, governments made a commitment to "make every effort to ensure that their vessels with sovereign immunity...act in a manner consistent" with Recommendation XV-4. Ibid., p. 21.

69. Antarctic and Southern Ocean Coalition (1989d), *Report: Results of the 15th Antarctic Treaty Consultative Meeting*, p. 12.

70. Antarctic and Southern Ocean Coalition (1989a), "Antarctic Oil Spill: Warning Against Minerals Activity," Media Release, Wellington, February 1; and Antarctic and Southern Ocean Coalition (1989b), "Implications of Alaskan Oil Spill for the Antarctic", Information Paper No. 1, PREP ATCM XV/ASOC INF.1.

71. See proposals put forward at Paris. "Annex C: Comprehensive Measures for the Protection of the Antarctic Environment and Dependent and Associated Ecosystems" in Republic of France (1989), pp. 219-64.

72. International Maritime Organization (1991), p. 118.

73. See "Annex I of MARPOL 73/78: Regulations for the Prevention of Pollution by Oil" in International Maritime Organization (1992), *MARPOL 73/78: Consolidated Edition, 1991*, Doc. IMO-520E, p. 82.

74. See "Annex V of MARPOL 73/78: Regulations for the Prevention of Pollution by Garbage from Ships" in Ibid., p. 445.

75. E.g., intentional discharges by ships anchored at *McMurdo* station harbour and waste dumping practices were attributed to have caused considerable destruction of benthic habitats and communities in Winter Quarters Bay, McMurdo Sound, adjacent to the largest human settlement in Antarctica. The impacted areas are surrounded by some of the richest benthic communities in the world. Lenihan et al. (1990), "Intense and Localized Benthic Marine Pollution Around McMurdo Station, Antarctica" in *Marine Pollution Bulletin* Vol. 21, pp. 422-30; and Risebrough et al. (1990), "PCB and PCT Contamination in Winter Quarters Bay, Antarctica" in *Marine Pollution Bulletin* Vol. 21, pp. 523-9.

76. Testimony of US negotiator, R. Tucker Scully in United States. Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1991), *Antarctic Treaty on Environmental Protection*, Joint Hearing (Serial No. 102-1), March 5, pp. 9-10.

77. Private communication from a NGO representative of a national ATCP delegation at the Madrid Protocol negotiations.

78. See "Indicative Draft of a Convention for the Comprehensive Protection of the Antarctic Environment: Working Paper Presented by Australia, Belgium, France and Italy," Antarctic Treaty Eleventh Special Consultative Meeting, Vina del Mar (1990), Doc. XI ATSCM/1, 18 November, Article XXVI; and "Draft Protocol to the Antarctic Treaty on Environmental Protection Submitted by New Zealand," Antarctic Treaty Eleventh Special Consultative Meeting, Vina del Mar (1990), Doc. XI ATSCM/2, 18 November, Article 9.

79. This evidence has come to light in the aftermath of the Protocol negotiations. See testimony of John Splettstoesser, Spokesperson, International Association of Antarctic Tour Operators in United States. Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1992), *Antarctic Treaty Protocol on Environmental Protection*, Hearing (Serial 102-85), June 30, 102nd Cong., 2nd Sess., p. 31.

80. Testimony of US negotiators, Scully and Curtis Bohlen in United States. Congress. House of Representatives. Committee on Merchant Marine (1991), p. 19.

81. Comments of Francesco Francioni, Legal Advisor to the Italian delegation at the Protocol negotiations in Francioni (1993), "The Madrid Protocol on the Protection of the Antarctic Environment" in *Texas International Law Journal* Vol. 28, p. 71.

Part III Change and Continuity in Antarctic Resource Regimes

Chapter 6 Conserving Antarctic Marine Living Resources: Regime Formation

I. Introduction

The regulation of Antarctica's marine living resources under the Antarctic Treaty did not receive substantive attention until the mid-1970s. The limited scope of the Antarctic Treaty with regard to resource conservation issues meant that regime formation would be a difficult proposition. Whales and seals, the only commercially exploited Antarctic marine living resources prior to 1959, thus have been regulated by other regimes.

This chapter will attempt explore the most important factors that led to the formation of a regime to manage the marine living resources of Antarctica. It will first outline the problems of regulating an international "common property" resource and the historical and political background to the negotiations on Antarctic marine living resources, and will examine the linkages between domestic and international factors that contributed to the commercial interest in Antarctic fish and krill. It will next investigate the external and internal pressures that influenced the ATCP states to create a regime within the framework of the ATS. The chapter will next examine some of the contentious issues in the CCAMLR negotiations, paying particular regard to the perceptions of the various actors involved, and finally it will evaluate the role of non-state actors in the negotiations.

II. Problems of Regime Formation: Antarctica, the Freedom of Fishing on the High Seas and the "Tragedy of the Commons"

Prior to 1961, the resources of the Southern Ocean were governed under international law by the regime of the Convention on Fishing and Conservation of the Living Resources of the High Seas. This recognized the

traditional right to fish on the high seas, placed but few obligations on states and their fishing vessels with regard to effective conservation and management.[1] The Antarctic Treaty, although silent on issues of economic exploitation, implicitly reinforced the freedom of fishing in the area south of 60° South Latitude by excluding the high seas from its zone of application.[2] During preparatory negotiations for the 1959 Washington Conference, the United States was motivated by its desire to maintain access to Antarctica and to deny the application of coastal state sovereignty. It also had concerns about interference to the freedom of the seas stemming from enforcement actions carried out at sea. Washington was able to persuade the other eleven states to exclude ocean areas south of 60° South from the ambit of the Antarctic Treaty.[3] Thus, freedom of fishing was guaranteed by the Treaty. Although no commercial fishery (other than whaling) was in existence in the region at the time of the negotiation of the Antarctic Treaty, the enforcement of any future conservation measures in the high seas of the Treaty area was fraught with problems.[4]

As a result of the application of the principle of freedom of fishing on the high seas, Antarctic marine living resources are essentially resources of a global commons to which all nations have free and equal access, except for those in the 200-mile zones around islands north of 60° South over which maritime sovereignty is universally recognized. As such these waters are vulnerable to overexploitation as defined by the "tragedy of the commons" - the concept defining the use of open access resources. The "tragedy of the commons" asserts that in the case of common ownership or lack of regulation of a resource, users are motivated by an economic "rationality" that has as it sole objective the maximization of short-term individual gain. They thus attempt to take as much of the resource as is accessible, and cause depletion of the resource, thus incurring costs to all potential users. Only "mutual coercion, mutually agreed upon by the majority of the people affected"

could provide a solution to the problem.[5] The "tragedy of the commons" analogy is applicable to the competitive exploitation of Antarctic living resources, for example, in commercial sealing and whaling; political agreements on these stocks were arrived at well after the respective resources had suffered serious depletions.[6]

In its contemporary application to Antarctic marine living resources, the problem of the "tragedy of the commons" was compounded by new political realities. These included the interests of the international community in conserving common property resources as well as in the wise and equitable management of such resources to solve critical problems such as the nutritional problems faced by developing nations. The remoteness of Antarctica enabled only those states with distant water fishing capabilities to freely access the Antarctic global commons. Thus, unlike the "tragedy of the commons" scenario, the number of users of Antarctic marine living resources was in practice restricted by economic, technological and physical barriers, making resources vulnerable to overexploitation by a handful of technologically advanced countries. Therefore the formation of any regime covering Antarctica's marine living resources was bound to be influenced not only by international legal and economic factors, but also by political factors involving issues of equity and participation.

III. Emergence of Antarctic Commercial Fisheries

Commercial interest in Antarctica's fish resources, unlike those in seals and whales, developed only after the Antarctic Treaty came into force. This was largely due to the lack of an indigenous fishery and the abundance of stocks in the Northern Hemispheric oceans. Commercial interests began to develop in the 1960s with the decline in the whaling industry in Antarctica. The two major whaling states, the Soviet Union and Japan, engaged part of their fleets in experimental fishing for krill, the

main food source of baleen whales. Exploratory fishing was undertaken largely from an economic perspective.[7] Interest in Antarctic fisheries was stimulated by a growing perception that the Southern Ocean could provide an abundance of protein to feed the world's burgeoning population.[8] This consideration was buttressed by Soviet scientific opinion that assumed that the decline in whale stocks could provide for a surplus of krill, enabling a potential commercial harvest that could double the total annual world fish catch.[9]

Issues pertaining to the law of the sea and global resources also focussed attention on Antarctic fish resources. The fleets of the USSR, Japan, the UK and other distant-water fishing nations found their access to traditional fishing grounds limited by coastal states through the exercise of jurisdiction up to 200 nautical miles. With the largest trawler fleet in the world, the USSR was left with a harvesting overcapacity in its fleet which it diverted to the Southern Ocean. The high seas freedoms in operation in the region guaranteed easy access to fishery resources.[10] The distant fleets were also forced to look for new ocean areas by the depletion of fish stocks in traditional fishing grounds.[11] The open access to Antarctic fishery resources also engendered in some states domestic political pressures by scientific and fisheries groups to enhance research funding for resource surveys as a prelude to commercial harvesting, partly in order to compete with the USSR and Japan in establishing fishing rights in the Scuthern Ocean.[12] The rush to obtain access can partly be attributed to fears that stocks would be depleted within a short period.[13] Domestic economic concerns, particularly the risk of large scale unemployment stemming from the collapse of the Antarctic whale stocks, had also influenced the Soviet Union to attempt development of a home market for krill products. Global resource scarcities of the 1970s, especially in the context of the world food crisis, further intensified pressures on governments to explore the untapped potential of the world ocean. In this context, Antarctic krill was increasingly

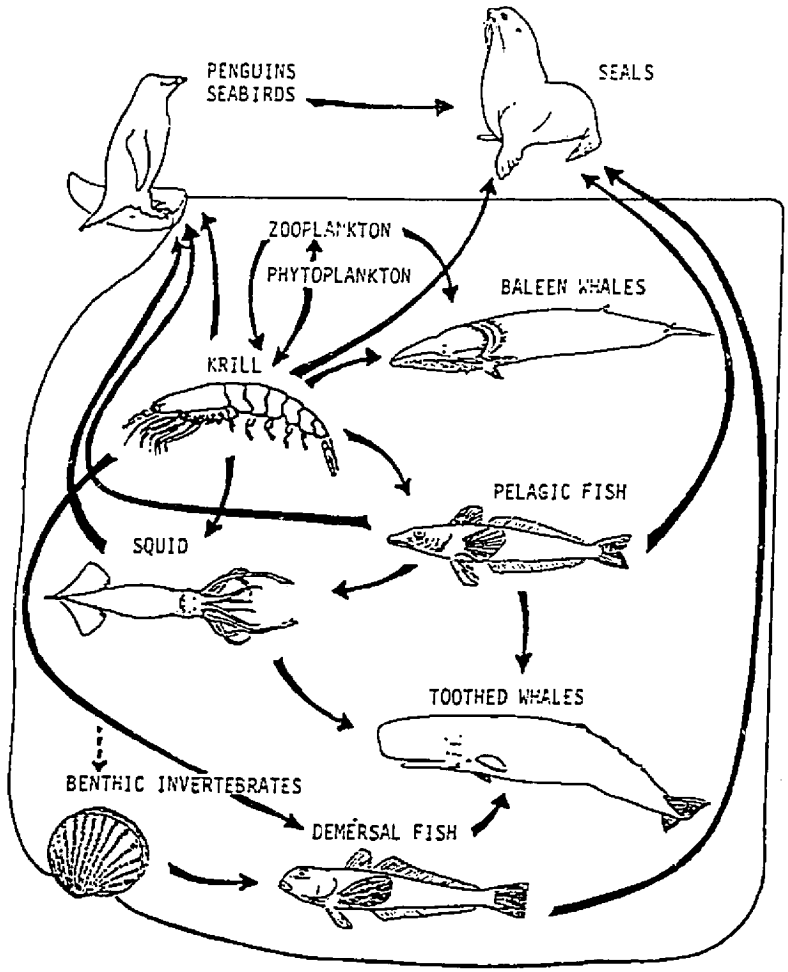
perceived as the ocean's "main untapped food resource."[14] Moreover, both Japan and the Soviet Union had experienced rapid growth in populations and consequently, expanding domestic demands for seafood.[15]

Antarctic fisheries issues were not formally addressed by the ATCPs at the international level until the mid-1970s. The dominant resource and strategic interests of the early 1970s favoured ATCPs with distant-water fishing fleets, and prevented an environmentally-oriented multilateral approach to regulation. Although the USSR's fishing practices in waters north of 60° South had potential implications for the equilibrium of the Antarctic marine ecosystem, there was a lack of consensus among the ATCPs about addressing activities that rested on the freedom of the high seas. Environmental concerns about intensive krill harvesting formed part of the rationale for the New Zealand proposal to preserve Antarctica as a world park free from commercial activity at the 1975 Oslo ATCM, but such calls were mostly ignored.[16] As krill plays a key but little understood role in sustaining the Antarctic ecosystem (see Illustration 1), the importance of adopting a conservation standard based on the potential impacts on the total ecosystem of fishing had also been stressed in scientific circles.[17] However, the Oslo ATCM adopted a Recommendation which called on governments to take appropriate measures for conservation within the framework of the Treaty, based on adequate scientific knowledge and planning to achieve among other objectives the rational use of Antarctic marine living resources. Moreover, it stopped short of calling for an international regime.[18]

In view of the need to avoid a future free-for-all scramble for fish and krill resources that had marked the history of Antarctic sealing and whaling, a coalition of non-fishing states led by the US[19] sought to mobilize a research effort to acquire data prior to any large-scale harvesting. Scientific initiatives, though, were not without political implications. The Soviet Union did not participate in the organization and

Illustration 1

The Role of Krill in the Antarctic Marine Ecosystem



Source: Commission for the Conservation of Antarctic Marine Living Resources (1991), Conserving Antarctic Marine Life (Hobart:CCAMLR).

proceedings of a 1976 international Conference on Living Resources of the Southern Ocean.[20] It feared that the resulting internationally coordinated multiship research project - Biological Investigations of Marine Antarctic Systems and Stocks (BIOMASS) - would impose on it obligations to supply scientific and commercial data, together with historical catch and effort statistics, that could potentially lead to harvesting restrictions under a future Antarctic fisheries conservation regime. In view of the formidable task of covering the vast and hazardous region of the Southern Ocean, the USSR's marine scientific and logistical capabilities were vital to the task of acquiring knowledge of the structure and dynamics of the Antarctic marine ecosystem. Its initial non-cooperation was in effect means of obtaining diplomatic leverage at future fisheries negotiations.[21]

IV. Factors Influencing an Antarctic Marine Living Resources Regime

The interests of the distant-water fishing states in Antarctic fish and krill thus emerged as a response to a complex array of international and domestic factors. The Antarctic Treaty System allowed fishing states to carry out activities without restrictions. The internal divisions between fishing and conservation-minded states over the need for an international regime, however, changed with the emergence of interest as part of international organizations in the management of Antarctic krill. The UN Food and Agriculture Organization (FAO) initiated a program in 1976 to develop what was increasingly being perceived as the vast untapped potential of Antarctic krill as part of its strategy to overcome scarcities in world food, specifically as a solution to the nutritional problems in the developing countries. FAO was perceived by many developing countries as a means to obtain a stake in the fishery resources of a global commons which otherwise would be appropriated by an "exclusive club" of rich, industrialized countries.[22] The FAO proposal sought to coordinate collection and compilation of information about Southern Ocean

fisheries resources, their harvesting and utilization, in the area south of 45° South, an area that included the Antarctic Treaty area.[23] Although initially some ATCP states implicitly favoured an internationally funded program to advance international coordination in research,[24] the scope of the subsequent proposal, with funding from the UNDP, was perceived by all ATCPs as a threat to policy-making authority in the Antarctic Treaty area and by some claimant states as eroding their asserted coastal state rights in Antarctica.[25] The initiative was also perceived as a "parallel effort" to attempts within the framework of the ATS to manage living resources. It was terminated by the FAO at the request of the ATCPs.[26] Some claimant states had viewed the prospect of activities conducted by an international agency in the maritime zones of "their" claimed Antarctic sectors, or around islands south of 45° South to which they have undisputed and/or disputed territorial sovereignty, as leading to internationalization of the living resources of those zones.[27] This perception of an external threat to resource management under the Antarctic Treaty from international organizations was a major factor influencing ATCP states to think seriously about a conservation regime within the ATS.

The momentum for a change in attitude of the ATCPs also developed as a result of the Soviet Union taking substantial catches of fish and krill.[28] In addition Japan, Poland, East Germany, Chile, Norway, as well as West Germany and Taiwan, initiated either exploratory or experimental harvesting for either krill or fish species or both.[29] The presence of fishing vessels from the two latter states was particularly significant since neither was bound by the Antarctic Treaty.[30]

This rapid build-up of external and internal interest provided the impetus for a consensus at the 1977 London ATCM on the necessity of a "definitive" regime to conserve Antarctic marine living resources within the ATS before the end of 1978.[31] It was prompted largely by the perceived need to preempt a regime being formed under the auspices of the UN. Due to

TABLE 6.1 TOTAL CATCH (TONNES) BY USSR OF INDIVIDUAL FIN FISH SPECIES IN THE SOUTHERN OCEAN, 1970-1981

Species	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
LXX	0	0	0	0	0	0	0	0	0	0	586	0
ANI	0	20932	54408	8342	7646	48530	22714	100665	174757	45390	9997	23960
TOP	0	0	0	0	0	0	0	306	1486	127	185	289
NOG	0	0	0	0	0	0	4999	830	4949	4945	996	775
NOR	399704	165194	107326	20361	20906	10248	16814	5818	50274	5818	45781	7298
NOS	0	24545	52947	3133	19977	12098	12700	15343	33909	1587	15552	9763
NOT	0	0	0	0	0	0	0	0	0	15011	7381	36758
ANS	0	0	0	0	0	0	0	0	234	0	0	1517
MZZ	0	2133	8222	3444	2252	1982	738	13735	13761	6508	5669	15062
TOTAL	399704	212804	222903	35280	50781	72858	57965	136697	279370	79386	86147	95422

Abbreviations Used for Fin Fish Species and Their Common Names in Table 6.1:

LXX	Myctophidae	Lantern Fish
ANI	*Champsocephalus gunnari*	Mackeral icefish
TOP	*Dissostichus eleginoides*	Patagonian toothfish
NOG	*Notothenia gibberifrons*	Humped rockcod
NOR	*Notothenia rossii*	Marbled rockcod
NOS	*Notothenia squamifrons*	Grey rockcod
NOT	*Patagonotothen brevicauda guntheri*	Patagonian rockcod
ANS	*Pleuragramma antarcticum*	Antarctic silverfish
MZZ	Pisces nei	Unspecified bony fish

Source: Commission for the Conservation of Antarctic Marine Living Resources,*CCAMLR Statistical Bulletin , Vol. 1 (1970-79), Doc. CCAMLR-SB/90/1; CCAMLR Statistical Bulletin, Vol.2 (1980-89), Doc. CCAMLR-SB/90/2; CCAMLR Statistical Bulletin, Vol. 3 (1981-90), Doc. CCAMLR-SB/90/3* (Hobart, Tasmania, Australia, 1990).

TABLE 6.2 TOTAL CATCH (TONNES) OF FIN FISH IN THE SOUTHERN OCEAN, 1970-1981

COUNTRY	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
BULGARIA	0	0	0	0	0	0	0	0	3345	3362	1225	0
FRANCE	0	0	0	0	0	0	0	0	0	0	277	1921
GDR	0	0	0	0	0	0	0	790	10305	4857	9970	8279
JAPAN	0	0	0	0	0	0	0	877	3396	641	0	1
POLAND	0	0	0	0	0	0	0	10088	63979	37486	19447	18139
USSR	399704	212804	222903	35280	50781	72858	57965	136697	279370	79386	86147	95422
TOTAL	399704	212804	222903	35280	50781	72858	57965	148452	360395	125732	117066	123762

TABLE 6.3 TOTAL CATCH (TONNES) OF KRILL IN THE SOUTHERN OCEAN, 1973-1981

COUNTRY	1973	1974	1975	1976	1977	1978	1979	1980	1981
BULGARIA	0	0	0	0	0	94	46	0	0
CHILE	0	0	0	276	92	0	0	0	0
GDR	0	0	0	0	0	8	102	0	0
JAPAN	59	646	2677	4750	12802	25219	36961	36275	27698
KOREA, R. OF	0	0	0	0	0	0	511	0	0
POLAND	0	0	0	0	6966	37	0	226	0
USSR	0	19139	41352	609	71656	106991	295508	440516	420434
TOTAL	59	19785	44029	5635	91516	132349	333128	477017	448132

Source: Commission for the Conservation of Antarctic Marine Living Resources, *CCAMLR Statistical Bulletin, Vol. 1 (1970-79), Doc. CCAMLR-SB/90/1; CCAMLR Statistical Bulletin, Vol. 2 (1980-89), Doc. CCAMLR-SB/90/2; CCAMLR Statistical Bulletin, Vol. 3 (1981-90), Doc. CCAMLR-SB/90/3* (Hobart, Tasmania, Australia, 1990).

the fact that some of the prospective Antarctic fishing states were non-Consultative (East Germany) or non-Treaty states (West Germany), negotiations were to be conducted through a Special Consultative Meeting to which these states could be invited. However, the scope of the regime and its basic principles were articulated beforehand by the ATCPs and covered both political and environmental objectives.

Politically, the basic principles agreed to at London recognized the primary policy-making authority of the ATCP states, including policy on environmental protection, and extended the compromise on territorial sovereignty in the Antarctic Treaty to maritime areas. Environmentally, the principles established new precedents in international marine living resource management by proposing a conservation standard that extended the scope of the regime beyond the Antarctic Treaty boundary to the Antarctic Convergence, to enable effective conservation of the marine "ecosystem as a whole." Although whales and seals (already regulated by other international regimes) were excluded from its purview, their interactions with all other species covered by the regime were to be taken into account in the policy-making process.[32] However, at the insistence of fishing states, the meaning of the term "conservation" in the future regime was clarified as "includ[ing] rational use,"[33] in the sense that harvesting would not be prohibited. For claimant states - who feared their interests in exercising coastal state jurisdiction would be undermined by an international authority - it was clarified that the regime would "exclude catch allocation and other economic regulation of harvesting."[34]

The extension of the compromise on sovereignty on land to marine areas was a major breakthrough achieved under external pressure. It enabled the ATCPs to bring Antarctic marine living resources under their management authority. The importance of controlling management within the ATS was evident in the failure of the ATCPs to give any recognition to the interests of the international community in Antarctic fisheries, even though the areas south of 60° South are considered as international waters

to which all states have equal access for fishing.

V. Negotiations For an Antarctic Marine Living Resources Regime

The negotiations for the Convention on the Conservation of Antarctic Marine Living Resource (CCAMLR)[35] spanned approximately three years (1977-1980). They were conducted within the context of growing international concerns about scarcities in food, energy and minerals. Environmental factors were given some consideration, but were largely secondary to the economic and strategic issues involving unimpeded access to Antarctica's marine living resources. The high stakes made agreement on a final draft convention difficult, and extended the negotiations beyond the originally established deadline of the end of 1978. Even agreement on the final form of the regime - significant in terms of obtaining the compliance of non-Antarctic Treaty fishing nations - was not achieved well into the negotiations. The ATCPs reached consensus on drafting a Convention only in 1979.[36] The following analysis of the contentious issues in the negotiations will provide some insights into the dominant assumptions and priorities that shaped the positions taken by states.[37]

Enforcement and Sovereignty

The issue of enforcement involved the regulation of access to marine living resources. However, unlike in other national jurisdictions, enforcement was complicated by disputes over sovereignty over the Antarctic landmass and the maritime zones circumjacent to it. The claimant states sought to protect their rights to declare economic and/or fisheries zones up to 200 nautical miles seaward in accordance with developing international law at the UNCLOS III negotiations. They argued that due to the absence of any regulation in the Antarctic Treaty pertaining to resource exploitation, the non-recognition of coastal state jurisdiction

in the CCAMLR regime would diminish their previously asserted rights, rights that had been preserved as part of the freeze on the status quo in the Treaty. They also demanded some form of benefits from resource exploitation (for example, a guaranteed share of the catch from claimed zones, or the authorization of rights to regulate fishing activities, or enforce compliance with future conservation measures in the marine areas of "their" claimed sectors) as a *quid pro quo* for refraining from declaring exclusive maritime zones. However, the fishing states led by the USSR,[38] which were also non-claimant states, supported to a lesser extent by the US, were steadfast in their opposition to any explicit recognition of coastal state jurisdiction, or to the granting of any benefits based on asserted rights that could limit their high seas freedoms south of 60° South.[39] In order to protect its claim, Australia temporarily declared a fishing zone in waters off its Australian Antarctic Territory.[40]

The problem was resolved by avoiding the sovereignty issue and resorting to a compromise of the type contained in the Antarctic Treaty.[41] This established a "bifocal approach" which allowed both claimant and non-claimant states to participate in the regime by interpreting the language of Article IV of CCAMLR according to their respective positions on territorial sovereignty.[42] The extended scope of CCAMLR north of 60° South also held political problems with regard to enforcement in the maritime zones of several sub-Antarctic islands over which several claimant states enjoyed undisputed sovereignty.[43] The inclusion of an ambiguous reference to "coastal state jurisdiction" (Article IV [2] [b]) was designed to enable claimant states to interpret this as legitimizing coastal state jurisdiction in "their" respective sectors; and to permit non-claimants to interpret the provision as applying solely to islands with established maritime sovereignty.[44] At the insistence of France, however, specific recognition of its sovereignty over its sub-Antarctic islands was incorporated in the Final Act of the 1980 Canberra Conference which adopted the CCAMLR. A reference to other islands in the same category

enabled all CCAMLR parties with island possessions to exercise de facto vetoes over conservation and enforcement measures adopted by the regime.[45] These states had the potential to establish parallel national regimes to CCAMLR; to exclude vital fishing grounds from the ambit of the regime; and, more importantly, to undermine the effective implementation of the ecosystem-wide management standard. The issue of enforcement of CCAMLR proved highly contentious. Due to the unresolved sovereignty dispute, the enforcement of the measures adopted by the Commission established by the regime was left to states (Article XXI). The practical implications of flag-state enforcement involved a potential weakening of any observation and inspection system necessary for effective compliance monitoring of the regime. Many international fisheries regimes had failed on this score by not establishing an impartial international observation and inspection scheme. For this reason, several non-fishing states (the UK, New Zealand, the US and Norway) advocated a strong observation and inspection system coupled with an adequate enforcement mechanism.[46]

The observation and inspection system finally adopted was to be enforced by national authorities. There were requirements for the submission of reports on inspections, violations, prosecutions and sanctions to the Commission. The Commission, however, was not accorded any inspection or enforcement powers.[47] There was difficulty even in obtaining consensus on the standards to guide the Commission in developing the rules for national observers and inspectors to operate.[48] The concept of the freedom of the high seas played a significant role in defining the interests of several states that saw themselves as threatened by a strong observation and inspection system.[49] Thus, despite the initial commitment to rigorous environmental standards, in practice the pressures of the fishing states to obtain a minimal regulatory regime considerably weakened the enforcement regime.

The Conservation Standard and Its Implementation

Another contentious issue at the CCAMLR negotiations, closely linked to the issue of enforcement and sovereignty, was the conservation standard and its implementation. The traditional conservation standard in international fisheries regimes was the maximum sustainable yield (MSY) concept for conserving single species. Evidence of its failure,[50] as well as the vulnerability of the entire Antarctic marine ecosystem to disturbance, had prompted the ATCPs to adopt an "ecosystem as a whole" standard in conserving Antarctic marine living resources. The unique characteristics of the Antarctic marine ecosystem - marked by the short, simple food chain and the dependence of a large number of predatory species upon a single source of prey species, and the importance of krill and its vulnerability to overexploition - had encouraged non-fishing states to press for a holistic approach to conservation. These states pressed for strictly controlled harvesting based on adequate scientific and fisheries information not only on the impact of fishing on the target species, but also the various complex interrelationships among all species (including depleted stocks such as whales and seals).[51]

Devising mechanisms for implementation of the ecosystem standard involved adoption of a precautionary approach to harvesting. Planned activities had to be approved on the basis of adequate scientific and ecological data. Their lack of significant impacts on the ecosystem had to be demonstrated. This entailed restraints on fisheries which the fishing states, especially the USSR and Japan, strongly resisted. They preferred the MSY standard for setting any quotas or conservation measures.[52] Fishing states' acceptance of the ecosystem standard was based on an understanding that they would be able to exercise an effective veto through consensus voting or objection procedures in the CCAMLR policy-making process.[53] They also perceived the ecosystem standard as unworkable because of a lack of information about the ecosystem and the status of

stocks, and argued that such uncertainty could lead to interpretations designed to impose harvesting restrictions. Thus, fishing states insisted on including in the definition of the objectives of CCAMLR a specific reference to "rational use" within the meaning of the term "conservation" (Article II).[54]

This conditional acceptance of the ecosystem standard in the CCAMLR regime can be attributed in part to the experience of the Russians and the Japanese in other conservation regimes where the ecosystem standard had been gaining ground, threatening their resource exploitation interests. Within the IWC, for example, continued whaling by Russian and Japanese whalers had by 1980 encouraged non-whaling states, particularly the US, to propose a complete moratorium on commercial whaling.[55]

The ecosystem standard of conservation necessitated the extension of the political boundary of the Antarctic Treaty to the biogeographic boundary of the Antarctic marine ecosystem, which begins at the Antarctic Convergence - the boundary between the Southern Ocean and the water masses of the other oceans. This scope of the regime was proposed by the scientific delegates of the UK and the US. Its acceptance proved to be contentious, however, in view of both political problems involving sovereignty over the sub-Antarctic islands and also the natural fluctuation in the Convergence.[56]

Other implementing mechanisms for the conservation standard also proved contentious. The need for some kind of harvesting restrictions emerged from several proposals. Argentina, for example, proposed a "reserved, ecological zone" designed to protect the "reproductive cycle" of species, especially that of krill.[57] If accepted, this would have had the effect of restraining the expansion of fishing around Antarctica, as well as providing time for adequate information to be acquired. However, it proved to be too controversial in terms of restricting the freedom of fishing on the high seas; its precedential implications for rights of access to future mineral resource activities in the Antarctic continental

shelf;[58] and its potential to enhance the position of claimant states *vis-à-vis* non-claimants over sovereignty in maritime zones. A proposal by Chile for the prohibition of land-based fish processing facilities also had implications for a future minerals regime and was withdrawn.[59]

The establishment of interim fishing catch limits was seen by non-fishing states as an integral part of giving practical effect to the ecosystem standard. These were needed, for example, for restoring depleted whale populations, ensuring that no species was exploited beyond the level which ensured the greatest net annual increment, and preventing irreversible changes in the ecosystem. Interim catch limitations to prevent overharvesting in the period between the signing and entry into force of the Convention were strenuously resisted by the USSR, Japan and Poland, which argued that setting binding conservation measures was a task for the future Commission. A US proposal for an interim catch limit for krill of two million tons, based on an assessment of the risk to the recovery of whales and to ensure that the expansion of fishing did not outpace the availability of data on the impacts of harvesting, was rejected.[60] The interim conservation measures ultimately agreed on formed part of a non-binding resolution in the Final Act. This urged all states to develop and share fisheries and scientific data, and called on fishing states to exercise restraint, but without allocating any specific limits.

Allocating national catch and effort quotas once the regime became operational was also a major area of contention. Due to the objections of the claimant states, which were reluctant to cede the "right" to allocate and enforce catch and effort limits to an international authority, the Commission was only implicitly empowered to assume this task. It could assert its authority in this regard only with the approval of claimant as well as fishing states.[61] The consensus decision process in the Commission made allocation of national catch or effort quotas a difficult proposition.

Participation and Decision-Making Procedures in the Institutional Machinery

The nature of participation and decision-making in the institutional machinery of CCAMLR regime was crucial for its effectiveness. The Commission was established as the executive authority. Unlike in most international high seas regimes, it is restricted to those states which drafted CCAMLR (the ATCPs), those which were invited to participate in the drafting (East and West Germany), as well as any acceding state that demonstrates active interest in research or harvesting activities in the Southern Ocean. In addition, regional economic integration organizations whose members have membership in the Commission and who have transferred their responsibilities over fisheries to such organizations are entitled to participate; the European Communities (EC) was the only organization that qualified under this criterion. Such restrictions on the membership of an international organization designed to manage the resources of the high seas were incongruous. Although the Antarctic Treaty did not explicitly deal with economic exploitation, its recognition of the area south of 60° South as a region in which the freedom of the high seas operates (Article VI), theoretically, at least, guarantees all nations equal access to the marine living resources of Antarctica.[62] Restrictive participation was largely designed to consolidate the political authority of the ATCPs.[63] It can be attributed to their perception of external threats from international organizations and developing countries. Equity considerations that had originally motivated interests in Antarctic krill for the benefit of developing countries were thus eliminated.[64] More importantly, participation in the CCAMLR negotiations and regime were perceived as having precedential implications for participation in the negotiations for a future Antarctic mineral resource regime in terms of the conditions of access to and the modalities of benefit sharing in such a regime.[65] Developing countries' demands to have Antarctica's minerals

developed under the future regime of the International Seabed Authority to be established by the UNCLOS III negotiations also reinforced the need to restrict participation in the CCAMLR regime.

More particularly, participation was also restricted due to the pressure of fishing states, which feared being outnumbered by conservation-oriented states.[66] Much of the opposition of the two major fishing nations in the Southern Ocean, the USSR and Japan, to any regime based on universal membership and majority decision-making can be in part attributed to their experiences at the IWC. The open membership in the International Convention for the Regulation of Whales had permitted, by the late 1970s, the adherence of several conservation-minded states to the regime. The simple majority voting system in the IWC[67] had permitted these states to put conservation interests ahead of economic interests. In particular, the adherence of non-whaling developing countries had resulted in the adoption of several decisions restricting the harvesting of whales in 1979-80, while proposals for a world-wide moratorium on whaling had gained increased support.[68]

The participation of non-Antarctic Treaty states was not the only area of dispute. The application of the EC for participation as an observer in the final CCAMLR negotiations, and subsequently as a full member in the regime, also proved contentious. The assumption of responsibilities for fisheries management by the EC for its member-states under the Common Fisheries Policy provided grounds for its involvement in the CCAMLR regime, along with its Antarctic Treaty members (Belgium, France, West Germany and the UK). The USSR viewed with considerable hostility the prospect of a supranational organization exercising the rights of a sovereign state in international treaty-making and implementation processes. An implicit understanding was arrived at that granted the EC observer rights at the final conference, and full membership (alongside its CCAMLR member states) in the CCAMLR Commission without double or multiple votes; but it was not permitted to sign the

Convention.[69] However, in the tradeoff, the USSR was able to extract several concessions. Observers from both intergovernmental and non-governmental organizations were restricted in the final conference, as well as in the Commission and Scientific Committee of the regime, in terms of offering expert advice. Moreover, the applications of the Netherlands and South Korea, both of which were involved in research, were rejected on the sole objection of the USSR.[70] However, the participation of East and West Germany was not controversial as both states were engaged in Antarctic research and were expected to become Antarctic Treaty Consultative Parties.

Voting procedures were also a contentious issue. The fishing states, in particular the USSR and Poland, were strongly opposed to majority votes that had the potential to bind them to catch and effort quotas. Claimant states, particularly, Argentina and Chile, feared a dilution of their sovereign "rights" by entrusting an international body with the making of binding decisions.[71] The US had initially proposed that decision-making in the Commission be by a two-third majority on all matters of substance, including the adoption of conservation measures.[72] The fishing states however, were able to link their support for the adoption of the ecosystem conservation standard to the principle of consensus or unanimous voting, which gave them a veto on any harvesting restrictions.[73] In addition, an objection procedure permitted member-states to "opt out" of any conservation measure within 180 days of its adoption. The objection procedure is a standard mechanism in most international fisheries regimes, but only where majority decision-making is the rule. Its inclusion in CCAMLR, where consensus was the rule, afforded fishing states a *de facto* double veto on a conservation measure: first, at the negotiation stage and secondly, if they reconsidered their support after adoption of a rule. The consensus procedure, it was assumed, would discourage the use of the objection procedure.[74] All this, along with the veto guaranteed to member-states with established maritime sovereignty over islands in the

CCAMLR area, had the potential to severely weaken the effectiveness of the Commission. Thus, considerable trade-offs were made to accommodate what the fishing states viewed as their interests in harvesting Antarctica's marine living resources.[75]

The contentious nature of the decision-making procedures in the Commission spilled over into the definition of the relations between the Commission and the Scientific Committee, and the decision-making process in the latter body. It was assumed that the consensus procedure would be applied here too. The Scientific Committee's role was critical in view of the importance of the scientific advice that it was to provide to the Commission on implementing the ecosystem-wide conservation standard. The Committee was to work largely under the direction of the Commission, however, and was not given its own staff and budget to guarantee greater impartiality.[76] A measure of transparency was provided by empowering it to publish its views independently of the Commission, including those of minority members involved in a decision. However, many of the questions involving relations between the two bodies, and the rules of procedure for each, were left unresolved or to be determined after the entry into force of CCAMLR. The dominance of political issues pertaining to the need to protect respective juridical positions, as well as the relative lack of representation of scientists on national delegations, has been attributed to the minor role played by the Scientific Committee in the negotiations.[77]

VI. Role of Non-State Actors

Four types of non-state actors were involved in the CCAMLR negotiations. These included intergovernmental organizations under the umbrella of the UN, for example, the FAO and the IOC as well as *ad hoc* conservation organizations such as the IWC; non-governmental scientific organizations such as SCAR and SCOR; NGOs such as the Antarctic and

Southern Ocean Coalition (ASOC) and the International Institute for Environment and Development (IIED); and IUCN, which contained members from both governmental and non-governmental sectors working on conservation. All these organizations were largely marginalized by the secrecy surrounding the CCAMLR negotiating process. As only the final Diplomatic Conference at Canberra was conducted outside the Antarctic Treaty framework, no formal procedure was available for these organizations to effectively provide input into the treaty-making process.[78]

The FAO, which had stimulated much of the early interest in Antarctic krill as a potential source of protein for developing countries, was effectively prevented from providing its expertise to the negotiations after 1977, with the termination of the Southern Ocean Fisheries Survey Program. Although the FAO, the IOC and the IWC, were invited to the final Conference along with SCAR and SCOR as observers, they were essentially ignored as a result of the rigid procedural rules that the USSR insisted should be applied to the participation of observers. Although designed primarily to exclude the EC, the rules were subsequently applied to all non-state actors. Non-state actors were seen by the Soviets as applying undesirable external pressure on the work of the conference; this was best exemplified in its proposal to the rules of procedure, banning circulation of conference documents by observers.[79]

The only significant roles played by non-state actors in the CCAMLR negotiations were those by ASOC, IIED and IUCN. Environmental NGOs, concerned that the regime would be dominated by fishing interests, determined that only a global network could lobby for an ecosystem-based conservation regime with effective enforcement mechanisms. The ASOC coalition consisted of 100 environmental NGOs in twenty countries. It was formed in 1979 to lobby governments on the approach to the CCAMLR negotiations, and concentrated its efforts on influencing the governments of non-fishing treaty states on the need for scientifically derived conservation measures, taking into account the possible effects of fishing

on whales and other species.[80] Strong emphasis was placed on lobbying the governments of the US, the UK and Australia, which had no economic stakes in the fishery, on the need to establish rigorous management rules and to prevent decision-making by the unanimity rule. Environmentalists' experiences with the IWC regime in the late 1970s had instructed them on the efficacy of lobbying states with conservationist interests in order to curb over-exploitation.

Due to the secrecy that surrounded the CCAMLR negotiations, ASOC faced formidable barriers. Nevertheless, it used its national affiliates to obtain access to the domestic policy processes of some of the non-fishing states. US groups which initiated the formation of the network[81] were successful in opening up the CCAMLR domestic policy process to public participation. They were handicapped, however, by their failure to access classified documents pertaining to the negotiations, and by delays in the conduct of public hearings.[82] Nevertheless, some of the strong conservationist positions taken initially in the negotiations by the US - such as the need for an interim harvest quota for krill, and on the need to strengthen the ecosystem standard - were based on proposals submitted by NGOs.[83] These were abandoned in the face of the dominant political priorities of the impending mineral regime negotiations and opposition from fishing states. Both the US and the Australian delegations at the Diplomatic Conference had NGO representatives as advisors, but the ASOC coalition's petition to be accredited as an independent observer was turned down.[84] The IIED, which lobbied both the UK and US governments and in collaboration with ASOC monitored the negotiations, was one of the few sources of public information.[85] The USSR, perceiving environmental NGOs as the most likely non-state actors to influence the positions of the non-fishing states, was keen to exclude them from participation. Exclusion would also avoid setting a precedent for their participation in the institutions of the future regime.[86] Moreover, informal negotiating procedures that had developed in the ATCMs were adapted to the CCAMLR

process whereby small group of delegates deliberated on crucial substantive issues, thus excluding observers.[87]

Accordingly, ASOC and other NGOs looked to other means to influence the CCAMLR negotiations, for example, through the participation of IUCN as an observer. Several of the NGO proposals to implement the ecosystem approach which had been endorsed by the IUCN were informally circulated to delegations by the IUCN. They had little impact, however, as the USSR opposed any changes to the important articles that had been agreed on at previous negotiating sessions.[88]

Environmentalists were thus disappointed by CCAMLR's failure to establish a precautionary approach to fishing despite its enunciation of the first international conservation standard based on an ecosystem approach. The compromises the non-fishing states made to secure the agreement of the fishing states for CCAMLR - restrictions on membership, the consensus decision-making procedures, and the 180-day objection procedure that permits any state to opt out of any conservation measure not to its liking - were perceived with "extreme apprehension" as contributing to a clear risk of overexploitation.[89] Other weaknesses identified in CCAMLR included its failure to emphasize the need for a full scientific understanding of the ecosystem prior to any exploitation. its failure to spell out effective inspection and enforcement mechanisms, the exclusion from participation of states with primarily conservation interests, and the lack of an explicit role for NGOs. These flaws were seen by NGOs as providing for considerable uncertainty in its practical implementation.[90] In particular, the exclusion of the majority of non-Antarctic Treaty states from the negotiation of a treaty which involved high seas resources was viewed as presenting a "*fait accompli* for the rest of the world to endorse."[91]

Yet despite its shortcomings, CCAMLR was welcomed by NGOs as providing at least some form of regulation. They hoped to exert pressure on governments at the domestic level to take timely action in adopting

implementing legislation to enable the entry into force of CCAMLR. Their limited success in influencing the CCAMLR negotiations spurred them on to widen their campaign against future Antarctic minerals development. Thus, the role of non-state actors was largely circumscribed by the ATCP states from the beginning of the negotiations. The rules of procedure for participation and the circulation of documents, as well as the practice of consensus decision-making in the Antarctic Treaty, prevented non-state actors from even being invited as observers until the final Diplomatic Conference.[92] The interests of the international community and international organizations that were affected by the high seas character of Antarctic marine living resources were thus not adequately represented in the CCAMLR negotiations. Even the participation of supranational regional organizations proved controversial, as was evident in the case of the EC. On the other hand, some intergovernmental organizations lacked the ability to influence the CCAMLR negotiations because they were constrained by their own procedural rules, which required approval of initiatives by all member-states, including the ATCP governments.

Environmental NGOs were only marginally able to influence the CCAMLR negotiations by utilizing the steady growth in global environmental awareness to pressure governments. Their activities at the domestic level were constrained. Only in the Western ATCP states were environmental NGOs able to obtain access to policy processes. They lacked such access in ATCP states with closed political systems, such as the USSR, Poland, and East Germany, which also were some of the leading fishing nations in Antarctica. Even in the Western countries, environmentalists were unable to draw much public attention to the Antarctic marine living resource negotiations because of inadequate resources and their strategy of focussing on lobbying governments. Only limited efforts were made to mobilize public opinion, and there were difficulties in generating public interest in the issues of such a remote region of the world. Antarctic environmental issues generally did not attain political salience in

Western countries until the mid-1980s in the context of the minerals issue.

VII. Conclusion

This chapter has looked at the regime for the conservation of Antarctic marine living resources. It is apparent that the regime was primarily created to thwart external pressures on the Antarctic Treaty from international organizations and developing countries in light of growing interests in Antarctic krill. There was a perceived need to consolidate the policy-making authority of the ATCP states with regard to Antarctic resources, in spite of considerable internal divisions on their part about the appropriateness of regulating activities in the maritime areas of Antarctic Treaty. The fear of an alternative regime to the Treaty under the auspices of a UN agency drove the creation of CCAMLR. The regime was created within the context of growing international concerns about scarcities in food, energy and minerals in the late 1970s and early 1980s. Environmental factors were given some consideration, as in the ecosystem principle, but were largely secondary to the economic, strategic and political interests of states in maintaining unimpeded access to Antarctica's resources. The fishing states, especially the USSR and Japan, which had harvesting overcapacity in their long distant fleets stemming from their exclusion from traditional fishing grounds and the depletion of stocks elsewhere, were able to gain considerable leeway in terms of access to fish and krill. They successfully placed considerable emphasis on their freedom of action by restricting participation to subsequent negotiations.

The CCAMLR negotiations were also implicitly linked to future Antarctic minerals negotiations. The compromises that were arrived at had the effect of watering down the rigorousness of the ecosystem principles; they thus prevented adverse precedents being set that might jeopardize the interests of the ATCPs in the mineral resource negotiations. The need to

protect juridical positions on the sovereignty issue - epitomized by the recognition of France's maritime rights around its sub-Antarctic islands - was perceived as vital in view of the impending negotiations on a regime for Antarctic mineral resources, where the stakes were considerably higher. The emphasis placed on the ecosystem principle was largely a means to enhance the international image or prestige of the ATCPs. The structure and rules of the CCAMLR negotiating forum were thus not conducive to an influential role for non-state actors. Environmental NGOs were the only groups to even minimally influence the negotiations, and these were largely effective at the domestic policy formulation level of some of the non-fishing states.

Notes for Chapter 6

1. "Convention on Fishing and Conservation of the Living Resources of the High Seas (signed April 29, 1958; effective March 20, 1966)" in *United Nations Treaty Series* Vol. 559 (1966), Article 1, p. 285. The only restrictions on the freedom of fishing was a largely hortatory duty of states to take, or to cooperate with other states in taking, any necessary measures for conservation and management of living resources of the high seas. Ibid., Article 1 (2).

2. The Antarctic Treaty is deemed to apply to the area south of 60° South Latitude, including all ice shelves, while at the same time guaranteeing the rights under international law pertaining to the high seas (Article VI), which includes the freedom of fishing.

3. From the few publicly available documents of the Washington negotiations, an internal US State Department memo indicates that only Argentina and Australia had supported inclusion of the sea south of 60° South Latitude within the zone of application. See "Memorandum From the Director of the Antarctica Staff (Owen) to the Deputy Assistant Secretary of State for International Organization Affairs (Walmsley)" in United States. Department of State (1991), *Foreign Relations of the United States, 1958-1960*, Vol. II, Doc. 284, pp. 545-6.

4. In proposing to the ATCPs general principles and recommendations for conservation under the Treaty, SCAR in 1961 cited that for "administrative reasons it would be difficult to apply [them]...outside coastal waters." *SCAR Bulletin* (1961), "Conservation of Nature in Antarctica," No. 8 in *Polar Record* Vol. 10, p. 533.

5. The argument was put forward by US biologist Garrett Hardin using the analogy of the medieval herdsmen overstocking the open pasture land that resulted in overgrazing and starvation of the herds. Hardin (1968), "Tragedy of the Commons" in *Science* Vol. 162 pp. 1243-8.

6. See Birnie [ed] (1985), *International Regulation of Whaling: From Conservation of Whaling to Conservation of Whales and Regulation of Whale-Watching*, Vol. I; and Tonnessen and Johnson (1982), *The History of Modern Whaling*.

7. The only official document to refer to the activities concerned was a SCAR report, which implicitly urged Soviet and Japanese scientists to publish the results of the experimental fishery and stressed the importance of krill for the overall Antarctic ecosystem. *SCAR Bulletin* (1967), "Ninth Meeting of SCAR, Santiago, 20-24 September 1966," No. 25 in *Polar Record* Vol. 13, p. 555.

8. Krill was speculated as one of several Antarctic resources with a commercial potential. *New York Times* (1963), "Antarctic Abounds in Rich Ores; Big Tourist Industry Envisioned" April 15, p. 114.

9. Soviet scientist, P.A. Moiseev's paper presented to the 1968 SCAR Symposium on Antarctic Biology proved a catalyst for the development of perceptions about the resource potential of Antarctic krill; he suggested an available surplus of 150 million metric tons of krill in contrast to the then total annual world fish catch of 60 million metric tons. Moiseev (1970), "Some Aspects of the Commercial Use of the Krill Resources of the Antarctic Seas" in Holdgate [ed], *Antarctic Ecology*, Compiled by SCAR, pp. 213-6.

10. Kaczynski (1981), "Factory Motherships and Fish Carriers" in *Journal of Contemporary Business* Vol. 10, pp. 59-74.

11. E.g., the depletion of North Atlantic stocks in the Barents Sea, the Norwegian coast and Bear Island was a major impetus for the UK fleet to explore the prospect of developing new fishing grounds in the Antarctic; and the increasing presence of Russian and Japanese vessels in the Scotia Sea in the Antarctic was interpreted as an indicator of the crisis in the traditional northern fishing grounds. *Times* [London] (1970b), "Antarctica's Prize" August 26, p. 8.

12. The activities of the USSR and Japan in the Antarctic were perceived with considerable concern by some British scientific and industrial groups. See *Times* [London] (1970a), "More Intensive Antarctic Research Called For" July 5, p. 2; *Times* [London] (1970b); and *Times* [London] (1973), "UK Trawlers May Sound Out Antarctic" October 8, p. 22.

13. The first large-scale commercial harvesting of fish in the Southern Ocean, although undertaken outside the Treaty area, had by the early 1970s led to the overexploitation of 2 species of stocks; due to the lack of systematic reporting of catch data, precise information as to the reductions in stocks that occurred as a result of the catches of the Soviet fleet in the vicinity of South Georgia and Kerguelen Islands, two of the richest fishing grounds for Antarctic species, in the period 1969-72 was unavailable. Although the UK and France respectively claim sovereignty over the areas in question, no regulations seem to have been in place. A 1977 UN survey done by an UK scientific consultant suggested that the only control that was exercised in South Georgia and Kerguelen was that of the flag-state undertaking the fishery, the USSR. See Everson (1977), *The Living Resources of the Southern Ocean*, Southern Ocean Fisheries Survey Program, Doc. GLO/SO/77/1, pp. 103; 129.

14. *New York Times* (1974), "World Fish Supply Too Depleted to Fill Needs of the Hungry" October 26, pp. 1; 24.

15. Kaczynski (1981), p. 60.

16. It was the concern over potential exploitation of krill and not fish that prompted New Zealand to first informally raise the issue in the context of Antarctic resource exploration at the 1970 Tokyo ATCM; but although it was agreed that the problem should be faced at the following ATCM in Wellington in 1972, the proposed temporary moratorium on all commercial exploration by New Zealand on that occasion, failed to gain unanimous support. *New Zealand Foreign Affairs Review* (1978), "New Zealand and the Antarctic Treaty: Address by the Right Hon. B.E. Talboys, Minister of Foreign Affairs to the New Zealand Antarctic Society, Wellington, 26 April" Vol. 28, pp. 32; 33.

17. *SCAR Bulletin* (1973), "Twelfth Meeting of SCAR, Canberra: 14 to 19 August 1972" No. 43 in *Polar Record*, Vol. 16, p. 635; and *SCAR Bulletin* (1975), "Thirteenth Meeting of SCAR, Jackson Hole: 3 to 7 September 1974" No. 49 in *Polar Record* Vol. 17, pp. 440-1.

18. Recommendation VIII-10 in *SCAR Bulletin* (1976), "Report of the Eighth Antarctic Treaty Consultative Meeting, Oslo, 1975" in *Polar Record* Vol. 18, pp. 223-4.

19. US government officials had warned that the US needed to develop a conservationist position as a means of obtaining diplomatic leverage at future fisheries negotiations as the fishing and prospective fishing

nations (USSR, Japan, France, Germany and Taiwan) expanded Antarctic krill harvesting. United States. National Science Foundation. Office of Polar Programs (1975), "Position Paper on Antarctic Krill" Distributed by Robert H. Rutford.

20. *SCAR Bulletin* (1975), "Report of the SCAR Executive Meeting, Cambridge: 25-26 June 1975" No. 51 in *Polar Record* Vol. 17, p. 714; *SCAR Bulletin* (1976), "Report of a Meeting of the SCAR Group of Specialists on Living Resources of the Southern Ocean, Cambridge: 6-8 October 1975" No. 52 in *Polar Record* Vol. 18, p. 105; *SCAR Bulletin* (1977), "SCAR/SCOR Group on the Living Resources of the Southern Ocean: Report of a Meeting Held at Woods Hole, USA, 23-24 August 1976" No. 55 in *Polar Record* Vol. 18, p. 419.

21. However, the USSR began participating in BIOMASS in September 1979; nevertheless, the international Group of Specialists on Living Resources of the Southern Ocean that coordinated the project decided that in view of the "failure by some countries, including those with major commercial fisheries in the Antarctic, to supply...data,...[to] recommend that SCAR should request National Committees to draw attention of governments to the importance of supplying current (scientific and commercial) data together with historical catch and effort statistics, especially from the South Georgia and Scotia Sea areas." *BIOMASS Report Series* (1979), "Meeting of Group of Specialists on the Living Resources of the Southern Ocean: Krakow, Poland, September" No. 7, p. 1. According the ex-Convenor of the Group of Specialists on Living Resources of the Southern Ocean, during the formative years of planning for BIOMASS (1972-77), the USSR kept away from the work of the Group without giving any reason. Personal Communication from Professor Sayed Z. El-Sayed, Convenor, SCAR/SCOR Group of Specialists on the Living Resources of the Southern Ocean, 1972-78.

22. Some developing countries viewed the "opening" of Antarctica in terms of developing its living resources as making "a great contribution to the implementation of the New International Economic Order proclaimed by the United Nations General Assembly." Food and Agriculture Organization of the United Nations. Committee on Fisheries (1977), *Report of the Eleventh Session of the Committee on Fisheries, Rome, 19-26 April*, FAO Fisheries Reports, No. 196, p. 7. In view of the majority of contracting parties to the Antarctic Treaty being at the time rich industrialized states, some developing countries drew an analogy between the transfer of resources from the industrialized to developing countries urged by the New International Economic Order to developing countries obtaining a share of the benefits from Antarctic fisheries development.

23. The long-term objective of the Southern Ocean Fisheries Survey Program was to "improve the knowledge of the nature, magnitude, and distribution of the living resources of the Southern Ocean, with a view to their eventual rational utilization for the benefit of the world as a whole and of the developing countries in particular." United Nations Development Program (1975) *Southern Ocean Fisheries Survey Program*, Doc. GLO/75/006; and Food and Agriculture Organization of the United Nations (1979), *Southern Ocean Fisheries Survey Program: Final Report*, Doc. DP/GLO/FINAL REPORT/5, May 24.

24. See Food and Agriculture Organization of the United Nations (1974), *Informal Consultation on Antarctic Krill: Rome, Italy, 14 October*, FAO Fisheries Reports, No. 153, p. 3. However, the six ATCPs that were represented at this meeting were all represented by scientific experts on krill and it was not explicit whether their favourable response to a FAO role reflected the views of their respective governments.

25. An UK Antarctic diplomat, Brian Roberts has suggested, among other objections to the FAO proposal, the scope of the program to cover waters south of 45° South which had the potential to disturb the ATS and also and that it ignored the "special problems of jurisdiction" in Antarctica. Roberts (1977), "International Cooperation for Antarctic Development: The Test of the Antarctic Treaty" in *Polar Record* Vol. 19, pp. 113-4.

26. Comments of Director General, Ministry of Foreign Affairs of Chile, Fernando Zegers at the 1982 Conference on Antarctic Resources Policy in Zegers (1983), "The Canberra Convention: Objectives and Political Aspects of Its Negotiation" in Orrego Vicuña [ed], *Antarctic Resources Policy: Scientific, Legal and Political Issues*, p. 152.

27. FAO subsequently reported that, in response to its initiation of the Southern Ocean Fisheries Survey Program, diplomatic notes were received from Argentina and Chile, and correspondence was exchanged with the UK and Australia about those states' concerns that the implementation of the project should be carried out with "special regard to the rights and obligations of the Antarctic Treaty Consultative Parties and in full recognition of the need to work in close cooperation with those countries." United Nations. General Assembly (1986), *Question of Antarctica: Report of the Secretary-General*, Doc. A/41/722, 41st Session, Agenda Item 66, p. 14. Fear of internationalization and potential control by the UN had also previously motivated the ATCPs to exert diplomatic pressure on developing countries to prevent the issue of Antarctica from being formally raised at the UN Conference on the Law of the Sea. *Science* (1977), "Antarctic Problems: Tiny Krill to Usher in New Resource Era" Vol. 196, pp. 504-5.

28. Catch data subsequently reported indicated that the USSR had increased its catches of finfish and krill from the Southern Ocean after 1978. See Tables 6.2 and 6.3.

29. Everson (1977), Tables 6.10-12 (p. 59) and Table 8.30 (p. 108).

30. West Germany's membership of SCAR and its active participation in the BIOMASS project may have somewhat allayed the ATCPs fears. Taiwan had not indicated its intent on joining SCAR or participating in BIOMASS when it initiated experimental krill fishing.

31. Recommendation IX-2 (Antarctic Marine Living Resources) in United Kingdom. Foreign and Commonwealth Office (1977), *Antarctic Treaty: Report of the Ninth Consultative Meeting: London 19 September-7 October*, pp. 13-6.

32. Ibid.

33. Ibid., p. 7. This was inserted as an item separate from Recommendation IX-2.

34. Ibid.

35. "Convention on the Conservation of Antarctic Marine Living Resources" in *International Legal Materials* Vol. 19 (1980), pp. 841-59.

36. Recommendation X-2 (1) in United States. Department of State (1979), *Antarctic Treaty: Report of the Tenth Consultative Meeting: Washington, D.C., September 17-October 5*, p. 13.

37. There are few publicly available documents to the CCAMLR negotiations. The analysis is based on the an interview the author conducted with Dr. Robert F. Hofman, Scientific Program Director, US Marine Mammal Commission and a member of the US delegation to the CCAMLR negotiations (1977-1980) in Washington, D.C. March 17, 1992. Other primary sources include the writings of the following who attended or were associated with the negotiations: James N. Barnes, Convenor, Antarctic and Southern Ocean Coalition and NGO representative on the US delegation to the negotiations; Barbara Mitchell and Lee Kimball, research associate and consultant, respectively who monitored the negotiations for the International Institute for Environmental and Development; Michael Kennedy, Friends of the Earth-Australia who was NGO representative on the Australian delegation to the final Diplomatic Conference; and David M. Edwards and John A. Heap, Legal Counsellor and Head of Polar Regions Section, respectively of the UK Foreign and Commonwealth Office and members of the UK delegation.

38. The Soviet position was expounded by two diplomats, who wrote in 1978 that Antarctic conservation measures should be no more rigorous than those applied to regulate rational use of marine living resources in other regions of the world. Khlestov and Golitsyn (1978), "The Antarctic: Arena of Peaceful Cooperation" in *International Affairs* [Moscow], no. 8, p. 64.

39. Interview with Hofman.

40. However due to the sensitivity of the issue for the living resource negotiations, Australia excepted the waters of the AAT from enforcement actions. See "Australian Fishing Zone: Ministerial Statement" in Australia. Parliament. House of Representatives (1979), *Parliamentary Debates: Weekly Hansard*, No. 16, Sept. 25, 31st Parl., 1st Sess., pp. 1463-6; see also, *Fishing News International* (1978), "Australia Stakes Antarctica Claim...But Can She Exploit These Krill-Rich Waters?" Vol. 17 (12), p. 3.

41. All CCAMLR parties, irrespective of their being party to the Antarctic Treaty, are bound by Articles IV and VI of that Treaty in their relations with each other.

42. Edwards and Heap (1981), "Convention on the Conservation of Antarctic Marine Living Resources: A Commentary" in *Polar Record* Vol. 20, p. 360.

43. The claimant states with established maritime sovereignty over sub-Antarctic islands are: France (Crozets and Kerguelens); Norway (Bouvet); Australia (Heard and MacDonald); and South Africa (Prince Edward).

44. Interview with Hofman.

45. Interview with Hoffman. The rights involved: retention of national conservation measures adopted prior to CCAMLR's entry into force; a veto over any specific CCAMLR conservation measure proposed for such island waters; a veto over CCAMLR conservation measures adopted by consensus; and the right to enforce all (both national and CCAMLR) conservation measures, including a veto over observation and inspection measures or their manner of implementation as envisaged by CCAMLR.

46. Barnes (1982), "Emerging Convention on the Conservation of Antarctic Marine Living Resources: An Attempt to Meet the New Realities of Resource Exploitation in the Southern Ocean" in Charney [ed] (1982), *The New Nationalism and the Use of Common Spaces: Issues in Marine Pollution and the Exploitation of Antarctica*, p. 267.

47. Besides national enforcement, the CCAMLR parties had two other options with regard to enforcement. Mutual enforcement which would have authorized fishery inspectors to board not only fishing vessels carrying their own flag, but also vessels under the flag of other parties; however, any infraction can only be reported to the authorities of the flag state concerned who have exclusive power of sanction. However, through special arrangements, inspectors could be empowered to seize any offending vessel and arrest its crew. The second option involved international enforcement which provides for inspections carried out by observers and inspectors appointed by an international fisheries organization, but prosecution of offending vessels would be within the jurisdiction of flag state concerned. Koers (1973), *International Regulation of Marine Fisheries: A Study of Regional Fisheries Organizations*, pp. 220-1.

48. The task was left for the future Commission to establish (Article XXIV [2][b]). Diplomats Edwards and Heap have written that the issues of observation and inspection was too "difficult" an issue to be rushed through at the CCAMLR negotiations; in defending the system of national enforcement adopted, they have claimed that the reporting of violations and sanctions taken to the Commission required of a member state under the regime and what they termed, the Commission's "watch-dog" role in informing all parties about infringements, was an adequate mechanism, which could improve the Commission's authority in enforcing CCAMLR obligations. Edwards and Heap (1981), p. 358.

49. The interests that were perceived as threatened by a strong observation and inspection system can only be surmised due to the secrecy that pervaded the negotiations. The category of states with the strongest objections would have been the fishing states wishing to resist scrutiny of their fishing practices by international inspectors. Other states may have perceived threats from a strong CCAMLR observation and inspection system on precedential grounds such as its implications for compliance monitoring under a future mineral resource regime and for the freedom of navigation in the international waters within the Antarctic Treaty area.

50. See Talbot (1975), "Maximum Sustainable Yield: An Obsolete Management Concept" in *Transactions of the North American Wildlife and Natural Resources Conference*, Vol. 40, pp.91-5; and Larkin (1977), "An Epitaph for the Concept of Maximum Sustainable Yield" in *Transactions of the American Fisheries Society* Vol. 106, pp. 1-11.

51. In the domestic policy process leading up to the CCAMLR negotiations, the US Marine Mammal Commission was largely instrumental in giving substance to an US proposal advocating the adoption of the ecosystem standard. Interview with Hofman.

52. Interview with Hofman; Barnes (1982), pp. 250; 262.

53. Barnes (1982), pp. 262; 282.

54. Interview with Hofman. The ecosystem approach at least in terms of its original interpretation was retained as the conservation standard largely due to the efforts of Australia. Kennedy (1980), "Antarctic Marine Living Resources Conference: A Compromise" in *Habitat* [Australia] Vol. 8 (5), p. 9.

55. See "Provisional Agenda for the 32nd Annual Meeting of the International Whaling Commission July, 21-26 1980, at the Brighton Metropole Hotel" in United States. Congress. House of Representatives. Committee on Foreign Affairs (1980), *Preparations for the 32nd*

International Whaling Commission Meeting, Hearings, April 30 and May 20, 96th Cong., 2nd Sess., p. 112.

56. The need for harmonizing the political boundaries of the regime with the biogeographic boundaries of the Antarctic marine ecosystem for effective conservation was largely emphasized by Richard Laws, a scientific member of the UK delegation to the Canberra Conference. Its acceptance was based on the establishment of a series of geographic coordinates closely following the Convergence. Interview with Hofman.

57. The Argentine proposal was justified on grounds of the imperfect data on the biology, distribution, biomass, population dynamics and ecology of krill. Interview with Hofman. Barnes (1982), p. 252.

58. The Antarctic continental shelf was seen as the most likely area for exploration and development of petroleum and natural gas. See "Mineral Occurrences and Mineral Exploration in the Antarctic: Report by the SCAR Working Group on Geology (Appendix 4)" in Rutford [ed] (1986), *Reports of the SCAR Group of Specialists on Antarctic Environmental Implications of Possible Mineral Exploration and Exploitation (AEIMEE)*, p. 39.

59. Mitchell and Kimball (1979), "Conflict Over the Cold Continent" in *Foreign Policy* Vol. 35, p. 138.

60. Interview with Hofman; Barnes (1982), pp. 264-5.

61. Barnes (1982), p. 263. This was already evident in the insistence of France to control all aspects of the fishery in the EEZ of its sub-Antarctic islands.

62. According to a scholar in international marine fisheries:

> "[A]ll states have a general interest in protecting the living resources of the high seas, irrespective of the question of whether or not they fish for a specific stock; these resources may be caught by all nations. Consequently, conditions which limit membership to the states with direct interest in the fisheries involved are both unnecessary and undesirable, particularly since the efficiency of the decision-making process can be ensured by other means. Such restrictions on membership may also result in the organization becoming an instrument to further the interests of its members, rather than an instrument to regulate marine fisheries rationally". Koers (1973), p. 126.

63. The political authority of the ATCPs was further consolidated by retaining discretion over which "appropriate" international organizations (other than the FAO, SCAR and IWC) to invite to participate as observers in the work of CCAMLR; as well as through requirements in the CCAMLR regime, e.g., for non-Antarctic Treaty states seeking participation, to endorse and be bound by the principles of the Treaty, the Recommendations adopted under it including the Agreed Measures, and to recognize the "prime responsibility of the ATCPs for environmental policy-making.

64. Mitchell and Kimball (1979), pp. 133-4.

65. US NGO representatives monitoring the CCAMLR negotiations were critical of their government's failure to protect the interests of non-Treaty states and have attributed the US position on living resources to the fear of jeopardizing its interests in Antarctic minerals in which it

had a direct stake. Ibid., pp. 137; 140.

66. Interview with Hofman; Edwards and Heap (1981), p. 359.

67. "International Convention for the Regulation of Whaling (signed at Washington, Dec. 2, 1946)" in *United Nations Treaty Series* Vol. 161 (1953), Articles X (2); and III (2) pp. 74-99

68. See International Whaling Commission (1980), *Thirtieth Report*, pp. 16-27; and International Whaling Commission (1980), *Thirty First Report*, pp. 17-28. For a comprehensive review of the transformation of the composition and character of the IWC especially at its 31st (1979) and 32nd (1980) Annual Meetings, see Birnie (1985), "The Role of the Developing Countries in Nudging the International Whaling Commission from Regulating Whaling to Encouraging Nonconsumptive Uses of Whales" in *Ecology Law Quarterly* Vol. 12, pp. 953-68.

69. Interview with Hofman.

70. Barnes (1982), pp. 258-9; Kennedy (1980), p. 9.

71. Interview with Hofman. Barnes (1982), pp. 254; 262.

72. Interview with Hofman. Only New Zealand and Norway supported the US proposal. Barnes (1982), p. 283 n. 86.

73. Official versions of the rationale for the adoption of consensus as the decision-making procedure in the Commission provide that the negotiators were "greatly influenced by the 20 years fruitful experience of it that had already been acquired by the Antarctic Treat states." Edwards and Heap (1981), p. 358.

74. Ibid.

75. One scholar has written that political compromises and tradeoffs may be necessary to bring international fisheries regimes into existence, but they should be avoided to every extent possible if the objectives of such regimes are to be realized. Koers (1973), p. 19.

76. Barnes (1982), pp. 266-7. Some international fisheries regimes have internationally recruited scientific staffs which according to one expert, ensures that "scientific facts will not become the object of interest-oriented interpretations." Koers (1973), p. 217.

77. Barnes (1982), Ibid.

78. The draft texts produced at various negotiating sessions for the future regime were not published by the participating governments. Ibid., p. 249.

79. Ibid., p. 258. It is conceivable that the Soviets may have perceived that observers might provide scientific data that could contribute to the rationale for a rigorous regime.

80. Kennedy (1980), p. 9.

81. Barnes (1980), "Danger for the Antarctic" in *Living Wilderness* Vol. 44 (50), p. 16.

82. See comments of James Barnes in "Transcripts of a Public Meeting on US Participation in Negotiation of a Regime For Conservation of Antarctic Living Resources: December 20, 1977" in United States. Department of State (1978), *Final Environmental Impact Statement for a Possible Regime for Conservation of Antarctic Living Marine Resources*, Appendix B, p. B21; and "Comments on the Draft Environmental Impact Statement by Non-Governmental Organizations." Ibid., Appendix I, pp. I1-35.

83. Personal communication from Mitchell; see also Barnes (1982), pp. 264-5; *Australian Foreign Affairs Record (1980)*, "Antarctic Marine Living Resources Conference" Vol. 51, p. 145.

84. Reservations on ASOC's participation were privately expressed to the chair of the Conference, Australia by the UK, Chile and the USSR. Barnes (1982), pp. 258-9.

85. Personal communication from Mitchell.

86. The participation as observers of environmental NGOs in the CCAMLR Commission and Scientific Committee subsequently proved to be an issue of considerable controversy. See Chapter 7.

87. E.g., at the final Diplomatic Conference much of the substantive issues were dealt with in closed-door informal groups such as "Informal/Special Contact Group" and "Friends of the Chairman" which excluded observers. Kennedy (1980), p. 9; Barnes (1982), p. 259.

88. Barnes (1980), p. 17.

89. Kennedy (1980), pp. 8-9.

90. Barnes (1982), p. 260.

91. Ibid., p. 247.

92. Although Article III (2) of the Antarctic Treaty provided some scope for participation by non-state actors (i.e. Specialized Agencies of the UN and other international organizations with scientific or technical interests in Antarctica), this was not given effect within the framework of the ATCMs until the 1980s.

Chapter 7 Change and Continuity in an Antarctic Resource Regime: The CCAMLR Regime in Operation, 1982-1991

I. Introduction

The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) entered into force on April 7, 1982, less than two years after it was opened for signature. It represented a landmark in international marine resource conservation regimes due its integrated management objectives for conserving all species in the Antarctic marine ecosystem. The objectives of most fisheries regimes up to then had been generally oriented towards single-species conservation. Also unlike most other regimes, CCAMLR was brought into force relatively quickly, and in the initial phase of a developing fishery.[1] Moreover, considering the absence of a sealing industry under the Convention for the Conservation of Antarctic Seals, CCAMLR was the first major experiment under the Antarctic Treaty System to combine conservation with rational use of Antarctic resources. Also it was the first major application of the compromise on sovereignty among the ATCP states to resource exploitation under the ATS. CCAMLR also had important implications for the only other resource regime in the Antarctic, the International Convention for the Regulation of Whaling, because of the linkage between the recovery of baleen whales and the harvesting of krill. This chapter will analyze the effectiveness of the CCAMLR regime in its first decade of operation (1982-1991).[2]

In terms of policy direction, the CCAMLR regime had two distinct phases in this period. The first phase was the period 1982-1989. During this the Commission attempted to develop policies to facilitate the recovery of finfish stocks that had been depleted by commercial harvesting. This task was complicated by the non-availability of most fisheries data for this period, the unreliability of some of the data available, and critical gaps in knowledge of the Antarctic marine

TABLE 7.1 TOTAL CATCH (TONNES) OF FIN FISH IN THE SOUTHERN OCEAN, 1982-1990

COUNTRY	1982	1983	1984	1985	1986	1987	1988	1989	1990
AUSTRALIA	0	0	0	0	0	0	0	0	3
FRANCE	6158	2102	1071	760	1114	490	488	587	579
FRG	0	0	0	0	0	0	18	0	0
GDR	0	0	0	574	1298	807	1198	0	0
JAPAN	5	0	2	129	0	0	0	0	0
POLAND	8324	13	10079	5709	3926	2806	1660	12	523
SPAIN	0	0	0	0	0	100	0	0	0
UK	0	0	0	0	0	0	61	7	65
USSR	109913	195407	122175	65707	51891	93827	84938	103803	46558
USA	0	0	0	0	0	24	10	0	0
TOTAL	124400	197522	133327	72879	58229	98055	88373	104409	47727

TABLE 7.2 TOTAL CATCH (TONNES) OF KRILL IN THE SOUTHERN OCEAN, 1982-1990.

COUNTRY	1982	1983	1984	1985	1986	1987	1988	1989	1990
CHILE	0	3752	1649	2598	3264	4186	5938	5329	4501
GDR	0	0	0	50	0	0	0	0	396
JAPAN	35116	42282	49531	38274	61074	78360	73112	78928	62187
KOREA, R. OF	1429	1959	5314	0	0	1527	1525	1779	4040
POLAND	0	360	0	0	2065	1726	5215	6997	1275
SPAIN	0	0	0	0	0	379	0	0	0
USSR	491656	180290	74381	150538	379270	290401	284873	301498	302376
TOTAL	528201	228643	130875	191460	445673	376579	370663	394531	374775

Source: Commission for the Conservation of Antarctic Marine Living Resources, *CCAMLR Statistical Bulletin, Vol. 1 (1970-79), Doc. CCAMLR-SB/90/1; CCAMLR Statistical Bulletin, Vol. 2 (1980-89), Doc. CCAMLR-SB/90/2; CCAMLR Statistical Bulletin, Vol.3 (1981-90), Doc. CCAMLR-SB/90/3* (Hobart, Tasmania, Australia, 1990).

ecosystem.[3] The policy development process in the CCAMLR Commission and the Scientific Committee in this phase was also hampered by the attempts of the fishing states to continue their harvesting activities with minimum regulation, to control and use information to resist regulation, to exploit the structural weaknesses of the regime, and to prevent the participation of outside experts in the regime's work. Statistics reported subsequently indicated that substantial harvesting of new species of finfish occurred in the early 1980s and that the krill fishery reached a peak catch of over half a million tonnes in 1982 (see Tables 7.1 and 7.2).

In this regard, the domestic contexts of both Japan and the Soviet Union played a significant role in shaping their policies at the international level. Within Japan there was much pressure for expanding its Antarctic fishery from the fishing industry which by 1984 was the largest in the world. The loss of access to traditional fishing grounds within other nations' 200-mile economic zones which accounted for two-thirds of the total catch, generated pressures on the government for the exploitation of Antarctic krill.[4] The industry's influence was in part reflected in the composition of the Japanese delegation to the CCAMLR meetings. The Japan Deep Sea Trawlers Association, the industry lobby, was the only NGO to be represented on it and often had at least three representatives as advisors to the delegation. The Soviet Union too had domestic imperatives for its resistance to more rigorous regulation. The intensification of the Soviet economic crisis in the 1980s and the country's dwindling foreign currency reserves generated pressures on the government to boost its total fish catch for export purposes. Thus, most of fish and krill caught in Antarctic waters were intended to generate foreign exchange for the beleaguered Soviet economy;[5] thus there was a strong motive for resisting harvesting restrictions.

The second phase of the regime's policy direction (1990-1991) was marked by the attempts of a coalition of states and non-state actors to enhance the effectiveness of CCAMLR by pressing for an elaboration and

implementation of ecosystem principles.

II. Phase I: 1982-1989

Salient Factors Impairing Effectiveness of the Regime

The most important factors impairing the effectiveness of the CCAMLR regime in the first phase of its operation were:
(1) uncertainties concerning science and institutional roles; and
(2) the limited involvement of non-state actors.

Uncertainties of Science and Institutional Roles

Throughout the first eight years of the CCAMLR regime a major debate raged about the role of the Scientific Committee. The fishing states perceived the role of the Scientific Committee, particularly its research, information-gathering and advisory function, as essentially political.[6] The Committee was endowed neither with adequate powers, staff nor its own budget to ensure its independence from the political and policy-making institution of the CCAMLR regime, the Commission. Yet it was entrusted with the formidable task of acquiring and analyzing data and conducting research on the vast and complex Antarctic marine ecosystem. Its reliance on member-states to perform this function provided the impetus for fishing states to seek to control and use information with the objective of resisting regulation. The non-fishing states, on the other hand, perceived the Committee simply as a consultative body for reaching scientific conclusions to enable the Commission to adopt conservation measures. The failure of the Convention to mandate Commission members to submit all data necessary to the Committee also compromised the ability of the Scientific Committee to function efficiently.[7] The Commission was not empowered to make harvesting activities conditional on adequate and timely submission

of information, nor was it given a set of conservation standards for determining appropriate conservation policies.

Much of the leverage that the fishing states gained during the CCAMLR negotiations in terms decision-making in the Commission was reinforced when consensus procedures were adopted as the method of decision-making in the Committee.[8] This development largely reflected the position taken by the fishing states, led by the USSR, at the first Meeting of the Commission in 1982.[9] However, under pressure from the non-fishing states, it was agreed that in the absence of consensus on conclusive advice from the Commission, the Scientific Committee was obliged to provide "all the views" expressed on any particular issue.[10] The Commission was charged with the function of formulating and implementing conservation measures "on the basis of the best scientific evidence available," taking "full account of the recommendations and advice of the Scientific Committee" (Article IX [1]-[f] & [4]). However, the Committee's decision-making procedures did not provide for effective institutional coordination between it and the Commission. Due to the uncertainty involved in assessing fish stocks, especially in such a geographically vast region as the CCAMLR area, as well as the imperfect understanding of the ecosystem processes involved, consensus decision-making was not conducive to sound management advice. In particular, when there was uncertainty in the scientific data, states determined to continue or expand harvesting activities were likely to insist on the Committee providing management advice which was less decisive, or which conflicted with the majority opinion, even when circumstances required a precautionary approach that took account of sampling errors and the variability of fish stocks.[11] The Commission thus had considerable discretion to ignore scientific advice, and/or to adopt the least effective management options presented by the Scientific Committee. These structural weaknesses in the CCAMLR decision-making process were evidenced on several issues.

TABLE 7.3 CCAMLR CONSERVATION MEASURES, 1984-1991.

MEASURE	OBJECTIVE	STATUS
1/III (1984)	Closure of waters within 12 nautical miles of South Georgia	Superceded by UK proclamation
2/III (1984)	Mesh size regulation: *N. Rossii, D. Eleginoides* - 120 mm; *N. gibberifrons, N.kempi,N. squamifrons, C. gunnari* - 80 mm	In force:amended by measure 19/IX
3/IV (1985)	Prohibition: directed fishering for *N. rossii* around South Georgia	In force
4/V (1986)	Regulation: mesh size measurement	In force
5/V (1986)	Prohibition: directed fishing for *N. rossii* in Peninsula subarea	Superceded by measure 41/X
6/V (1986)	Prohibition: directed fishing for *N.rossii* in South Orkney subarea	Superceded by measure 42/X
7/V (1986)	Regulation: fishing around South Georgia	In force
8/VI (1987)	Total allowable catch: *C. gunnari* in South Georgia subarea	Expired, October 1, 1988
9/VI (1987)	Catch reporting system: *C.gunnari* in South Georgia subarea	Superceded by measure 36/X
10/VI (1987)	Prohibition : directed fishing for *C. gunnari* in South Georgia subarea, April 1-Oct. 1, 1988	Expired, Oct. 1, 1988
11/VII (1988)	Prohibition: directed fishing for *C. gunnari* in South Georgia subarea, Nov. 4, 1988-Nov. 20, 1989	Expired, Nov. 20, 1989
12/VII (1988)	Total allowable catch: *P. brevicauda guntheri* in South Georgia subarea 1988-89 season	Expired, Nov. 20, 1989
13/VIII (1989)	Total allowable catch: *C. gunnari* in South Georgia subarea, 1989-90 season	Expired 1990
14/VIII (1989)	Prohibition: directed fishing for *N. gibberifrons, C.aceratus, P. georianus, N.squamifrons* in South Georgia subarea, 1989-90 season	Expired 1990
15/VIII (1989)	Closed season: South Georgia subarea, 1989-90	Expired 1990
16/VIII (1989)	Total allowable catch: *P. brevicauda guntheri* in South Georgia subarea, 1989-90 season	Expired 1990
17/VIII (1989)	Catch reporting system: South Georgia subarea , 1989-90 season	Expired 1990

(Turn over)

18/IX (1990)	Procedure for protecting CCAMLR Ecosystem Monitoring Program (CEMP) sites	In force
19/IX (1990)	Mesh size regulation: *C. gunnari*	In force
20/IX (1990)	Total allowable catch: *C. gunnari* in South Georgia subarea, 1990-91 season	Expired 1991
21/IX (1990)	Closed season: South Georgia subarea, 1990-91	Expired 1991
22/IX (1990)	Prohibition: directed fishing for *N. gibberifrons,C. aceratus, P. georgianus, N. squamifrons* in South Georgia subarea, 1990-90 season	Expired 1991
23/IX (1990)	Prohibition: directed fishing for *P. brevicauda guntheri* in South Georgia subarea, 1990-91 season	Expired 1991
24/IX (1990)	Total allowable catch: *D. eleginoides* in South Georgia subarea, 1990-91 season	Expired 1991
25/IX (1990)	Catch/Effort reporting system: 1990-91 season	Expired 1991
26/XI (1990)	Effort/Biological data reporting system: *D. eleginoides* in South Georgia subarea, 1990-91 season	Expired 1991
27/XI (1990)	Prohibition: Directed fishing in Peninsula and South Orkney subareas, 1990-91 season	Expired 1991
28/XI (1990)	Total allowable catch: *N. squamifrons* in South Georgia subarea, 1990-91 season	Expired 1991
29/X (1991)	Minimization of incidental mortality of seabirds from longline fishing/fishing research	In force
30/X (1991)	Prohibition: net monitor cables on harvesting vessels	Effective 1994-95 season
31/X (1991)	Notification that members are considering initiating a new fishery	In force
32/X (1991)	Precautionary catch limitations: *Euphausia superba* in Atlantic Antarctic area	In force
33/X (1991)	Prohibition: directed fishery on *C. gunnarii*in South Georgia subarea,1991-92 season	In force
34/X (1991)	Prohibition: directed fishery on *N. gibberifrons,C. aceratus, P. georgianus, N. squamifrons, P. guntheri* in S. Georgia subarea, 1991-92	In force
35/X (1991)	Catch limit: *D. eleginoides* in South Georgia subarea, 1991-92 season	In force
36/X (1991)	Catch/effort reporting system: South Georgia subarea, 1991-92 season	In force
37/X (1991)	Effort/biological data reporting system: *D. eleginoides* in South Georgia subarea, 1991-92 season	In force
38/X (1991)	Total allowable catch: *E. carlbergi* in South Georgia subarea, 1991-92 season	In force
39/X (1991)	Biological data reporting system: *E. carlsbergi* in South Georgia subarea, 1991-92 season	In force
40/X (1991)	Monthly catch/effort reporting system	In force
41/X (1991)	Prohibition: directed fishing for finfish in South Georgia subarea, 1991-92 season	In force
42/X (1991)	Prohibition: directed fishing for finfish in South Orkney subarea, 1991-92 season	In force
43/X (1991)	Prohibition: directed fishing for *N. squamifrons*in Ob and Lena Banks, 1991-92 season	In force

Throughout this period attempts by the regime to restore depleted finfish stocks were hampered by the failure to achieve consensus in the Commission. The fishing states exercised their veto regularly, citing numerous reasons, particularly the inadequacy of available data. They used their near monopoly on information pertaining to fishing statistics, as well as biological and other data, to weaken the policy-making process. Fishing states were at a considerable advantage in terms of their ability to withhold, in full or in part, or delay the submission of historical fisheries data which were essential to the restoration of depleted stocks. In spite of repeated requests by the Committee and the Commission for states to report such data in the agreed format, the USSR and Japan only partially complied with their obligations.[12] The fishing states also sought to dissuade the Scientific Committee from funding research projects designed to acquire a more complete data base. They protested the hiring of consultants whose expertise was perceived as important to advancing the Committee's research efforts.[13] The reticence of the fishing states in the supply of data was also apparent in their reluctance to report current data, as specifically mandated by conservation measures.[14]

During this period, the fishing states' attitude toward regulation was largely reflected in the conservation measures adopted by the CCAMLR regime. These measures for the most part followed the lowest-common-denominator decisions. This was amply demonstrated in the first two conservation measures adopted by the Commission,[15] both of which applied restrictions, though minimal ones, on the activities of the USSR. More extensive controls proposed by Australia and New Zealand in the Committee failed to gain the necessary consensus as a result of the opposition of the USSR, East Germany and Poland.[16]

The first eight years of the regime thus provided few effective and timely conservation policies. Significantly, only seventeen, or 40 percent of the 43 conservation measures adopted in the first decade of the CCAMLR regime, were promulgated in the first eight years (see Table 7.3). The

objections raised to proposed conservation measures provide testimony to the influence that the fishing states exerted over the CCAMLAR policy process in this period. The Commission was unable to reach consensus on a variety of proposals designed to restore depleted populations. Fishing states sought a reactive management policy based on a species-by-species approach to conservation, similar to those adopted by other fisheries regimes. This approach was best epitomized by the USSR's stand on a 1989 proposal to prohibit finfishing in the Atlantic Ocean sector, especially in the South Georgia subregion of the CCAMLR area. Despite the advice of the Scientific Committee, and the agreement of the overwhelming majority on the Commission that, based on "all available evidence" restoration of significantly depleted stocks would "best" be achieved by a complete closure of the region to finfishing,

> [t]he Soviet Union expressed the opinion that an approach which examined individual stocks is adequate to ensure the conservation of fish resources.[17]

The attitudes of the fishing states elicited an unprecedented public response from the Convenor of the Scientific Committee's Working Group on Fish Stock Assessment. Dr. K.H. Kock protested what he claimed were attempts by Commission members to discredit and ignore the advice of the Committee "by simply stating that there was not enough scientific evidence for a particular advice without, however, qualifying other scientific information nor indicating what level of certainty is necessary for a particular advice to support this opinion." His conclusion that the development "puts not only unnecessary constraints on [the Scientific Committee's] work but has considerable implication for the credibility of the whole CCAMLR system,"[18] drew attention to the politicization of scientific decision-making as well as the questionable effectiveness of the regime. The Commission, in acknowledging the paralysis in its work,

observed that it "formed a fundamental obstruction to its management responsibilities, [and] seemed likely to persist either until all available historical and current data were provided or it was accepted that, in the absence of data which can only be provided by fishing nations, precautionary measures become essential."[19] This latter suggestion indicated that the non-fishing states had begun to assert themselves as a cohesive coalition, at least in terms of identifying a policy direction for the regime.[20]

Limited Involvement of Non-State Expertise

In the first eight years of its operation the policy process of the CCAMLR regime had little input from experts from non-state actors. This flowed from the attitude of the fishing states during the CCAMLR negotiations to limit the participation of international intergovernmental and non-governmental bodies in CCAMLR policy formulation.

One of the contentious issues in the drafting of the Commission's Rules of Procedure was the scope of participation of observers.[21] Commission members retained wide discretion in defining the scope of this participation (Article XXIII) and in the granting of observer status at meetings.[22] In the latter area Commission members retained the right to exercise an effective veto on observer participation in sessions pertaining to any specific agenda item at a meeting; any address by an observer at a Commission meeting; and the circulation of documents submitted by observers.[23] The fishing states harboured suspicion about the motives of intergovernmental and non-governmental bodies. The IUCN, as seen in Chapter 6, had made submissions to the Canberra Conference on the need for a more rigorous application of the ecosystem principles in CCAMLR. Others, such as the FAO, had initially shown interest in developing Antarctic krill for the benefit of developing countries. The involvement of outside experts, as in the IWC experience, also entailed

scrutiny of harvesting practices that could potentially stimulate international pressure for curbs on the fishery.

Intergovernmental Organizations

The CCAMLR policy process lacked any systematic input of expertise from intergovernmental organizations in the period under review. Although observers from the FAO, the IOC and the IWC were represented at Commission and Scientific Committee meetings, the level of input into discussions, in terms of advice offered on request or voluntarily, was limited.[24] Many IGOs were represented not by independent observers, but by those nominated from state delegations attending meetings. By the late 1980s some IGOs, including the FAO, had ceased even nominating such representatives. The poor record of IGO observer involvement can be attributed to financial constraints facing IGOs and lower expectations about influencing the work of CCAMLR. The latter factor seems to have been influential, especially in the context of the restrictive rules for observer participation established from the outset of the CCAMLR regime. Although initially the FAO played a useful role in helping the regime publish identification sheets for Southern Ocean species to enable accurate reporting of data and enhance the quality of research,[25] it did not directly involve itself in CCAMLR in subsequent years.

The regime did not seek to explore potential sources of non-state expertise and information. UNEP, for example, was not perceived as having the competence to contribute to the work of CCAMLR, even though it has considerable expertise in marine mammal conservation. A joint proposal submitted by UNEP and FAO in 1984 and 1989 for CCAMLR participation (in the "Draft Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals") although gained support in principle, was seen as overlapping with ATS efforts and as having political undertones in terms of jurisdiction. It did not elicit any commitments in terms of

funding or participation.[26] CCAMLR's reluctance in this regard can be largely attributed to the general interest of the ATCPs to retain their preeminence in CCAMLR policy formulation.

The CCAMLR regime's relationship with these organizations and with the IWC did not live up to the ideal embodied in the CCAMLR Convention - to establish new forms of policy-making based on consideration of the ecological relationships of species. In the case of the ecological relationships between whales and krill, CCAMLR established few direct collaborations with the IWC, either at the policy or scientific level. In fact, CCAMLR members working within the IWC prevented the latter regime from adopting policies that would have requested CCAMLR to give priority to the link between krill harvesting and the recovery of whales.[27] Thus, in practice, political and jurisdictional factors outweighed professed concerns for ecological principles.

Moreover, the budgetary constraints of CCAMLR, and especially of its Scientific Committee, prevented potentially useful outside input into the policy process. With the exception of the IOC, other IGOs failed to elicit support for proposed projects.[28]

International Non-governmental Scientific Organizations

SCAR and SCOR, bodies with expertise in carrying out basic research on the Antarctic marine ecosystem, were also restricted in their involvement with the CCAMLR regime during the period under review. As with IGOs, they were mostly represented by members of state delegations attending CCAMLR meetings. SCAR in particular had accumulated from the BIOMASS program a large volume of potentially useful information for CCAMLR, especially in estimating the size of krill stocks. But SCAR proposals for financial support from CCAMLR for BIOMASS workshops to analyze such data faced opposition in the Scientific Committee.[29] As previously discussed, the funding of projects proposed by outside agencies

was an area of much controversy in the formative years of CCAMLR, when there was little data available and the regime was largely dependent on the data provided by fishing nations.

The expertise of other bodies such as the International Council for the Exploration of the Sea (ICES) was not canvassed till the late 1980s. This was despite its advisory role in other international fisheries regimes, a role that ICES plays as a supplement to the in-house scientific bodies of such regimes as the North Atlantic Fisheries Organization and the EC. Although the Scientific Committee was regularly represented at ICES meetings, no attempts were made to explore the potential utility of that body especially as a source for environmental monitoring data and stock assessment techniques until 1989.[30]

International Non-Governmental Environmental Organizations

The role of international NGOs in the functioning of the CCAMLR regime in the period 1982-89 was also largely circumscribed. The rules of procedure for observer participation at CCAMLR meetings were not conducive to an influential role for environmental NGOs. The *de facto* vetoes that CCAMLR members had over observer participation were designed largely to control environmental groups if ever they were granted observer status. There was no direct input into the CCAMLR regime from such groups for the first six years of its operation.[31] The exception was a token presence of observers from IUCN.[32] However, some of the conservation-minded states (Australia, New Zealand and the US) sought input from their national environmental NGOs by including them as public interest advisors.

Direct representation of NGOs on the Commission was prevented by the consensus procedure. Applications by ASOC were consistently turned down until 1988 due to the objections of a few states, primarily the fishing states.[33] Greenpeace International was similarly turned down, ostensibly on the grounds that it was a member of the ASOC coalition which had

already submitted an application, and that the Commission preferred to establish relations with NGOs through "a representative umbrella organization."[34] The opposition to conservationists' involvement was largely motivated by the perception that their presence would enhance their ability to mobilize international opinion to promote ecosystem principles that would entail the imposition of harvesting restrictions. ASOC was eventually granted observer status in the Commission in 1988 after considerable diplomatic lobbying by Australia.[35] Nevertheless, its participation was restricted by conditions which excluded it from working sessions. In addition, ASOC was required to submit a written undertaking committing it to observe the confidentiality of informal sessions.[36] The confidentiality of diplomatic negotiations apart, the delay in granting observer status to conservation NGOs was indicative of the resistance of some CCAMLR states to subject the regime to outside scrutiny. Nevertheless, it marked the first instance of non-governmental conservation interests having direct access to any Antarctic Treaty policy process.[37]

Despite these constraints, environmentalists were able to exert some pressure on the regime through various domestic and international mechanisms in the 1982-89 period.

One such mechanism was the advocacy of the application to CCAMLR of counter-measures available under US domestic law to enhance the effectiveness of international fisheries or endangered species conservation regimes. US environmentalists realized that the imposition of a trade embargo on fish products (available under US laws) from offending CCAMLR fishing states, in combination with US diplomatic clout, could deter vetoes by such states in the CCAMLR policy-making process.[38]
This use by NGOs of domestic policy milieus in some of the non-fishing states was seen as part of a larger strategy to mobilize international public opinion to promote the goals of CCAMLR. Considerable dividends accrued from this strategy in Australia. Media coverage of annual meetings

held at the CCAMLR headquarters in Hobart facilitated increasing awareness of the deviation of the regime from its policy goals. Criticisms led a growing number of Australian environmental officials, scientists and legislators, to call into question CCAMLR's credibility.[39] This emerging constituency provided an impetus for the formation of a *de facto* coalition between the Australian government, scientists and environmental NGOs to press for changes in the policy direction of CCAMLR.

Domestic milieus were also key to raising the political profile of CCAMLR issues at the European Parliament. This extensively debated Antarctic environmental issues, and adopted a resolution in 1987. The growing influence of Green Parties in EC countries, and their representation within the European Parliament, reinforced this pressure.[40] Although not binding on the EC member-states of CCAMLR, the resolution raised awareness in some of the politically most important non-fishing states (West Germany, France,and the UK) as well as in the European Commission.[41]

International fora such as the UN General Assembly were also used by NGOs to "internationalize" the CCAMLR issue. But this was secondary to the wider strategy of mobilizing opinion for maintaining Antarctica's wilderness character by prohibiting mining, and to highlighting the problems of enforcement in the ATS in regard to environmental regulations. Suggested measures for enhancing the effectiveness of CCAMLR included a moratorium on all finfishing, adoption of a management strategy involving an experimental fishery for scientific research, a quota on krill fishing, and an observation and inspection system.[42]

Thus although the involvement of environmental NGOs was largely constrained by the rules of CCAMLR, these bodies were able to mobilize international public opinion to exert some pressure on the regime externally. Although initially these pressures had only marginal impact on the fishing states, they nevertheless gathered considerable momentum in the domestic policy milieus of some of the non-fishing states in the late

1980s. This led to a decisive reorientation in the policy direction in the 1990s.

III. Phase II: 1990-1991: Enhanced Effectiveness of CCAMLR

Beginning in 1990 the CCAMLR regime underwent a fundamental shift in policy direction. The regime adopted a record number of conservation measures at the XIth and Xth Commission Meetings. For the first time a conservation strategy and measures to control the krill fishery were substantively debated.[43] The most important factors that enhanced the effectiveness of the CCAMLR regime in the 1990-1991 period were (1) the leadership role of Australia; (2) involvement of NGOs; (3) implementation of enforcement mechanisms; (4) improvements in the procedures and sources for acquisition data and expertise; (5) the weakening of the bargaining strength of fishing states; (6) wider developments within the ATS; (7) unfavourable economic conditions for krill.

Leadership Role of Australia

The crucial factor in the operation of the CCAMLR regime was the leadership role played by Australia in the broad coalition of non-fishing states. It initiated work within the Commission[44] that led to the clarification and elaboration of CCAMLR's ecosystem principles and objectives and the development of a conservation strategy; and clarified the relationship between regime institutions and the rules on the submission of scientific data, evidence and decision-making.[45] Australian initiatives sought to address the issue of uncertainty in scientific evidence which had caused much of the paralysis in the decision-making process. These efforts offset some of the leverage the fishing states had gained in the eight years of CCAMLR.

Australian leadership was largely shaped by the access that national

environmental groups had to the government's policy process. Systematic lobbying activity since the early 1980s on CCAMLR policy, and representation on national delegations for CCAMLR meetings, had allowed for considerable convergence of perspectives on the regime's problems and possible remedies. In addition, the appointment of a leading marine biologist with experience in the development of management strategies in the IWC, Dr. William de la Mare, as special advisor to the Australian delegation, provided Australia with the scientific capabilities to play the role of leading advocate of precautionary management in CCAMLR.[46] Australia also influenced the regime's policy process in terms of diversifying the sources of expertise and information available to the Scientific Committee by designating non-governmental scientists to serve on its working groups.[47] Australian scientists were able to form a *de facto* alliance of non-fishing state scientists to counteract those from the USSR, Japan and Poland in debates over catch levels in the Committee.[48]

Australian leadership was also able to give cohesion to the bloc of non-fishing states. Prior to 1990 Australia was one of the few states openly critical of the policy direction of CCAMLR. However, in the face of continuing finfish stock depletion and the scarcity of reliable data, Australia was able to persuade several non-fishing states, including the UK, the US and South Africa, to back a more rigorous approach to precautionary management. This entailed setting very low quotas, or, in cases where there was a high degree of uncertainty in scientific evidence, a closure of the fishery.[49] Two areas in which intensive finfishing had taken place (in the Antarctic Peninsular and South Orkney Subareas) were completely closed in light of lack of relevant data.[50] More significantly, as a result of this cohesion within the ranks of the non-fishing states, the Commission was able in 1991 to adopt for the first time a precautionary catch limit on krill harvesting.[51]

Australia's leadership role within CCAMLR emerged as a result of its

disillusionment with the workings of the regime. Although there were few public criticisms from officials, some Australian scientists were not so circumspect in expressing frustration at the lack of policy direction by the Commission on the krill fishery, the resource that had been touted as a "vast untapped source of protein."[52] Australia's early role as mediator between fishing states and conservation-minded states underwent considerable change in the mid-1980s in response to increasing domestic criticism of the operation of the regime and substantive input from conservation groups. It led to the formation of a *de facto* coalition with non-governmental conservation groups and scientists with a view to restoring the balance of interests in the regime, which had largely been skewed in favour of fishing interests due to the inherent structural weaknesses of CCAMLR.

Involvement of Non-Governmental Organizations

Change in the policy orientation of the CCAMLR regime has also been influenced by the direct involvement of conservationist NGOs since 1990. The rules of attendance and participation for observers at Commission and Scientific Committee meetings were relaxed, giving such groups a higher profile and greater access to information and the capacity to lobby state delegations.[53]

The involvement of NGOs was further expanded through their ability to present and circulate reports and information. Reports of activities undertaken by Greenpeace in the CCAMLR Convention area of observations of fishing practices and technologies of vessels were for the first time tabled as official documents at meetings.[54] In view of the delays experienced in establishing a system of observation and inspection by the Commission, these reports provided not only scrutiny of fishing states' operations but also influenced the Commission to adopt measures designed to minimize incidental mortality of seabirds from longline fisheries.[55]

NGOs have also been able to focus attention on fishing states' compliance with data-reporting requirements. Greenpeace, for example, provided information unofficially to the 1991 CCAMLR meetings about national procedures and practices of data collection by the USSR.[56] This had some effect on delegates who expressed concern about the quality and reliability of some of the data provided by states to the CCAMLR regime.[57] Although such reports lacked third party verification, they can be given some credence in light of subsequent developments; the breakup of the USSR and the declassification of Soviet Ministry of Fisheries records have revealed discrepancies between the actual catches of Soviet commercial whaling operations in the Antarctic and the data reported to the IWC.[58] Although problems of enforcement are inherent in international regimes based on sovereign states, conservation groups in the CCAMLR regime have proven that they could cause embarrassment to the states whose conduct was largely responsible for the ineffectiveness of the regime in the formative years.

Environmental organizations strengthened their capabilities for playing an influential role in the CCAMLR regime throughout the 1980s. Especially when granted formal participatory roles as observers they have proved adept at providing data and reports pertaining to state compliance with conservation rules. Some of the tactics adopted by NGOs to generate publicity on what was widely regarded as the inaction of CCAMLR in the first phase proved somewhat controversial, but active participation in the regime has shown them in a more professional light. Nevertheless, there was resistance among fishing states to permitting an expanded role for NGOs. This was evident in the exercise of vetoes on the attendance of the ASOC observer at specific working sessions of the Commission, and on the granting of observer status to Greenpeace in the Commission by the USSR.[59] Some of the objections to the involvement of conservation groups were based on states' own experiences with such groups. Soviet objections to Greenpeace's application for observer status in CCAMLR, for example, were

in part based on that group's protest activities involving Soviet fishing practices in the CCAMLR area and nuclear weapons testing activities in the Barents Sea.[60] However, there was a greater acceptance among other CCAMLR states of the value of involving environmental groups in the work of CCAMLR.

Implementation of Enforcement Mechanisms

The establishment of an enforcement mechanism was also a crucial factor in changing the policy direction of the CCAMLR regime. It took seven years for a consensus to emerge on the form of a system of observation and inspection to ensure and verify compliance with conservation measures. The issue was not considered a priority in spite of the problems of expanding finfishing and unreliable or missing data. From the beginning the concept of inspection was perceived as being too intrusive by the fishing states.[61] Additional obstacles arose from the desire of some claimant states to protect the enforcement rights that had been recognized ambiguously in CCAMLR; there was fear that a centralized, international system might dilute the validity of claims. An alternative proposal for bilateral arrangements between states, involving the placement of scientific observers on board vessels, also made no headway.[62] The US initiated negotiations for a system of observation and inspection in 1987, but its scope was destined to be restricted, both in terms of the system's area of application and its authority. The area of application was restricted by the insistence of France on exemption of the waters adjacent to its sub-Antarctic islands; and the system's authority was limited by flag-state implementation.[63]

The enforcement mechanism adopted in 1988 and implemented after 1989 took the form of a mutual or bilateral inspection system implemented under flag-state jurisdiction. The Commission was to have a degree of control over the setting of standards and procedures for national observers and

inspectors.[64] The fishing states, especially Japan, sought to circumscribe the scope of inspections.[65] They also refused to share the financial burden of inspections; costs were to be borne by inspecting states, at least in the initial stages of implementing the inspection system.[66] The high cost of operating vessels in the Southern Ocean, and the fact that few states have the logistical capacity to independently carry out inspections, put the onus on non-fishing states to implement the scheme. Significantly, in the first three years of its implementation, only one inspection was carried out.[67] NGOs however, partly filled this gap; they provided CCAMLR with basic data on fishing activities and practices that the regime itself had requested, but had not received, from fishing states.[68] The USSR however, established its own national system of inspection, which implicitly challenged the necessity for the CCAMLR bilateral system; it did not carry out any inspections of vessels from other CCAMLR members, possibly to avoid reciprocal inspections.[69]

With the increased attention paid to the need for more reliable and accurate data, especially highly-detailed fine-scale data, the CCAMLR regime proposed in 1990 that a system of scientific observation should be established as matter of priority.[70] Discussions initiated in 1990-91 had as their objective the "gathering and validation of scientific data." For the first time there was a recognition that an international system would lend credibility to data. However, this was to be achieved on a more cooperative basis by separating the role of inspector and observer,[71] largely on Japan's insistence that observers be devoid of enforcement functions.[72] The proposed system called for member-states to nominate observers who would be designated and authorized as CCAMLR observers by the Commission. They would be assigned to vessels through a bilateral agreement between states nominating them and a fishing state. At the end of 1991 the system was near adoption with a few questions about the nationality of observers to be sorted out.[73]

The CCAMLR inspection system was largely shaped in the first phase

of the regime's operation, when fishing interests were dominant and a centralized international verification system was not favoured by some of the claimant states. Moreover, the high financial burdens of policing the vast and remote CCAMLR area constrained state capacities in the implementation of inspection system. Nevertheless, it established a measure of control over fishing activities that had been absent in the first eight years of CCAMLR, and contributed to the changes in the policy direction. Even so, the reluctance of fishing states to allow scientific observers freedom of movement on board vessels provided an element of continuity with the earlier period.

Improvements in the Procedures and Sources for Acquisition of Data and Expertise

Changes in the policy direction of the regime were also influenced by improvements in the procedures and sources for acquisition of data and expertise. The regime's effectiveness was premised on the free and open flow of data between the Commission and the Scientific Committee, as well as into the Scientific Committee from member-states and other expert organizations. However, many states did not have the capabilities to undertake research on the Antarctic marine ecosystem-as-a-whole when the CCAMLR regime came into operation.[74] Many were unwilling to make commitments to the BIOMASS program, the only collective effort that had the potential to meet the necessary data requirements of CCAMLR.[75]

However by 1990 several of the non-fishing states had built up their scientific research and logistical capabilities as a means to play a more assertive role in negotiations.[76] Knowledge about the health of the ecosystem was increasingly perceived as a means of restoring the balance of interests in the regime. This had formerly favoured fishing states through their ability to interpret the "rational use" concept in the ecosystem principles to deny the need for conservation measures. A system

of protected sites for monitoring the ecosystem was established under the regime to obtain data on the status of predator (whales, seals, penguins, etc) and prey (krill) species as well as on the environment, and particularly to monitor the impact of the krill fishery on the its predators. In view of the reluctance of some states to supply data, procedural rules obligating states to submit data from predator monitoring were established.[77]

Further improvements were achieved in 1991. For the first time consensus was achieved in setting out obligations requiring fishing states to report catch and effort data, and effort and biological data. In order to enforce compliance, sanctions were built into the procedures, including the option of closing the fishery.[78] A biological data reporting system for a specific fishery and a monthly catch and effort reporting system were also adopted.[79] These rules marked the first step in the CCAMLR regime's capacity to exert authority in the area of fisheries data acquisition.

The regime was also able to obtain new sources of scientific data and expertise. Fishing states' objections to external sources of data were gradually muted as a result of the widespread criticisms of their own failure to submit data.[80] The most significant of these sources was the acquisition of the entire data base of the BIOMASS program, which contained a large volume of primary data on the Antarctic marine ecosystem.[81] At the same time the Scientific Committee was able to obtain expert advice and guidance from outside organizations as a result of the relaxation on the rules of participation of observers, such as those of SCAR and ASOC. Even UN resolutions advising action by CCAMLR on issues such as the use of driftnets and gillnets within the Convention area were accepted and acted upon.[82]

Weakening of the Bargaining Strength of Fishing States

The effectiveness of the CCAMLR regime was also affected by the weakening of the bargaining strength of the fishing states. This can be attributed largely to several developments affecting Eastern European member-states in the post-1989 period.

The most significant of these developments was the changes in governments of these states and the end of the Soviet Union. Changes in the foreign policy orientations of the new governments also influenced their behaviour in CCAMLR. Three of the four leading Antarctic fishing states - the USSR, Poland, and East Germany - had been members of the Warsaw Pact. Their close collaboration in many foreign policy issue-areas had also been evident in CCAMLR in terms of their opposition to conservation measures.

However, following the collapse of its Communist government and the reunification of the two German states, East Germany was no longer a member of the CCAMLR regime. This reduced the number of fishing states and weakened the cohesion and bargaining strength of this bloc. East Germany had previously played a crucial role in CCAMLR, often leading fishing states' opposition to conservation measures.[83] Moreover, after 1990 the new Polish government adopted a more pro-conservationist stance in CCAMLR and substantially scaled down its fishing activities. It too had previously been influential in diluting the stringency of regulatory measures for finfish stocks.[84] With the loss of its two former allies, the USSR was thus largely isolated within the bloc of fishing states and was forced to bargain alone. This may in part account for its more conciliatory attitude towards the adoption of conservation in 1990-91 CCAMLR meetings.[85] It is significant that a record number (ten) of conservation measures were adopted at the 1990 CCAMLR Commission meeting (See Table 7.3).

The most significant domestic development to influence the behaviour

of a fishing state in CCAMLR was the dissolution of the Soviet Union. This was taking place at the time of the Tenth CCAMLR meeting in October and November of 1991. Uncertainty over the future of the USSR resulted in a general weakening of its bargaining strength in CCAMLR. Changes in Soviet bargaining behaviour (such as its non-exercise of vetoes) during that meeting allowed the adoption of more conservation measures (fifteen), including a precautionary catch limit on krill harvesting. Moreover, within CCAMLR itself, it came under considerable criticism for its poor record of compliance with data-reporting obligations and other conservation measures.[86] Japan, the second largest krill harvesting nation, was also impacted by the general weakening of the fishing bloc. Its behaviour was more accommodating in 1991, as evident in its non-objection to the precautionary catch limit on krill (Table 7.3).

Wider Developments Within the Antarctic Treaty System

Wider developments within the ATS in the post-1989 period also influenced the behaviour of states in the CCAMLR regime. The breakdown of the consensus among the ATCPs on the acceptability of mining in Antarctica, and the Australia-France proposal for a more comprehensive approach to conservation, exerted indirect pressure on the CCAMLR regime. Although the 1990-91 negotiations for a comprehensive regime did not explicitly affect marine living resource activities, they nevertheless focussed attention on the effectiveness of the CCAMLR regime. The failure of the regime to implement the ecosystem principles stemming from the inadequacy of data prompted some members to question its achievements.[87] There was also concern that almost a decade after its entry into force the regime had not adopted a management strategy and had paid little attention to the conservation of krill.[88] As all CCAMLR members were also ATCPs, they were aware of the pressures to strengthen the overall the ATS environmental mechanisms.

At the 1991 Commission meeting, the implications of the new policy direction of the ATS regime for CCAMLR - engendered by the adoption of the Protocol on Environmental Protection - was discussed. The importance of CCAMLR's input into the work of the Committee on Environmental Protection, especially the need to consider CCAMLR as the "best source of scientific information" in the matters affecting the marine living resources of Antarctica, was emphasized.[89] This was a further reflection of a greater willingness to adopt a coordinated ecosystemic approach to management.

Unfavourable Economic Conditions for Krill Products

The slow growth in commercial demand for krill products has also indirectly contributed to the increased effectiveness of the CCAMLR regime. Widespread perceptions of Antarctic krill as the solution to the world's food problems and as an abundant and profitable marine resource in the 1970s failed to materialize in light of new knowledge about its acceptability for human consumption in the 1980s. It has been found, for example, that because of the high levels of enzymes in them krill needs to be processed on board fishing boats within three hours of being caught to be suitable as human food or within ten hours if they are to be used as animal feed. Also krill require careful handling and expensive storage facilities to prevent being crushed on deck. Moreover, its value as human food is also highly dependent on the quick removal of its shells to prevent the high fluoride content in krill from seeping into the flesh in toxic concentrations. These problems have prevented rapid development of markets for krill or krill-based products.[90] Even in the USSR, the largest krill fishing nation, by 1990 only 50 to 60 percent of its catch was being processed for human consumption while the rest went into krill meal for animal feed and for aquaculture. Similarly in Japan, the largest seafood-consuming nation in the world, only half of its Antarctic krill catch was destined for direct human consumption.[91] Thus, unfavourable economic

conditions for krill has slowed the expansion of the fishery and allowed the non-fishing states to argue for a precautionary approach to management before the build up of excess capacity in the industry.

IV. Conclusion

This chapter has looked at the operation of the CCAMLR regime in its first decade. The period roughly falls into two phases in terms of its policy direction. In the first phase, the regime evolved under the constraints of its structural weaknesses. These allowed fishing states to dominate policy. Only a reactive management policy by the use of the consensus decision-making rule effectively constrained the regime's machinery. The fishing states were also able to use the unique problems that the regime faced in its formative period to expand their own interests, to the detriment of the objectives of CCAMLR, and to prevent transparency and accountability in the policy process.

The changes that resulted in the policy direction in CCAMLR in 1990-91 greatly enhanced its effectiveness. Among the factors that most significantly affected the CCAMLR regime was the leadership of Australia in the coalition of non-fishing states that brought about the adoption of a conservation strategy to give effect to the CCAMLR regime's ecosystem objectives. The role of domestic and transnational groups in influencing the policy processes of both Australia and the CCAMLR regime was a significant factor. Australia's leadership role in giving direction to the regime was also conditioned by the input of Australian NGOs into their country's policy process. At the same time the *de facto* coalition that emerged between a state actor (Australia) and several non-state actors (ASOC, Greenpeace, etc.) in the pursuit of shared policy objectives reveal new forms of inter-actor behaviour within international regimes. Other factors that changed the policy direction of the regime - the implementation of enforcement mechanisms and the improvements in the

procedures and sources for acquisition of data and expertise - were largely a consequence of the assertive role played by the coalition of non-fishing states to which Australia gave leadership. Finally, domestic developments in some of the fishing states which contributed to the weakening of the bargaining strength of the coalition of fishing states, as well as to the ascendency of environmental over resource priorities, influenced the policy direction of the regime.

Notes for Chapter 7

1. However, there was some debate as to the timeliness of CCAMLR because the reported data for the interim period between the signing and the entry into force of the convention indicate that total catches of krill reached record levels. The USSR's krill catches in 1980-82 was the highest recorded commercial catch for a single species in the Southern Ocean prior to 1990. See Tables 6.2, 6.3, 7.1 and 7.2. See also Nicol (1991), "CCAMLR and its Approaches to Management of the Krill Fishery" in *Polar Record* Vol. 27, pp. 229-36.

2. The author wishes to acknowledge the help offered by the following individuals in the analysis of the operation of the regime: interview with Dr. Robert Hofman, Scientific Program Director, US Marine Mammal Commission and Scientific Advisor to the US delegation to CCAMLR, 1982-89; interview with Beth Marks, Director, Antarctica Project and NGO Advisor to US delegation to CCAMLR, 1990-91; NGO reports on CCAMLR were supplied by Kaye Dyson, Antarctic Southern Ocean Coalition/Greenpeace-Australia CCAMLR campaigner.

3. A study undertaken by SCAR found that the misplaced boundaries of the fish catch reporting areas early in the Southern Ocean fishery and the uniqueness of the region's species had led to misidentification of species caught and inaccuracies in the available data. Kock et al. (1985), "Biology and Status of Exploited Antarctic Fish Stocks: A Review" in *BIOMASS Scientific Series* Vol. 6, pp. 28-9.

4. *Nature* (1984), "More Antarctic Chill for Japan" Vol. 308, March 1, p. 7.

5. Interview with Marks.

6. Interview with Hofman.

7. States were required to submit data to the CCAMLR regime only "to the greatest extent possible" (Article XX [1]); a qualification that enhanced the ability to withhold or delay data.

8. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1983b), *Rules of Procedure*, Rule 3.

9. Interview with Hofman. Consensus on the rules of procedure of the Scientific Committee itself was not reached until 1983 through informal negotiations. See "Annex D: Chairman's Report" and "Annex E: Report of the Executive Secretary" in Commission for the Conservation of Antarctic Marine Living Resources (1983), *Report of the Second Meeting of the Commission*, pp. 37; 43.

10. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1983b), Rule 17.

11. This approach was not raised as an issue until the late 1980s. In the CCAMLR context a precautionary approach involves setting very conservative or zero (i.e. prohibition/moratorium) fishing quotas on the basis of uncertainty about the impacts of continued fishing due to the absence of essential data to formulate conclusive scientific advice, as well as shifting the burden of proof about potential impacts of harvesting on to the fishing states.

12. The USSR on numerous occasions cited several problems involving the supply of historical data: these included, the question of the CCAMLR Secretariat to handle detailed data; the technical difficulties in rearranging its national system of reporting; non-recording of detailed commercial data by its vessels; and difficulties in locating vessel log-books. See Scientific Committee for the Conservation of Antarctic Marine Living Resources (1984), *Report of the Third Meeting of the Scientific Committee*, p. 11; Scientific Committee for the Conservation of Antarctic Marine Living Resources (1985), *Report of the Fourth Meeting of the Scientific Committee*, pp. 27 & 40. Japan on the hand, questioned the propriety of supplying detailed data on its krill fishery claiming among other reasons, that it was not international practice; that its domestic laws prohibit disclosure of commercial information; and that its own scientists have priority of access to analyze data. Ibid., pp. 6 & 40.

13. Commission for the Conservation of Antarctic Marine Living Resources (1985), *Report of the Fourth Meeting of the Commission*, pp. 2-4; Commission for the Conservation of Antarctic Marine Living Resources (1986), *Report of the Fifth Meeting of the Commission*, pp. 5 & 63.

14. E.g., in 1988 the UK drew the Commission's attention to the failure of the USSR to comply with catch and effort data reporting requirements (for the species *Champsocephalus gunnari* in the South Georgia Statistical Subarea) in Conservation Measure 9/VI. The Commission "emphasized the seriousness of the matter and reminded Members of their obligations under the Convention." Commission for the Conservation of Marine Living Resources (1988), *Report of the Seventh Meeting of the Commission*, p. 37.

15. Measure 1/III prohibited fishing, other than for scientific research, in waters within 12 nautical miles of South Georgia; and Measure 2/III establish minimum mesh sizes in the fishery for 6 species of finfish. Commission for the Conservation of Antarctic Marine Living Resources (1984), *Report of the Third Meeting of the Commission*, p. 10.

16. Interview with Hofman.

17. Commission for the Conservation of Antarctic Marine Living Resources (1989), *Report of the Eighth Meeting of the Commission*, p. 25. The USSR took a similar stand when the proposal was first made in the Scientific Committee. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1989), *Report of the Eighth Meeting of the Scientific Committee*, p. 24.

18. See "Annex F: Personal Statement by the Convenor of the Working Group on Fish Stock Assessment" in Commission for the Conservation of Antarctic Marine Living Resources (1989), pp. 97-9.

19. Ibid., p. 29.

20. In this regard Australia led an initiative by the non-fishing states to implement the ecosystem principles of the regime that resulted in the establishment of an *ad hoc* working group to develop a conservation strategy. Commission for the Conservation of Antarctic Marine Living Resources (1986), pp. 23-4.

21. Commission for the Conservation of Antarctic Marine Living Resources (1982), *Report of the First Meeting of the Commission*, p. 3.

22. The granting of observer status was considered as a matter of substance which required consensus according to Article XII of the Convention. Commission for the Conservation of Antarctic Marine Living Resources (1983b), Rule 30.

23. Ibid., Rule 32 (b); 33 (a); 348 (a).

24. This was apparent from the few policy papers that were presented by such organizations to working groups of the Scientific Committee where much of the important deliberations on conservation take place.

25. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1987), *Report of the Sixth Meeting of the Scientific Committee*, p. 62.

26. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1984), p. 38; some members, particularly the USSR were keen to emphasize that no new consultative mechanism should be created to implement the proposal which was not decided on by the Commission citing inadequate information. Commission for the Conservation of Antarctic Marine Living Resources (1989), p. 38.

27. At the 1980 meeting of the IWC, the US, UK and South Africa opposed a proposed resolution by Seychelles that called on the IWC to request CCAMLR members to prevent krill harvesting in the Indian Ocean sector of the CCAMLR Convention area, where many of the feeding grounds of the endangered blue and humpback whales are situated. Barnes (1980), "Danger for the Antarctic" in *Living Wilderness* Vol. 44 (150), p. 17.

28. The "CCAMLR/IOC Scientific Seminar on Antarctic Ocean Variability and Its Influence Marine Living Resources, Particularly Krill" provided valuable input to the elaboration of the CCAMLR Ecosystem Monitoring Program. Scientific Committee for the Conservation of Antarctic Marine living Resources (1987), p. 61.

29. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1986), pp. 40-1.

30. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1989), p. 46.

31. The ASOC coalition regularly sent its sent members from its international secretariat and national affiliates to monitor and report on the annual meetings of CCAMLR held at the regime's headquarters in Hobart, Australia. Interview with Marks.

32. The IUCN itself ceased attending CCAMLR meetings after 1987.

33. Interview with Hofman.

34. Commission for the Conservation of Antarctic Marine Living Resources (1985), p. 17.

35. Interview with Marks.

36. Commission for the Conservation of Anarchic Marine living Resources (1988), pp. 41-2.

37. Ibid., p. 57.

38. See comments of William Y. Brown (Environmental Defense Fund) advocating the application of the Pelly Amendment to the Fishermen's Protective Act and the Packwood-Magnuson Amendment to the Fisheries Conservation and Management Act to rectify the problems of minority vetoes in CCAMLR in United States. Congress. House of Representatives. Committee on Merchant Marine and Fisheries (1983), *Fish and Wildlife Miscellaneous: Part 4*, Hearings, June 30, 98th Cong. 1st Sess., pp. 78-9.

39. E.g., there was a large measure of consensus on the need for major changes in CCAMLR policy among witnesses from government (Australian National Parks and Wildlife Service), environmental groups and scientists giving evidence at a Parliamentary inquiry which, through its recommendations for action by the Australian government, concurred with this consensus. Australia. Parliament. Senate. Standing Committee on Natural Resources (1985), *The Natural Resources of the Australian Antarctic Territory*, Paper No. 495, pp. 88-98.

40. European Communities. European Parliament. Committee on Environment, Public Health and Consumer Protection (1987), *Report on the Protection of the Environment and Wildlife In Antarctica; Rapporteur Mr. H.J. Muntingh*, Doc. A2-57/87, pp. 13-4 & 17-8; and European Communities. European Parliament. Committee on External Economic Relations (1987), *Report on the Economic Significance of Antarctica and the Antarctic Ocean; Rapporteur: Mr. J. Moorhouse*, Doc. A 2-101/87, pp. 11-3.

41. Among other proposals for action, the resolution explicitly called on the European Commission, and urged the EC's CCAMLR signatories, to "exert appropriate pressure on the USSR" to agree to a temporary interruption of all finfish harvesting and to provide all fisheries data. See *Official Journal of the European Communities* (1987), "Economic Significance of Antartica and the Protection of its Environment," Vol. 30 (C 281), Sept 18, p. 194.

42. Greenpeace International (1984), *The Future of Antarctica: Background For a Second UN Debate*, pp. 28-9.

43. In spite of declining harvesting levels, the Antarctic krill fishery was described in 1989 by the Executive Secretary of CCAMLR, Darry Powell, as the "largest single species crustacean fishery in the world." Powell (1990), "Antarctic Marine Living Resources and CCAMLR" in Herr et al. [eds] *Antarctica's Future: Continuity or Change?*, p. 63.

44. Commission for the Conservation of Antarctic Marine Living Resources (1990), *Report of the Ninth Meeting of the Commission*, p. 27.

45. Decisive steps taken in this regard were recognition of several principles by the Commission including, that the Scientific Committee is the "source of the best scientific evidence available"; that scientific evidence "should be submitted in a timely fashion" to the Committee for the consideration and formulation of advice; that the Commission is "obliged" to take decisions even when the Committee has "insufficient information" to formulate advice; and that "in the absence of data, very conservative catch limits should be set." Ibid., pp. 26-7.

46. Interview with Marks. For an assessment of the role of Dr. de la Mare in the IWC Scientific Committee see Cherfas (1989), *The Hunting of the Whale; A Tragedy That Must End*, pp. 140-1; 146; 187; 233-4. The work of Australian scientists was largely influential in developing quantifiable standards necessary for the restoration of depleted fish stocks and in the recognition of the principle that there should be decision-making despite

uncertainty in scientific evidence. See papers by Australian scientists (Appendix 1 and 2) in "Annex 7: Report of the Meeting of the Working Group for the Development of Approaches to Conservation of Antarctic Marine Living Resources (WG-DAC)" in Commission for the Conservation of Antarctic Marine Living Resources (1990), pp. 99-115.

47. An Australian NGO representative, Dr. Andrew Constable (Greenpeace-Australia), was appointed as a member with full participatory rights to the Scientific Committee's Fish Stock Assessment Working Group for the first time in 1989.

48. For an assessment of the role of Australian scientists in CCAMLR, see Antarctic and Southern Ocean Coalition (1990), *NGO Report on the Ninth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources*, pp. 15; 20.

49. Ibid., pp. 1-2; 20-1.

50. Commission for the Conservation of Antarctic Marine Living Resources (1990), pp. 38-9.

51. Commission for the Conservation of Antarctic Marine Living Resources (1991), *Report of the Tenth Meeting of the Commission*, pp. 16-7 & 29.

52. See article by Stephen Nichol, scientist with the Australian Antarctic Division and a member of the CCAMLR Scientific Committee's Working Group on Krill. Nicol (1989), "Who's Counting on Krill?" in *New Scientist* Vol. 124 (1690), pp. 38-41.

53. Commission for the Conservation of Antarctic Marine Living Resources (1990), p. 18; and Scientific Committee for the Conservation of Antarctic Marine Living Resources (1991), *Report of the Tenth Meeting of the Scientific Committee*, pp. 1-3.

54. Greenpeace reports were submitted by ASOC, un umbrella body representing most conservation groups. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1991), p. 60; and Antarctic and Southern Ocean Coalition (1991), *Report of the Antarctic and Southern Ocean Coalition : Tenth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources*, pp. 11-2.

55. Commission for the Conservation of Antarctic Marine Living Resources (1991), pp. 12-3.

56. At the 1991 CCAMLR meeting, Greenpeace released a statement given by an USSR fisheries inspector on that country's data collection procedures and practices. Greenpeace International (1991), "Statement by Soviet Fishing Inspector About Soviet Fisheries in the Southern Ocean."

57. See comments of Convenor, Fish Stock Assessment Working Group, Dr. K.H. Kock in Scientific Committee for the Conservation of Antarctic Marine Living Resources (1991), p. 41. Antarctic and Southern Ocean Coalition (1991), p. 19.

58. The discrepancies were confirmed by Alexey V. Yablokov, Special Advisor to the President of Russia for Ecology and Health. See Yablokov (1994), "Correspondence: Validity of Whaling Data" in *Nature* Vol. 367 (6459), p. 108; see also *Register-Guard* [Eugene, Oregon] (1994), "Whale Kills Vastly Under-reported," February 21, p. 4.

59. Commission for the Conservation of Antarctic Marine Living Resources (1990), pp. 47 & 119; Scientific Committee for the Conservation of Antarctic Marine Living Resources (1990), p. 60.

60. Commission for the Conservation of Antarctic Marine Living Resource Activities (1990), p. 47; Antarctic and Southern Ocean Coalition (1990), p. 14.

61. Early attempts by the UK and other non-fishing states to at least give effect to the concept of observation over inspection in terms of promoting the objectives of CCAMLR (i.e., enhancing the efficiency, accuracy and quality of data collection), were thwarted by USSR and Japan. Commission for the Conservation of Antarctic Marine Living Resources (1984), p. 7; Scientific Committee for the Conservation of Antarctic Marine Living Resources (1984), p. 44.

62. Commission on the Conservation of Antarctic Marine Living Resources (1985), pp. 7-8.

63. Commission for the Conservation of Antarctic Marine Living Resources (1987), *Report of the Sixth Meeting of the Commission*, pp. 22-6.

64. Commission for the Conservation of Antarctic Marine Living Resources (1988), pp. 29-35.

65. Commission for the Conservation of Antarctic Marine Living Resources (1989), p. 105.

66. Commission for the Conservation of Antarctic Marine Living Resources (1988), p. 119.

67. Commission for the Conservation of Antarctic Marine Living Resources (1990), p. 119-20.

68. Greenpeace International (1991), *1990/91 Antarctic Expedition Report*, pp. 121-5.

69. Commission for the Conservation of Antarctic Marine Living Resources (1990), p. 120; Commission for the Conservation of Antarctic Marine Living Resources (1991), p. 89.

70. Commission for the Conservation of Antarctic Marine Living Resources (1990), p. 32.

71. Ibid., p. 33.

72. Antarctic and Southern Ocean Coalition (1991), p. 14.

73. Commission for the Conservation of Antarctic Marine Living Resources (1991), p. 19. The EC raised the issue of designating as observers nationals from countries which are its members but not parties to CCAMLR. It was felt by some observers that the objection may have been motivated by the precedential implications of the CCAMLR observer system for the EC which at the time did not have international observation. Antarctic and Southern Ocean Coalition (1991), pp. 14-6.

74. The only states with substantial on-going marine research programs in 1982 were the fishing states and the US. Interview with Hofman.

75. *SCAR Bulletin* (1983), "Seventeenth Meeting of SCAR, Leningrad, USSR: 5-9 July 1982," No. 73 in *Polar Record* Vol. 21, pp. 408-9.

76. E.g., both Australia and Sweden launched research ships that were intended in part to serve ecosystem monitoring. Scientific Committee for the Conservation of Antarctic Marine Living Resources (1990), pp. 285 & 287.

77. Commission for the Conservation of Antarctic Marine Living Resources (1990), pp. 11-2; 20-5.

78. Conservation Measures 36/X and 37/X in Commission for the Conservation of Antarctic Marine Living Resources (1991), pp. 31-2.

79. Conservation Measures 39/X and 40/X, Ibid., p. 34.

80. The USSR in particular was subject to such stringent criticism that it did acknowledge in 1990 that it had not been meeting its obligations to submit all data required on its fishing activities. Commission for the Conservation of Antarctic Marine living Resources (1990), p. 7; Commission for the Conservation of Antarctic Marine Living Resources (1991), p. 22.

81. Ibid., p. 37.

82. Commission for the Conservation of Antarctic Marine Living Resources (1990), p. 18-9.

83. Antarctic and Southern Ocean Coalition (1990), p. 17.

84. Ibid., p. 19.

85. Ibid., pp. 20-1.

86. Commission for the Conservation of Antarctic Marine Living Resources (1991), p. 22.

87. Commission for the Conservation of Antarctic Marine Living Resources (1990), p. 7.

88. Interview with Marks.

89. Commission for the Conservation of Antarctic Marine Living Resources (1991), p. 36. The Protocol recognized the CCAMLR regime and the rights and obligations of it members; exempted fishing and marine living resource research activities from its mandatory environmental impact assessment procedures; and mandated consultation between members of the Protocol and CCAMLR to prevent jurisdictional disputes. The Chairman of the CCAMLR Scientific Committee has been granted observer status in the Committee's sessions.

90. Nicol (1989), p. 39; Powell (1990), p. 63.

91. Commission for the Conservation of Antarctic Marine Living Resources (1990), p. 8.

Chapter 8 Politics of Regulating Antarctic Mineral Resource Activities: Regime Formation and Collapse

I. Introduction

The negotiations on a regime to regulate the exploration and exploitation of Antarctica's mineral and hydrocarbon resources marked a major watershed in the evolution of the ATS. Given the silence of the Antarctic Treaty on the regulation of nonliving resources, the issue proved to be qualitatively different for Antarctic policy-makers accustomed, as they had been in the 1960s, to dealing with straightforward questions involving the exchange of scientific personnel, or preventing disturbance to wildlife. It involved several complex questions concerning the nature of the resources, their location and their ownership in international law, which were inextricably linked with the disputed and partially overlapping claims to territorial sovereignty in Antarctica. More importantly, the minerals issue involved questions pertaining to the compatibility and feasibility of mining in Antarctica's fragile and pristine ecosystems, and the maintenance of the region as a zone of international peace and science.

This chapter will explore the factors that influenced the ATCPs to pursue the policy of exploiting Antarctica's potential mineral wealth. It will first trace the historical and political background to the negotiation of a mineral regime and identify the dominant assumptions and priorities that shaped the national interests of the ATCPs in the 1970s and early 1980s. The second half of the chapter will explore the nexus between domestic and international factors that shaped perceptions of national interests and made the negotiations for a minerals regime contentious and tortuous. The chapter will also attempt to establish the links between the structural weaknesses in terms of environmental protection of the Convention on the Regulation of Antarctic Mineral

Resource Activities (CRAMRA), and the dominant and conflicting interests and priorities previously identified. The chapter will contend that the implementation of the CRAMRA regime had the potential to undermine the principles of the 1959 Antarctica Treaty. Finally, it will look at the post-1989 developments that led to the collapse of the regime.

II. Overview of the Antarctic Minerals Issue, 1961-1981

The Antarctic Treaty did not address the minerals issue; it merely froze the pre-1959 legal and political status quo. Thus a tendency developed among all governments to downplay the issue of minerals in presenting the Treaty for domestic ratification.[1] Their historical interest in the discovery and exploitation of the continent's potential mineral riches was maintained even during the 1960s, when the primary focus was on the conduct of basic scientific research.[2]

The minerals issue was first raised informally by New Zealand at the 1970 Tokyo ATCM out of concern that the "research programmes of some countries were leaning progressively further in the direction of exploration for mineral resources on the [Antarctic] continental shelf itself."[3] However, the ATCPs adopted a cautious approach of not publicly commenting, due to lack of consensus on the issue. At the 1972 Wellington ATCM a New Zealand proposal for a temporary moratorium on commercial exploration, designed to provide a breathing-space for the ATCPs to rationally consider the issue, was also defeated due to lack of consensus.[4] New Zealand's initiative was largely influenced by a resolution adopted by a 1972 meeting of environmental NGOs that lobbied for the management of Antarctica as a World Park, devoid of commercial development, under the auspices of the UN.[5] However, political and strategic calculations had begun to drive the policy process. Unease about the implications of the negotiations at the United Nations Conference on the Law of the Sea Conference (UNCLOS III) for any future minerals found

in the deep seabed of the Treaty area influenced the ATCPs to seek to institutionalize environmental decision-making within the ATCM process. Moreover, the responsibility of the parties to take appropriate preventive action against activities deemed to undermine the regime was asserted.[6]

The prospect of a mining moratorium thus receded. Even before the advent of the oil crisis of 1973, many ATCP states had developed considerable interests in Antarctic geological research. Research on the ancient supercontinent of Gondwanaland, and of the relationship of the major geologic areas of Antarctica to comparable ones in adjacent continents of South America, Africa India, and Australia, had stimulated interest in the continent as a potentially oil-rich region.[7] Following the quadrupling of oil prices by the Organization of Petroleum Exporting Countries (OPEC), the Western industrialized ATCPs perceived Antarctica as potentially an alternate and secure source of oil and minerals.

The reported discovery in 1973 of traces of hydrocarbons in the Ross Sea continental shelf in Antarctica by the US research ship *Glomar Challenger* stimulated much speculation about the continent's hydrocarbon potential.[8] Concomitantly, Western governments also came under pressure from domestic constituencies, particularly the mining and oil industry, for the granting of licences for exploration activity in Antarctica.[9]

With the full impact of the first world energy crisis being felt by 1975, proposals to preserve Antarctica were undermined. In the changed circumstances, a New Zealand proposal for a permanent mining moratorium based on the World Park concept was not even placed on the 1975 Oslo ATCM agenda.[10] The absolute prohibition on exploitation implied by the proposal was unacceptable to New Zealand's treaty partners.[11] A proposal for an interim moratorium designed to provide time both for the study of the environmental implications and for the necessary consensus to be reached on the basis of the regime was discussed, but that too failed to gain approval. Although at least six countries (Argentina, Chile, Australia, Japan, the USSR and New Zealand) were in favour,[12] the US alone explicitly

objected on grounds that it was impractical to ban future mining in light of the emerging condition of global resource and hydrocarbon scarcities.[13] The exigencies of the oil crisis led Washington to threaten unilateral mining if consensus could not be reached quickly on the modalities of a regime.[14]

Nevertheless, the Oslo ATCM marked a watershed in the evolution of a mining regime. This was evident in the implicit acceptance of commercial mining as compatible with the principles and objectives of the Antarctic Treaty, and of the need to develop a regime for mineral resource activities.[15] The concept involved attempting to balance rational use of potential minerals with protection of the fragile Antarctic environment, the establishment of rules for allocating mineral rights, and guaranteeing the property rights of mining companies in a region lacking universally recognized sovereignty. The emerging consensus also involved a tacit understanding that a policy of "voluntary restraint" (proposed by the US) would be implemented on commercial exploration and exploitation by nationals and companies of the ATS states, pending agreement on a minerals regime.[16]

The implicit acceptance of commercial mining coincided significantly with the decision of the ATCPs to further institutionalize their "prime responsibility" for Antarctic policy-making. Here, as in other issue-areas, they perceived a threat from international organizations and developing countries to shift the management of the continent to a more international forum - in this case, UNCLOS III. This was the first step in the process of claiming the right to define the rules of participation and decision-making, as well as the allocation of benefits from a future minerals regime. This objective was further reinforced by the imposition of a de facto prohibition of mineral exploration activity by all non-signatory states, even those aspiring to accede to the Treaty, as well as the request to acceding states to approve existing and future Recommendations, thereby binding them to the "voluntary restraint"

policy.[17]

In this connection, the growing interest of developing countries in obtaining a share of Antarctica's potential minerals wealth was perceived with increasing apprehension by the ATCPs.[18] The high political, economic and strategic stakes in the minerals issue, in contrast to marine living resources, generated a higher emphasis on the secrecy of deliberations, particularly with regard to the public availability of documents.[19]

Oslo also brought to the forefront the issue of sovereignty in Antarctica. Due to the fixed and non-renewable nature of mineral resources of the Antarctic landmass and its continental shelf, in contrast to the mobility and renewability of marine living resources of the Southern Ocean, claimant states perceived inherent advantages in pressing the issue of sovereign claims. In seeking tangible benefits they sought to invoke the general practice of international law pertaining to state sovereignty over natural resources. Claimants also sought adequate compensation, or even preferential rights, as a quid pro quo for their agreement to forego the exercise of sovereignty and instead allow for the application of the formula (freezing the pre-1959 territorial status quo) contained in Article IV of the Antarctic Treaty.[20] By contrast, the main goal shared by the five non-claimant states that originally signed the Antarctic Treaty was to maintain their freedom of movement in Antarctica by preventing the establishment of any precedents in terms of preferential rights that could be utilized by claimant states to deny them access to any activity contemplated.

The US and the USSR had much higher stakes than all other non-claimant states in maintaining freedom of movement. The US sought to preserve its "access to all areas of Antarctica and surrounding marine areas for peaceful purposes" by its nationals and companies.[21] Access to the Antarctic continental shelf, in particular, was considered vital as such areas had been speculated to "contain potentially recoverable oil in the order of magnitude of tens of billions of barrels."[22] The US "open

access" policy was premised on the need to retain the legal basis of a future claim to Antarctica. This was manifest in its policy of maintaining its politically symbolic presence at the South Pole - the point of convergence for all claimed sectors.

The Soviet Union too was opposed to any concessions to the sovereignty claimants that would create precedents jeopardizing its "freedom of movement"; it had extensive fishing and geological research interests. Although adopting a more cautious approach, Soviet activities were partly driven by the need to deny coastal state jurisdiction in the waters of the Antarctic Treaty area.[23]

Following the Oslo consensus on the acceptability of mining, the ATCPs at their 1977 London meeting decided to formally commence negotiations for an Antarctic marine living resource regime. The experience of solving the problem of sovereignty over Antarctic fish and krill resources in the high seas, they assumed, would provide some guidance to the more contentious negotiations on managing hydrocarbon and minerals resources of the Antarctic continent and continental shelf.[24] In particular, four basic principles were agreed on that addressed issues such as the external pressure on the ATS, the compromise on sovereignty, and environmental protection: (1) continuance of the ATCPs active and responsible role in defining the future minerals regime; (2) retention of the Antarctic Treaty in an unmodified form; (3) protection of the environment as a basic consideration; and (4) consideration of the interests of all mankind.[25] A "voluntary restraint" policy on mineral exploration was formalized pending establishment of a negotiated regime and further studies on the environmental impact of mining. At the 1979 Washington meeting, the ATCPs' commitment to negotiate a minerals regime crystallized as the consensus was further expanded to include the environmental attributes of such a regime.[26]

The 1981 Buenos Aires ATCM finally agreed on the modalities of a minerals regime. In light of the agreement reached on the regime for

conservation of marine living resources, the minerals regime was considered "as a matter of urgency." The consensus on the basic principles of a regime was reiterated. A new principle addressing the sovereignty issue, requiring preservation of claimant and non-claimant positions in the Antarctic Treaty, was added to the original four. As with the marine living resource issue, a separate negotiating procedure from the ATCM in the form of a Special Consultative Meeting was instituted. And in an attempt to further institutionalize the authority of the ATCPs, the ambit of a future minerals regime was vaguely defined as the "Antarctic Continent and its adjacent offshore areas but without encroachment on the deep seabed," thereby preventing the minerals issue from being raised at the UNCLOS III forum.[1]

III. Minerals Regime Formation, Resource Demands and The Domestic Politics Nexus

The formal negotiations for a regime to regulate environmentally acceptable mineral resource activities in Antarctica spanned six years (June 1982-June 1988). The Fourth Special Antarctic Treaty Consultative Meeting had a tortuous negotiating process involving twelve separate sessions and eight venues in eight different member-states of the ATS. However, in conformity with the ATS practice, numerous informal negotiating sessions involving varying numbers of delegations and in varying compositions were also held in several venues. All negotiations involving the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA)[2] were held under stringent rules of secrecy and almost all documents were classified.[3] The pervasive confidentiality of the CRAMRA negotiating process makes a reliable analysis a difficult proposition. NGOs were not represented as official observers, but the scant information available on the talks was provided by these organizations; NGOs monitored them and shifted the focus from resource to

environmental issues. The level of secrecy in comparison with the CCAMLR regime negotiations was markedly higher, as was evident in the paucity of public comments by members of national delegations. It signified the higher stakes involved, and especially the need of the ATCPs to institutionalize their decision-making power, particularly in light of attempts by the Group of 77 to secure UN intervention in the negotiating process.

Despite the secrecy of the CRAMRA negotiating process several developments in the policies of the ATCP states during the six years of deliberations provide evidence of the contentious nature of the process. These developments were influenced by several factors both at the international and domestic levels.

Oil and Mineral Resources Scarcity

The widespread economic dislocations in Western ATCP states caused by the oil crises of the 1970s, and the resulting perceptions of resource scarcity, generated interest in Antarctica as a possible source of oil and mineral supplies. Vulnerabilities were most acutely felt by the US due to its reliance on cheap, imported oil for development. From 1973 onwards, US Antarctic policy was largely driven by the desire to develop a minerals regime within the ATS framework. Although by 1981 the worst effects of the energy shocks had dissipated, US insecurity about its strategic oil and minerals supplies continued to influence its Antarctic diplomacy.[30] Moreover, regional instability (the Iran-Iraq war, the civil war in Afghanistan), the threat of potential cartel action by Third World mineral suppliers, and the onset of the new Cold War with the Soviet Union, fed Western feelings of insecurity about energy supplies.

Japan also had major domestic reasons for giving priority to an Antarctic minerals regime. Among the industrialized economies it was the most vulnerable in terms of oil dependence, energy import dependence,

Middle East supply source-dependence, and raw material importation and consumption. By 1982, according to a Japanese official, the "Japanese [had] become preoccupied with ensuring access to overseas raw materials, especially to oil and food."[31] The urgency of the Japanese search for alternate supplies was evident in the resource assessment surveys for oil and natural gas undertaken in Antarctica from the end of 1980.[32] Other Western ATCPs which experienced oil and raw materials scarcities, such as West Germany and France, perceived Antarctica as the longer-term solution for diversifying their sources. Even those ATCPs which had found alternate sources of oil during the energy crisis in their EEZs (Norway and the UK from the North Sea; Australia and New Zealand from the Tasman Sea), saw Antarctica as a future reserve source. Moreover, all of them as claimant states were attracted by the proposition of deriving benefits from exploitation.[33] Norway and West Germany, moreover, had other domestic reasons for perceiving Antarctica as a future area of oil development. Both countries had made considerable advances in the development of deepsea oil drilling technology, and were keen to test their capabilities in Antarctica. Thus, most Western industrialized ATCP states developed interests in Antarctica as a sources of supply for oil and minerals.

In contrast, the Soviet Union had different domestic causes for looking to Antarctica as a potential source of oil. Despite being the world's largest producer and second-largest exporter of oil, the Soviet oil industry had begun to experience chronic production shortfalls due to inefficient management, backward technology and dwindling reserves.[34] Thus it too had a long-term interest in Antarctic oil. The size and scope of Soviet Antarctic activities, especially its geological research, provide some evidence of this interest.[35]

Governmental Changes and Ideologies

The development of an Antarctic mineral regime received a considerable impetus from the governmental changes in the leading Western ATCP states in the 1980s. The ideology of these governments placed emphasis on access to resources, a reduced role for the state in environmental regulation, and a greater role for the market in resource allocation. Environmental regulation was seen as an impediment to economic growth. This pro-development ideological orientation was best articulated and exemplified in the United States and United Kingdom under the Reagan Administration and the Thatcher government respectively.

President Ronald Reagan was elected in 1980 on a platform that was explicitly pro-development, and which called for a comprehensive review of domestic environmental laws and regulations.[36] More significantly, in light of America's high level of dependence on foreign sources of oil and minerals, it placed special emphasis on the need for US foreign policy to obtain assured access to energy and raw materials. This ideological orientation also aided resource-oriented bureaucratic agencies in their attempt to influence the US position at the CRAMRA negotiations. Some agencies were opposed to any regulations that could potentially obstruct Antarctic mineral resource activities.[37]

Shifts in the foreign policies of both the US and UK were evident in the 1980s. In 1982, both governments refused to sign the Law of the Sea Convention and rejected the mining regime proposed under it, citing among other reasons the inadequacy of the provisions to guarantee access of their mining companies to the minerals of the deep seabed.[38] The Administration's first policy statement on Antarctica in 1982 declared that the US had significant economic interests in Antarctica, and that such interests would be supported by an "active and influential presence in Antarctica."[39] In similar vein, the Thatcher government announced in 1983 that its overall policy would be to "maintain an active,

authoritative and influential presence" in Antarctica.[40] Perhaps the most important indication of the pro-development orientation of the British government came in 1989 when it passed legislation ratifying the CRAMRA Convention despite evidence that the treaty would not come into force following the refusal of Australia and France to sign it. This stand coincided with reports which indicated that British oil companies had already made investments in Antarctic research.[41]

Role of Pressure Groups

The role of pressure groups in influencing the ATCP governments was evident to varying degrees throughout the CRAMRA negotiations. At least three types of pressure groups were active on the minerals issue. The environmental NGOs which generally opposed mining in Antarctica and which had the highest profile among the pressure groups constituted one such group. Although they failed to influence the governments to adopt a mining ban, as advocated in their Antarctic World Park (AWP) proposal,[42] NGOs nevertheless pursued a strategy of monitoring the CRAMRA negotiations. They lobbied for more stringent environmental safeguards and launched a wider international campaign to mobilize public opinion against the mining option, to change the ATS policy profile from resource to environmental issues, and to allow greater public scrutiny of the regime. The strategies and activities of environmental groups at both the domestic and transnational levels had particular impact after the Antarctic minerals regime was adopted.

The second type of pressure groups, which played a less conspicuous role, were the oil and mining companies. Industry groups exerted pressure on the US State Department for offshore exploration rights prior to 1982. However, the downturn in the international oil and metal markets in the 1980s increased the estimated operating costs in the Antarctic, and blunted the enthusiasm of companies to invest in Antarctic exploration

activities.[43] Even though they did not envisage full-scale commercial production to commence for a long time, the oil companies nevertheless lobbied for a politico-legal framework that would at least enable them to assess the resource potential of Antarctica.[44] Australian oil industry lobbies made similar demands on their government. In addition, these wanted safeguards against subsidized development.[45] They perceived that the larger US-based companies would secure subsidies from the US government that would place them in an uncompetitive position in view of the high operating costs in Antarctica.

Despite the lack of economic incentives and the high environmental risks, the oil industry perceived Antarctica as a "frontier" region that would inevitably be developed. The CRAMRA regime was seen as facilitating, among other things, the allocation of mining rights and the guarantee of property rights in the event of discoveries of commercially viable oil deposits in the disputed continent.[46] Moreover, the general climate of international relations of the 1978-84 period was marked by the second oil shock, and by escalating tensions between the superpowers arising from regional conflicts that threatened resource supplies. This climate provided saliency to energy, mineral, strategic and security issues, and favoured industry pressure groups. It provided opportunities for them to pursue their interests by pressuring governments to adopt policies in support of their activities. Moreover, the governments of US and UK in particular were ideologically receptive to proposals from the oil industry for guarantees on proprietary rights.

A third type of interest group active in the Antarctic minerals issue in some Western ATCP states comprised elements of the Antarctic scientific community. The scientific community's role within the ATS context has traditionally been perceived as apolitical and advisory. However, the role of scientists as organized pressure groups is one which is rarely discernible due in part to the nature of their professional activities. They operate largely within autonomous scientific or academic

institutions which do not come under extensive public scrutiny, and have low public profiles. Nevertheless, Antarctic scientists have professional research interests, they receive funding directly from ATCP state agencies via individual grants or through affiliated institutions, and are dependent on governments for logistical support for their Antarctic research projects. Scientists engaged in geological and geophysical research have particular incentives to function as interest groups, though they operate more informally than either environmental NGOs or industry lobbies.

With respect to CRAMRA, SCAR scientists did not play the same advocacy role that environmental NGOs or industry groups adopted. They nonetheless played a pivotal advisory role. Especially in the preparatory phase of the regime negotiations, SCAR facilitated the conduct of environmental impact evaluations of possible Antarctic mineral resource development through the sponsorship of numerous specialist groups at the request of ATCP governments. By playing a supportive and enabling role in this regime formation process, SCAR performed an influential role in shaping the outcome of the CRAMRA negotiations. Moreover, by the sharing of common values and approaches to the Antarctic minerals issue, the SCAR specialists further reinforced their influential role within the ATS as its sole advisory body.

Role of Public Opinion

Domestic public opinion did not have a significant impact during the CRAMRA negotiations in any of the ATCP states. In fact public awareness of the negotiations was low. This was due to sparse media coverage, the pervasive secrecy of the negotiations, the lack of any governmental initiatives to inform the public on the course of the talks, and the general remoteness of Antarctic matters from the more important issues on domestic political agendas. There was hardly any substantive public

awareness of or public involvement in the Antarctic minerals policy-making processes even in the more open political systems of the Western ATCP states. Nor was the Antarctic minerals issue ever raised as part of electoral politics prior to 1988.[47] Environmental NGOs attributed the initial lack of political visibility of the minerals issue to a restrictive policy-making process fashioned primarily by bureaucrats in the ATCP states.[48] While Antarctic policy formulation had been a near-exclusive domain of bureaucrats and scientists prior to 1989, the overriding foreign policy priorities of at least the Western ATCP states in that period were dominated by economic and strategic interests, thus preventing acceptance of NGO proposals for preservationist options such as the World Park proposal.[49] However, domestic public opinion played a decisive role in the post-1989 period in the ratification process of CRAMRA. Greenpeace, for example, had by 1987 through its World Park campaign obtained over a million signatures for its "Antarctic Declaration" from people in 59 countries.[50]

IV. Perceptions of National Prestige and Resource Claim-Staking Activities, 1982-1988

Another factor that revealed the contentious nature of the CRAMRA negotiations was national prestige, and the related claim-staking activities undertaken by states. These perceptions were shaped largely by speculation about Antarctica's mineral and hydrocarbon potential.[51] They were manifest in the dramatic growth in Antarctic Treaty membership, budgetary allocations for national Antarctic programs, the proliferation of scientific research stations in Antarctica, and the changing priorities of research. Perceptions of an Antarctic cornucopia evinced the interest of a number of new states which wanted to stake a claim to any potential mineral resources, and to have a voice in defining the rules and conditions of access to minerals as well as the possible distribution of

benefits from their exploitation.

National Presence and Activities in Antarctica

The phenomenal growth in the membership of the Antarctic Treaty following the decision to commence negotiations on a minerals regime was a manifestation of the high level of national prestige attributed to participation in the negotiations. The membership grew both in the categories of states attaining Consultative status (that bestowed rights of participation and voting) as well as of states acceding to the Treaty (which guaranteed the rights of an observer at the CRAMRA negotiations). Thus, during the six years of CRAMRA negotiations, Consultative status was accorded to six new states (Brazil, India, China, Uruguay, East Germany and Italy). Twelve states (China, India, Hungary, Sweden, Finland, Cuba, South Korea, Greece, North Korea, Austria, Ecuador, and Canada) acceded to the Treaty (see APPENDIX 2). By comparison, in the first 20 years of the operation of the Antarctic Treaty (June 1961-June 1981) only two states (Poland and West Germany) had been granted Consultative status and thirteen others (Poland, Czechoslovakia, Denmark, Netherlands, Romania, East Germany, Brazil, Bulgaria, West Germany, Uruguay, Papua New Guinea, Italy and Peru) had acceded. Conversely, the admission of some of the more influential Third World members (Brazil, India, China) to Consultative status was designed to deflect the build-up of external pressures on the ATS through the Malaysia-led Group of 77 initiative to shift the minerals negotiations to a UN-sponsored forum. While these influential G-77 members sought in part to enhance their prestige and to stake a claim to potential Antarctic resources, the industrialized ATCPs sought to overcome some of the criticism of the exclusiveness and elitism of the ATS.

Perceptions of national prestige and claim-staking activities were also evident in the enhancement of national Antarctic programs and in the proliferation of research stations. The build-up of scientific research

activities was viewed as a prerequisite for the maintenance of a high profile presence on the ice, and as facilitating the supply of vital geological information that would strengthen the negotiating position of parties. Funding of scientific research, especially geophysical projects and of instruments and logistical support, in some states increased 100 times over a ten-year period.[52] Thus, effectively, scientific research came to be perceived as the "currency of influence" in the definition of the CRAMRA regime's rules and conditions of access to resources.[53] The drive to bolster national Antarctic programs generated a competition, as each ATCP felt that it could not afford to be left behind in the perceived need to establish or reinforce a presence and greater acquire greater knowledge of Antarctica's mineral resource potential.[54] The expansion of activities in Antarctica attained higher priority for the UK after its 1982 war with Argentina in light of the proximity and historical links of this dispute to its other more contentious territorial claims in Antarctica with Argentina and Chile.[55] This latent competition was potentially conflictual and had destabilizing propensities for the "voluntary restraint" policy on mineral resource activities agreed to in 1977. Environmental groups questioned the motives behind the geological and geophysical research activities undertaken during the negotiations, but these accusations were vehemently denied by governments.[56]

Despite the high (if not prohibitive) cost of maintaining a presence and conducting scientific research, small and Third World states which were either original signatories or early accederers to the Antarctic Treaty were also pressured to enter the mineral resource game for fear of losing their "influence" at the CRAMRA negotiating table. The most conspicuous example was Belgium. Although it attained Consultative Status by virtue of its activities during the IGY and participation in the 1959 Washington Conference, Belgium had for financial reasons confined its participation to sending its scientists on other countries' expeditions to Antarctica. However, with growing international interest in the continent's resource

potential and in light of the enhanced presence and visibility of activities of other ATCPs, Belgium was pressured in 1985 into resuming its scientific activities in association with other European expeditions, albeit within the limits of its capacity.[57] Poland (the first state both to accede to the Antarctic Treaty and to attain Consultative Status by virtue of post-1961 activities), faced similar pressures, though under different circumstances. Despite its severe domestic economic crisis, and Western economic sanctions following the imposition of martial law in the early 1980s, Poland sought to keep up its presence and activities in Antarctica.[58]

The two Third World claimant states, Argentina and Chile, likewise engaged in several forms of activities to strengthen their bargaining position at the minerals negotiations. Argentina, although emerging from a humiliating defeat in the Malvinas/Falklands War, and facing major domestic economic and political turmoil, was anxious to strengthen its territorial claim. It undertook, among other things, a major program of colonization (including settling military families and encouraging child births); administrative acts, including passport control and postage stamp issues; a tourist industry; a geological research program; and plans for the establishment of service industries supplying scientific equipment and renting naval icebreakers for transporting scientific expeditions.[59] Likewise, Chile which also faced a domestic economic crisis, was pressured into bolstering its claim through a policy of colonization, the development of a tourist industry, plans for a logistical support service for future mining expeditions, symbolic political visits by government officials and a program of geological exploration by the Chilean national oil company.[60]

Both Argentina and Chile, whose domestic political systems were dominated by powerful military establishments, utilized the capacities of their militaries to enhance their national presence and claim-staking activities. This expanded military role was especially prominent in the

control and manning of stations and in the implementation of colonization policies characterized by a high level of patriotism and national prestige. Although the Antarctic Treaty does not prohibit the use of the military for logistical and support services, and although other ATCPs had deployed military capabilities in support of activities, the expanded role of the military in the two Third World claimant states' Antarctic activities reflected in part their domestic vulnerabilities in terms of inadequate financial, scientific, technological and civilian resources. Thus despite their meagre capabilities, both were motivated to enter the resource stakes in order to prevent the erosion of not only their territorial claims but also their "influence" at the CRAMRA negotiations. Both countries were also pressured in part by fears of the erosion of the validity their claims by the activities of other countries. In this regard, the location of both the Argentinean and Chilean claims in the most geographically accessible and climatically favourable part of Antarctica - the Peninsula region - influenced the Latin American claimants in their approach to the minerals regime. The establishment of colonies in the region may also have been motivated by the desire to fulfil the criteria of effective occupation which had played a defining role in Antarctic politics.

A related factor was the proliferation of scientific research bases in Antarctica. In order to qualify for a seat at the CRAMRA negotiations, all new applicants for Consultative status sought to satisfy the criteria involving the establishment of a scientific station or the despatch of a scientific expedition. Similarly, both the original claimant and non-claimant ATCPs perceived the necessity to strengthen their own stakes to any potential minerals by the establishment of new bases. In the first 20-year period after the Antarctic Treaty entered into force the number of new stations (both year-round and summer only) established totalled twenty-three. In contrast during the six-year period (1982-88) of the CRAMRA negotiations, the number of new bases established as well as those

reopened totalled twenty seven.[61] Aspects of the competition to establish or reinforce a country's presence on the ice was evident in decisions to keep open bases which were previously earmarked for closure; to reopen bases that were previously shut down; to rebuild or upgrade existing bases; or to locate bases strategically for either reasons of geological interest, logistical convenience, or for politically symbolic purposes.[62]

The most instructive example of a base that was established and maintained at great cost for mostly symbolic and strategic reasons was the US *Amundsen-Scott* base at the South Pole. As noted earlier, this is sited at the point of convergence of all claimed sectors in Antarctica. It reflected the US policy of non-recognition of territorial claims and strengthened its demands for equal access to the continent's potential resources. The USSR's presence in Antarctica also revealed the strategic calculations of states involved in the minerals negotiations. Soviet bases were sited in a ring-like pattern encircling the entire continent. This gave it a foothold in every claimed sector (except that of New Zealand's) and in the unclaimed sector (to which the US is widely perceived as having a basis of claim).

This drive to establish a presence and conduct claim-staking research (especially on the Fildes Peninsula, King George Island, South Shetland Islands [see Map 3] - a region disputed by the overlapping claims of Argentina, Chile and the UK) had adverse environmental impacts resulting from the over-concentration or excessive proximity of activities. As was seen in Chapter 4 strategic considerations had considerable priority over environmental factors in the establishment of bases.

Logistical Capabilities

States also built-up of independent logistical capabilities designed to facilitate easier access to all parts of the Antarctic continent for

the establishment of a presence and for research. Due to the unique geographical and physical barriers limiting access to and within Antarctica, the build-up and demonstration of logistical capacities received considerable priority. Despite the exorbitant costs of polar logistics, the ability to transport personnel, equipment, and supplies safely, rapidly and with flexibility for the conduct of planned activities was perceived as a prerequisite for claim-staking activities and as strengthening the hand of states engaged in the CRAMRA negotiations.

Logistical capacity also served a symbolic political function. For the claimants it was an instrument for the strengthening their claims to sovereignty over their respective sectors. For the non-claimants, especially the US and USSR, logistical capacity was vital for the demonstration of their non-recognition of claims and for exercise of the freedom of access and movement (as guaranteed by the Antarctic Treaty) to and within all parts of Antarctica, as well as to strengthen their claims to any or all parts of the continent. For the other non-claimants and for new ATCPs, logistical capacity was essential for demonstrating non-recognition of claims and freedom of access to the continent. Thus, most ATCPs expended major efforts to acquiring specialized research and cargo vessels, aircraft and landing facilities as means for facilitating mobility and access to and within Antarctica. The construction of the French airstrip project at Pointe Geologie near a bird colony provided evidence of the dominance of strategic considerations in the acquisition of logistic capabilities and claim-staking activities.

For some ATCPs, the strengthening of independent national logistics capacity assumed particular importance in light of its linkage to security issues affecting their bilateral relations with Antarctic Treaty partners. This was particularly evident in the case of New Zealand. Wellington sought to offset some of its dependence on the US for Antarctic logistic support through the latter's forward base (*Operation Deep Freeze*) in Christchurch, especially in light of Washington's attempt to link such

cooperation to New Zealand's nuclear-free zone policy. Draft legislation under this policy sought to ban foreign nuclear-powered and/or -armed ships and aircraft (including those of the US) entering New Zealand's ports and airports, and was designed to fulfil a promise by the Labour Party at the 1984 general election. In 1985 New Zealand increased funding for the development of its own logistics and transport capabilities in its Antarctic Program in order to strengthen its presence in the Ross Dependency and to develop a greater degree of independence in its Antarctic operations.[63] The possible removal of the US base from Christchurch to Australia in retaliation against the draft legislation banning nuclear warships and aircraft was perceived as having considerable implications for New Zealand's Antarctic activities and for its domestic economy.[64] Thus, New Zealand's bilateral dispute with its long time Antarctic ally and partner, the US, compelled it to boost its national logistical capacities.

Scientific Research Data

Further, states were reluctant to freely exchange or publish information on the results of geological and geophysical research. This had been an established practice under the Antarctic Treaty (Article III [1][c]). In particular, unusually lengthy delays were experienced in the 1980s in the full disclosure of multichannel seismic reflection data, which had implications for the locating of potential oil fields. With the exception of the US, almost all ATCPs that conducted seismic surveys in the Antarctic continental margin - in particular, Japan, the Soviet Union and West Germany - showed reticence in the free exchange or publication of data gathered from such surveys; in the case of the Japan there had been instances of outright denial of access to data.[65] The latent assumption was that the states with advance knowledge of the existence of one or more giant or super-giant oil fields off Antarctica would have significant

bargaining leverage at the CRAMRA negotiations. Additionally it was presumed that such information would secure a head start for potential mining states in the development of Antarctica's oil or minerals under the CRAMRA regime. However, the undue emphasis on confidentiality of data in what was essentially an early stage in the investigation of the geology of Antarctica was not in keeping with the spirit of the Antarctic Treaty's requirements on the open exchange and publication of scientific data, and had the potential to destabilize the ATS regime by fostering national suspicions.

The tendency toward secrecy even prior to commencement of commercial operations thus raised the spectre of rivalry and conflict under the future CRAMRA regime. The potential mining states had considerable latitude to over-ride the compliance monitoring mechanisms of the Antarctic Treaty (for example, the exchange of information and the unlimited right of on-site inspection) by emphasizing the confidentiality of commercial information and property rights. The pressure to exploit what would in effect be strategic minerals and hydrocarbons had the potential to introduce a resource rivalry that would inevitably generate a level of secrecy that would be incompatible with Antarctica's non-militarized and non-nuclearized status.

V. Structure of the CRAMRA Regime as an Effective Environmental and Conflict-Prevention Mechanism

Although the CRAMRA regime was set aside in favour of a more comprehensive environmental regime under the Madrid Protocol on Environmental Protection in 1990-91, it was nevertheless a ground-breaking instrument not only in the evolution of the overall ATS regime but also in the Antarctic environmental regime. It was the first attempt at regulating commercial mineral and hydrocarbon resource development on the Antarctic continent and its circumjacent waters with environmental safeguards.

The highly contentious nature of the CRAMRA negotiations, in terms of the stakes and the conflicting national interests involved, meant that the regime structure had to accommodate in a "package deal" the positions of claimant and non-claimant, mining and conservation-oriented, and developed and developing states. However, as in the case of the CCAMLR regime negotiations, in the process of accommodating such interests the structure of the CRAMRA regime weakened the environmental safeguards. Moreover, in its practical implementation the regime had the potential to generate rather than prevent conflict resulting from the competitive drives of commercial activity. In discussing the text of the CRAMRA Convention we shall attempt to identify some of the structural weaknesses in terms of environmental protection and conflict prevention. These serve to show why the CRAMRA regime proved to be controversial first with environmentalists, and then with some governments. NGOs in particular, questioned the underlying character of the regime and its adequacy to protect the Antarctic environment especially when decisions involved economic and strategic priorities. They argued that the weaknesses were symptomatic of the ATCPs' attitude to environmental protection and called for a comprehensive review of the effectiveness of ATS environmental regimes. Thus, the ecological drawbacks in CRAMRA acted in part as catalysts for the negotiation of the Madrid Protocol.

Scope of the Regime

The scope of the CRAMRA regime was designed to apply to the entire region south of 60 degrees south latitude (including the Antarctic continent and islands) and to the continental shelves which extend beyond that area (Article 5). It underscored the potential for widespread damage to the pristine ecosystem of Antarctica that could result from mining activities. Significant also was the avoidance of the demarcation of the legal boundary between the regimes of CRAMRA and the deep seabed proposed

under the 1982 Law of the Sea Convention, presumably in order not only to avoid conflict with but also to thwart encroachment of the ATCPs' exclusive authority over Antarctic minerals by the future International Seabed Authority.[66]

Environmental Safeguards

In keeping with the dominant domestic and foreign policy perceptions, interests, priorities, assumptions and values of the ATCPs in the 1970s and early 1980s, CRAMRA sought to balance mining activities with safeguards to protect the fragile Antarctic environment. The "safeguards" option envisaged a framework for determining whether mineral activities were environmentally acceptable, and if so, for regulating them in three stages (prospecting, exploration and exploitation) [Articles 2 & 4]. An elaborate and obligatory set of environmental principles and standards for evaluating and approving mineral resource activities was proposed (Article 4). CRAMRA was a major advance on most conservation regimes, including CCAMLR, in that it placed the burden of proof on states planning or sponsoring activities to demonstrate that their activities would not damage the environment, according to agreed standards and procedures for systematically assessing the impacts of planned activities.[67]

Nevertheless, in the negotiation of the safeguards option some vital environmental standards were left undefined and were vulnerable to narrowly defined interpretations. Environmental groups expressed concern that such ambiguity would likely lead to covert political agreements (for example, between claimant and sponsoring states) to open up areas for development. They were sceptical of the ability of the institutions to define terms such as "information adequate to enable informed judgements," "significant adverse effects," "significant changes," "further jeopardy," "degradation of", or "substantial risk."[68] Also, in light of the still limited knowledge about Antarctica, the collection of the data necessary

for critical and informed decisions on minerals activities was susceptible to restrictions imposed by political bargaining processes in the institutions of the regime.

Moreover, the mixed record of compliance under management regimes already in place before 1989 for activities with less threatening impacts than mineral resource activities, as well as the claim-staking activities undertaken in anticipation of minerals development, raised doubts as to CRAMRA's ability to guarantee that these standards would be fairly interpreted and applied to proposed activities. Thus the Agreed Measures and the CCAMLR regime - at least in its first phase - and the apparent hesitance of the ATCPs to investigate alleged violators or to criticize fellow members, gave credibility to the subsequent NGO campaign against CRAMRA.

Participation, Decision-Making and Potential Benefits in the Institutional Machinery

CRAMRA proposed a system of institutions more comprehensive than any extant regime under the umbrella of the ATS until 1988. It called for a Commission as the central decision-making body. It was to have a four-tier membership composed of all ATCPs, others who attained the standard of "substantial scientific, technical or environmental research" within CRAMRA's ambit, sponsoring states for the duration of their involvement, and those who become observers. The Commission was to have power among other things to adopt environmental protection measures, open an area for minerals activities, approve the budget, and decide on the use of surplus revenue. Its decision-making was to be by three-quarters majority vote on most substantive matters, and by consensus on the budget, non-discrimination and the opening of an area.

However, the most important decisions were to be made in the Regulatory Committees set up whenever an area was to be opened up by the

Commission (Article 29[2]). Such committees were to have a membership that balanced the interests of four claimants (including the claimant/s for the area to be opened up), the US and the USSR (as ATCPs with a basis of claim), together with four non-claimants and at least three members representing developing countries (Article 29[2]). However, no provision was made for IGO or NGO participation as observers. Included among the formidable powers of the Regulatory Committees were consideration and approval of applications for exploration and development permits, the approval and cancellation of management schemes, monitoring and inspection (Article 31). The vital substantive decisions of the Regulatory Committees were to be made by two-thirds majority vote on substantive issues; for approval of management schemes[69] (which were effectively exploration permits) and development permits, such two-thirds majorities required the inclusion of simple majorities of both claimant and non-claimant membership blocs (Article 32).

Although CRAMRA did not resolve the highly contentious "ownership" issue over Antarctic minerals and had instead resorted to the compromise/freeze on sovereignty claims as constituted in Article IV of the Antarctic Treaty, the voting procedures in the Regulatory Committees went some way towards meeting the preferential rights demanded by the claimant states. They were to be guaranteed a role in such committees, and Argentina and Chile, as developing country claimant states, were expected on average to be represented on 75% of all Regulatory Committees.[70] In addition to the prestige accruing from such a special status, claimants were potentially left in an advantageous position to secure informal recognition of their sovereignty. Environmental groups criticized the potential leverage that this representation granted to claimants in terms of their ability to work out covert and/or outside bilateral arrangements, such as royalties from potential mining states as a *quid pro quo* for their affirmative votes on the approval of management schemes.[71] Also, since claimants of potential mining areas were able to influence the composition

of the claimant membership within Regulatory Committees, there was a likelihood of 'bloc' voting in the practical application of the decision-making procedures by claimants, and of coalition - formation between claimants and potential mining states designed to protect narrowly-defined national interests.[72]

The CRAMRA regime also proposed a Scientific, Technical and Environmental Advisory Committee, an expert group open to all parties (Article 23). It was to provide advice to both the Commission and the Regulatory Committees. Advice, to the latter in particular, was to include guidance on how to implement the basic environmental principles and standards, adoption of guidelines, examination of exploration applications, management schemes and development applications (Article 26). It was also to provide advice in the form of a comprehensive environmental assessment of proposed activities at each critical stage of decisions on opening up an area for exploration and development (Articles 41, 43, 45, and 54). Nevertheless, the Advisory Committee's advice was non-binding, and its independence was compromised by the control exercised over its meetings and procedure by the Commission (Articles 24 & 25).[73] It was also denied a role in the compliance- monitoring regime and a voice in its funding. Nor was it able to grant observer status to NGOs with the necessary competence on environmental protection. However, it was empowered to seek information and advice from outside "scientists, experts or scientific organizations as may be required on an ad hoc basis" (Article 26[5]).

The CRAMRA regime also proposed an institution for dispute settlement, the Arbitral Tribunal. When disputes could not be resolved by the members on their own, they were either to be referred to the proposed Tribunal or to the International Court of Justice (Articles 56-57). Members were entitled to exclude certain categories of disputes: those that were not exemptible and subject to compulsory, binding settlement included disputes involving the protection of the Antarctic environment

(Article 58). Potential disputes involving only operators (separate from sponsoring states) were left to be resolved under proposed management schemes.

The institutional structure and machinery proposed under the CRAMRA regime in general reflected the interests and priorities of the ATCPs of the 1970s and early 1980s. These were oriented toward gaining optimum advantage in the access to potential Antarctic mineral resources. Structurally, CRAMRA was weighted in favour of the political institutions which had a greater interest in development (the Regulatory Committees and the Commission). The generally apolitical and environmentally- and scientifically-qualified body, the Advisory Committee was too weak to influence the decisions when short-term economic and/or strategic considerations were likely to override environmental factors. CRAMRA thus failed to reflect the generally expressed commitment of the ATCPs to balance mining activities with safeguards to protect the fragile Antarctic environment.

Environmentalists were critical that the regime was likely to be skewed in favour of development. They pointed to the implicit assumption of automaticity in the approval of a development permit by a Regulatory Committee; and the silence of CRAMRA in case the Committee was unable to reach the two-thirds majority necessary for approving the modifications to a management scheme, thereby implying the need to water down the stringency of environmental regulations (Article 54 [5]).[74] This was further reinforced by the lack of power of the plenary body, the Commission, to overrule an approved development permit, thereby generating the potential to concentrate critical decision-making power in the hands of a few ATCPs.

The CRAMRA regime sought to accommodate some of the interests of the developing countries in terms of participation in the decision-making institutions of the regime, and deriving benefits from any revenues generated from Antarctic minerals development. It encouraged participation

by developing countries that were non-ATCPs through the ATCPs themselves or their companies (Article 6). It also mandated the participation of at least three developing countries which were members of the Commission in any Regulatory Committee. Yet the qualifications for Commission membership for non-ATCP states that were set - such as active participation in substantial scientific, technical or environmental research in the Antarctic, and sponsorship of Antarctic mineral resource activities - were in practice formidable barriers to most developing countries' participation.[75] These qualifications, together with the fact that the same criteria were not to be applied to ATCPs for their Commission membership, were analogous to the criteria for maintaining Consultative status in the Antarctic Treaty.[76] In effect the regime structure did not provide for equal access for all countries. Moreover, developing countries' expectations of deriving proportionate benefits from potential Antarctic minerals development could not have been realized under CRAMRA, as it failed to specify a formula for the distribution of any revenues which accrued from minerals development.[77] Limited participation in the CRAMRA regime also reflected the more industrialized Western ATCPs' fear that their access to Antarctic minerals could potentially be cut off by a developing country majority achieved via open entry membership rules.[78]

The participation of IGOs and NGOs as observers in the work of the CRAMRA regime was to be restricted to the Commission and to the Advisory Committee, subject to Commission approval (Article 34 [2-5]). There was to be no direct input of environmental and scientific expertise from such bodies to the Regulatory Committees empowered to take the critical decisions on mineral resource development. This exclusion, especially of the NGOs, was particularly significant since their participation in CCAMLR was one of the salient factors influencing the subsequent policy direction in the conservation of Antarctic marine living resources.

VI. Enforcement and the Confidentiality of Commercial Data

The CRAMRA regime proposed the protection of the confidentiality of commercial data and the guarantee of property rights of operators in order to overcome problems arising from the lack of internationally recognized legal tenure in Antarctica. These were intended as legal and political guarantees to commercial operators to assuage their insecurity about operating in Antarctica. The large-scale financial resources necessary for investment in commercially viable projects in Antarctica necessitated the protection of proprietary rights.[79] US companies were disinclined to invest in Antarctic mining in the absence of such an established legal regime.[80] Thus, under the compliance monitoring system, inspections of stations, installations and equipment were to be conducted without "interference" by respecting the measures adopted by the Commission to protect confidentiality of data and information. Inspections were also to be compatible and reinforce each other and were not to impose "an undue burden" on stations and installations visited (Article 12 [5-6]). Further, commercial data and information derived from prospecting, exploration and development were to be afforded protection from the scrutiny of inspections (Article 16).

These provisions permitted companies to deny requests for information and to deny access to stations, installations and equipment involved with mineral resource activities. It amounted to a potential diminishing of two cornerstones of the Antarctic Treaty, the free exchange of information and the free access to any or all areas of Antarctica for observation and verification of compliance. It also had potential implications for the Antarctic Treaty's practical value to world peace as a precedent for international arms control verification regimes.

The task of compliance monitoring of operators, which was entrusted to the relevant Regulatory Commission (Article 52), thus had the potential of being compromised due to the high economic stakes involved. The

sponsoring states were in a potential conflict of interest situation in monitoring of their own national companies. The property rights of operators were also to be guaranteed through the approval of a management scheme which was to be the equivalent of an authorization for an expeditious issuance of an exploration permit by a Regulatory Committee. This was to bestow "exclusive rights to the Operator to explore...[and] to develop the mineral resource or resources" in question (Article 48).

Liability for Environmental Damage

The liability and responsibility for environmental damage proposed under CRAMRA was to be limited and was to be subject to further development by the regime's institutions. Absolute and unlimited liability acts as an incentive to companies to act responsibly in the fragile Antarctic environment, to assess accurately the environmental risk of operating in a geographically remote and isolated region, and to take account of the harshest weather on Earth. The regime made companies "strictly liable" for any damage to the Antarctic environment caused by their operations (Article 8); but the word "strictly" was left undefined. Environmental groups saw a potential loophole for companies to claim limited liability if an approved exploration/development application (including the environmental impacts assessed in it) were proved to be wrong subsequently.[81] The *de facto* limitation on liability was further underscored by the somewhat narrow definition of what constitutes "damage" to the Antarctic environment. It involved "any impact on the living or non-living components" of the environment, but the damage must also have exceeded "that which [was] negligible or which ha[d] been assessed and judged to be acceptable" to CRAMRA (Article 1 [15]). In light of the paucity of available information on Antarctic ecosystems and the myriad of potential environmental risks of mineral resource activities, companies were advantageously placed to claim defences to strict liability.[82] The

Commission was nevertheless empowered to negotiate further additional rules and procedures through a Protocol (Article 8[7]). But the extremely contentious nature of the liability issue at the CRAMRA negotiations, in particular the reluctance of potential sponsoring states (West Germany, the US, Japan) to force companies to accept unlimited liability[83] and to accept any residual liability themselves, as advocated by Australia,[84] did not enhance the prospect of a consensus being achieved subsequently on the Commission.

VII. Conclusion

The Antarctic continent has traditionally been perceived as a *sui generis* geographic region with distinct geo-climatic and physical characteristics, and a governing regime, the ATS, which has insulated it from problems of the global system.[85] In many respects Antarctica is a special region, in terms of its geographical remoteness, unique climate, lack of an indigenous population and internationally recognized attributes of statehood. Its governing regime has been successful as a conflict-prevention mechanism. But Antarctic politics are inextricably linked to other global issue-areas. As the negotiations for the formation of the regime to regulate Antarctic minerals resource development examined in this chapter have revealed, the Antarctic policies of states were considerably affected by the overall climate of international relations, and the saliency of issue-areas prevalent during the 1970s and early 1980s (energy, minerals, and security) which were inextricably linked to domestic issues. Within the broader foreign policy context, the need for an Antarctic minerals regime was generated by the dominant perceptions, interests, priorities, assumptions and values of the ATCPs of the period. At one level, interest in and access to Antarctic minerals was stimulated by the economic and strategic concerns involving energy, minerals and security issues. Environmental concerns such as the compatibility of

mining operations with a fragile ecosystem, were either insufficiently important or were down-graded. States prioritize their interests in regimes according to domestic and international imperatives at any particular time.

In spite of the pervasive secrecy of the CRAMRA regime negotiations, an analysis of the relevant factors influencing the negotiations provides insights into their highly contentious nature. The CRAMRA negotiations were influenced by the complex interaction of domestic and international factors. One of the primary outcomes of this interaction, as far as the Western industrialized ATCP states were concerned, was the need to diversify and expand sources of supply of strategic oil and mineral resources with guaranteed access to satisfy domestic demands for such resources, and to prevent economic dislocations at a time of global resource scarcities and the enhanced power of suppliers. This was also linked to the maintenance of the high living standards of Western states. Other economic motives involved providing opportunities for companies to operate in a secure legal environment and to take advantage of advances in offshore technologies.

The dominance of economic interests in the CRAMRA negotiations can also be attributed to the influential role played by ideologies, political parties and pressure groups in the domestic politics of Western ATCP states prior to and during the CRAMRA negotiations. Within the Antarctic minerals context, ideological orientations of ATCP states were shaped by the world-views of governments, especially with regard to humanity's relations with the natural environment. In particular, the issue involved the fundamental question of whether Antarctica was to be exploited for human benefit or protected as an international wilderness for its intrinsic value. Ideological orientations have considerable significance for the perceptions of national interests. In the case of Antarctica, the pro-development orientation of governments (especially of the US and the UK) was instrumental in maintaining interests in regime formation, despite

unfavourable market conditions for oil and minerals after 1982. Significantly, the CRAMRA regime formation resulted in a degree of ideological coalescence between the US and the Soviet Union in terms of its utilitarian orientation, in large part due to the latter's domestic requirements and attitudes to the environment.

The CRAMRA regime formation process also revealed a major dichotomy in values, attitudes and assumptions between what has been termed the "technocentric" perspective, as represented by the policy option preferred by the ATCPs, and an "ecocentric" perspective, as represented by the World Park option proposed by NGOs.[86] The technocentric philosophy involved giving priority to Antarctica's economic value as a reservoir of urgently needed natural resources. This was to be facilitated by advances in polar science and technologies in the context of emergent global scarcities of resources. The technocentric worldview also is opposed to the "common heritage of mankind" perspective as advocated by the developing country coalition. The latter concept, as articulated at the UN during the 1980s, had as its primary focus the utilization of Antarctic resources and a wider distribution of its benefits. The ecocentric worldview proposed giving weight to Antarctica's intrinsic non-consumptive values, with complete protection to the continent's wildlife. The proponents of this view had serious doubts about the conduct of "environmentally acceptable" mining operations in a fragile ecosystem with potential irreversible impacts.

Pressure groups influenced the CRAMRA regime formation process. However, such groups differed considerably in their profiles, strategies, goals and influence, and their participation was restricted to the open polities of Western ATCP states. Environmental NGOs which advocated the AWP option had the highest visibility compared with oil and mining industry interest groups and scientific groups. Nevertheless, environmental NGOs for the most part failed to influence ATCP governments before and during the CRAMRA negotiations due to the low saliency of

environmental issues at the time and the largely closed and specialized nature of Antarctic policy-making. The general climate of international relations of the 1978-84 period gave priority to energy, mineral, strategic and security issues, and this favoured industry pressure groups. It provided opportunities for them to pursue their interests by pressuring governments. Moreover, the governments of the US and the UK in particular, with their pro-development ideological orientations, were receptive to proposals from the oil industry for guarantees on proprietary rights.

The CRAMRA negotiations were not affected to any significant degree by public opinion, even in the open polities of Western ATCP states. In fact public awareness of regime negotiations was low in most ATCP states. Although consultations with interest groups were conducted in a few ATCP states, Antarctic minerals development did not become an issue on domestic public agendas nor electoral campaigns. Thus, the minerals negotiations were conducted in a vacuum of public awareness. This allowed for considerable governmental discretion in the interpretation of national interests and in the of making policy choices.

Perceptions of national prestige and interests in Antarctic minerals were largely shaped by speculation about the continent's resource potential. Although the Antarctic Treaty management regime was created as a barrier to the spill-over effects of the competitive drives of the global geo-political, geo-strategic and economic systems in Antarctica, the anticipation of commercial exploitation introduced elements of these competitive drives into the behaviour of states. The Antarctic Treaty has established a regime for maintaining the continent as a zone of peace and international scientific cooperation. The constraints on competitive state behaviour imposed by this regime were loosened as a result of the decision by the ATCPs to utilize Antarctica's potential mineral resource. The attribution of high levels of national prestige to resource extraction made the negotiation of effective environmental safeguards difficult in the face of state behaviour designed to attain competitive advantages.

The CRAMRA negotiations also showed that regime formation is influenced by a complex nexus of domestic and international politics. States are not unitary actors reacting to pressures from only the international system. They are also influenced by the interaction of domestic and international factors. These include access to and expansion of foreign supplies of resources; role of ideologies, political parties and leaders, pressure groups, public opinion, and bureaucracies; and factors of national prestige involving economic prosperity, scientific and technological capabilities.

The weaknesses of CRAMRA identified above, were to gain acceptance among the domestic publics of the Western ATCP states in the post-1988 period. This coincided with the general rise in salience of environmental issues at the local, national and international levels. Following the *Bahia Paraiso* and *Exxon Valdez* oil spills in 1989, public opinion, mobilized by environmental groups, compelled the governments of Australia and France to review their support for CRAMRA. The growing importance of the "green vote" in the electoral processes and the emergence of Green Parties as influential actors in the politics of both countries were significant factors in the decision by both governments to refuse ratification of CRAMRA.[87] In rejecting CRAMRA they jointly challenged the assumptions underlying the regime by claiming that "mining in Antarctica is not compatible with protection of the fragile Antarctic environment."[88] Within the ATS context both Australia and France as claimant states were also well placed to influence the entry into force of CRAMRA - both had been effectively granted a veto by the requirement that all claimant states needed to approve CRAMRA for its entry into force (Article 62). This engendered the process of enhancing the effectiveness of the environmental protection mechanisms under the ATS giving priority to Antarctica's intrinsic values which culminated in the negotiation of the Madrid Protocol.

Nevertheless, this process proved contentious in view of the

reluctance of some ATCPs, especially the US to give up the mining option. Within the US government itself sharp divisions emerged between the executive and legislative branches. Although the US Congress had refused to ratify CRAMRA, prohibited American companies or citizens from engaging in, financing or providing assistance to any Antarctic mining activities,[89] and called on the Bush Administration to negotiate a new comprehensive environmental regime including an indefinite ban on mining,[90] some agencies of the executive branch strenuously opposed a long-term mining moratorium.[91] This was largely conditioned by the US' historic interest in obtaining access to any mineral resources found in Antarctica. The US stand during the Protocol negotiations made this evident: due to Washington's opposition only a 50-year moratorium on mining was established; and the requirement in the amending formula for a consensus among the ATCPs to lift this ban after 50 years was abandoned for a three-fourths majority of current ATCPs (Article 25).[92] Nevertheless, the pressure on the Bush Administration to agree to some form of ban had been steadily mounting in the run-up to the Protocol negotiations as a result of the actions of legislatures of other ATCP states (namely, Australia, New Zealand, Belgium and Italy) to either prohibit Antarctic mining activities by their nationals and companies or withhold ratification of CRAMRA.[93] This pressure intensified during the Protocol when the UK, Japan and Germany decided to abandon their long-standing support for the regime leaving the US isolated.[94] Thus the Bush Administration's reluctant acceptance of a mining ban marked a major reversal in US Antarctic policy as well as in the fortunes of a regime that had unanimous support among ATCP governments throughout the period of its negotiation.

Notes for Chapter 8

1. This approach was best exemplified in the comments made by Dr. Laurence Gould, the chairman of the US IGY National Antarctic Committee and a geologist with hands-on experience of Antarctica in his testimony in support of the Senate ratification of the Treaty: "I would not give a nickel for all the mineral resources I know in Antarctica. The point is that we don't know, and to predicate a program or presume that vast resources are there is nonsense. We haven't examined one percent of the area geologically. We have only scratched the surface of our ignorance. So that for many years to come, perhaps as many as thirty years, the most important export of Antarctica is going to be scientific data." See comments of Dr. Laurence M. Gould in United States. Congress. Senate Committee on Foreign Relations (1960), *The Antarctic Treaty*, Hearings (CIS No. 1403-14), 86th Cong., 2nd Sess., p. 74.

2. See comments of leading Antarctic policy-makers of the early 1960s: G.I. Tunkin, head, Contractual Law Department, Soviet Foreign Ministry and a Soviet negotiator of the Antarctic Treaty in Tunkin (1960), "An Example of International Co-operation" in *International Affairs* [Moscow] No. 2, p. 42; See also "Remarks Following a Meeting With Members of the Antarctic Policy Group" (May 20, 1965) in *Public Papers of the Presidents of the United States: Lyndon B. Johnson*, Book I (1965), p. 564.

3. New Zealand Foreign Affairs Review (1978), "New Zealand and the Antarctic Treaty: Address by the Right Hon. B.E. Talboys, Minister of Foreign Affairs to the New Zealand Antarctic Society, Wellington, 26 April" Vol. 28, p. 32.

4. Ibid.

5. Recommendation 5 in Elliott [ed] (1974), *Proceedings of the Second World Conference on National Parks, Yellowstone and Grand Teton National Parks, U.S.A., 1972*, pp. 443-4.

6. Recommendation VII-6 in "Report of the Seventh Antarctic Treaty Consultative Meeting, Wellington, 1972" in *Polar Record* Vol. 16 (1973), p. 607.

7. *New York Times* (1973), "Russians Will Help U.S. in Drilling Sea's Floor" March 23, pp. 1; 74.

8. Initial media reports suggested that 45 billion barrels of oil and 115 trillion cubic feet of natural gas could be recovered from the continental shelf of west Antarctica. *Wall Street Journal* (1974), "Frozen Assets? Now, the Energy Crisis Spurs Idea of Seeking Oil at the South Pole" February 21, pp. 1; 27.

9. Comment by Steven J. Burton (US Department of State) in United States. Congress. Senate. Committee on Foreign Relations (1975), *U.S. Antarctic Policy*, Hearing, May 15, 94th Cong., 1st Sess., p. 16. See also United States. Department of State (1975), *Digest of United States Practice in International Law*, pp. 110-11.

10. *New Zealand Foreign Affairs Review* (1975), "Prime Minister's Press Conference Following Cabinet: Eighth Antarctic Conference, 9 June" Vol. 25, pp. 63-5.

11. *New Zealand Foreign Affairs Review* (1978), p. 33.

12. *Science* (1977), "Science in Europe/Moratorium Set on Antarctic Oil at October Meeting" Vol. 198, p. 711.

13. Testimony of R. Tucker Scully (US State Department) in United States. Congress. House of Representatives. Committee on Science and Technology (1979), *U.S. Antarctic Program*, Hearings (No. 51), May 1 and 3, 96th Cong., 1st Sess., p. 38.

14. See annexed "Statement by Dr. Robert E. Hughes, US Representative, Eighth Antarctic Treaty Consultative Meeting, 12 June 1975" in Heg (1976), "Antarctic Treaty: Eighth Consultative Meeting" in *Antarctic Journal of the United States* Vol. 11, p. 8.

15. See preamble to Recommendation VIII-14 in *SCAR Bulletin* (1976), "Report of the Eighth Antarctic Treaty Consultative Meeting" No. 53 in *Polar Record*, p. 227.

16. Ibid., p. 203. See also statement of Dr. Dixy Lee Ray, US Assistant Secretary of State in US Congress. Senate. Committee on Foreign Relations (1975), pp. 6-7.

17. See Recommendation VIII-8 in *SCAR Bulletin* (1976), p. 222.

18. Roberts (1978), "International Cooperation for Antarctic Development" in *Polar Record* Vol. 22, pp. 111; 112.

19. The sensitivity of the minerals issue was highlighted by at least two developments at ATCMs. Firstly, the 1972 Wellington ATCM decided to reiterate the practice of classifying all documents of ATCMs unless otherwise decided at a Consultative Meeting. See *Polar Record* (1973), p. 600. Secondly, the 1976 Special Preparatory Meeting which dealt ad hoc with the minerals issue did not issue either a press communique or a report.

20. Although there was a general reticence on the part of all ATCPs to publicly discuss the sovereignty issue, particularly with respect to mineral resources due to its divisive nature and due to the general confidentiality that pervaded ATCMs, some diplomats expressed their states' national aspirations on the issue. Perhaps the strongest public pronouncement on claimant aspirations was made by Arthur Watts, leader of the UK delegation, Antarctic mineral negotiations (1982-88), in his private capacity at an Antarctic symposium in 1983:

> [T]he sovereignty claims made by a number of States are very real. They are a fact of political life and they will not go away. They are, I would emphasize, claims that have existed for many years: they are not just claims which are being, if you like, invented for the occasion. They have existed for well over half a century in some cases, and the origins often go back further than that. They have got to be taken into account in any solution that we may reach in negotiating a minerals regime: the solution must in some substantial way recognize the position of those States which assert sovereignty in Antarctica...it seems to me absolutely fundamental, if there is to be a successful regime, there must be some substantial recognition of the position of the States asserting sovereignty.

See Watts (1984), "Discussion" in Wolfrum [ed], *Antarctic Challenge: Conflicting Interests, Cooperation, Environmental Protection, Economic Development: Proceedings of an Interdisciplinary Symposium, June 22-24, 1983*, p. 221.

Australia's demands included: an influential role in minerals management in the Australian Antarctic Territory; strict environmental protection at all stages of activities; economic benefits as a *quid pro quo* for derogation of sovereignty; an institutional structure minimally adequate for the regime's purposes; equal access for Australian operators; and a regime providing operational efficiency and security of tenure for operators. John Kerr, Department of Resources and Energy and a member of the Australian Delegation to minerals negotiations, 1984-5 in Kerr (1986), "Energy and Mineral Resources in Antarctica: The Next Frontier" in *Mining Review* [Australia] September, p. 12.

21. United States. Department of State (1982), *Final Environmental Impact Statement on the Negotiation of an International Regime for Antarctic Mineral Resources*, pp. 1-5; 2-5-2-6.

22. See "RPS-10: Antarctic Mineral Resources: Document Presented By the United States Delegation: Antarctic Treaty Special Preparatory Meeting, Paris, 1976" in United States. Congress. Senate Committee on Foreign Relations (1978), *Exploitation of Antarctic Resources*, Hearing, February 6, 95th Cong., 2nd Sess., p. 115.

23. The Soviet position on minerals prior to 1981 called for a mining moratorium citing the environmental risks involved and emphasized the need for scientific studies before any decisions on the formation of a mineral regime was taken. See "Union of Soviet Socialist Republics: Statement by Professor Y.I. Tolstikov" in United States. Department of State (1979), *Antarctic Treaty: Report of the Tenth Consultative Meeting: Washington, D.C. September 17-October 5* , p. 83.

24. Testimony of John Negroponte, US Deputy Assistant Secretary of State for Oceans and Fisheries Affairs in United States. Congress. Senate. Committee on Energy and Natural Resources (1979), *U.S. Activities in Antarctica*, Hearing, April 23 (S. Hrg. No. 96-21), 96th Cong., 1st Sess., p. 35.

25. Recommendation IX-1 (4)-(6) in United Kingdom. Foreign and Commonwealth Office (1977), *Antarctic Treaty: Report of the Ninth Consultative Meeting, London 19 September-7 October, 1977*, pp. 12-13.

26. The agreed upon attributes included rules for: (1) environmental impact assessment that would facilitate informed decision-making; (2) determining if mineral resource activity would be acceptable; and (3) regulating the ecological, technological, political, legal, and economic aspects of approved mineral activities including, rules for environmental protection. Recommendation X-1 in United States. Department of State (1979), pp. 12-13.

27. See Recommendation XI-1 in Argentina. Ministry of Foreign Affairs and Worship (1981), *Antarctic Treaty: Report of the Eleventh Consultative Meeting, Buenos Aires*, pp. 19-21.

28. See "Convention on the Regulation of Antarctic Mineral Resource Activities" in *International Legal Materials* Vol. 27 (1988), pp. 868-900.

29. The only documents publicly available on the negotiations was a series of draft texts of CRAMRA personally drafted by the Chairman of the negotiations, Ambassador Christopher Beeby (New Zealand). Known as the "Beeby Texts," they were however not released as official documents and no ATCP government formally commented on them but they apparently had served

as informal working documents. Moreover, only two of the four "Beeby Texts" were widely available and both were disseminated by NGOs monitoring the closed-door talks. See *ECO* (1983), "Antarctic Minerals Regime: Beeby's Slick Solution" Vol. 23 (1), pp. 1-16; *ECO* (1984), "Antarctic Minerals Negotiations Continue: Beeby II-The Slick Solution" Vol. 27 (1). The decision to make publicly available the documents pertaining to the Fourth Special Consultative Meeting on Mineral Resource Activities was taken only in October 1991.

30. United States. Department of State (1982), p. 2-7.

31. Comments of Nobitoshi Akao, an official of the Japanese Ministry of Foreign Affairs. See Akao (1983), "Rescurces and Japan's Security" in Akao [ed], *Japan's Economic Security*, pp. 16-7.

32. *Daily Telegraph* [London] (1979), "Antarctic Oil Hunt" September 6, p. 4.

33. Australia, UK and Norway were the only net energy exporters among the ATCP states. Despite potential negative market impacts for domestic supplies, Australian energy officials perceived favourably the development of potential Antarctic oil and hydrocarbons. Kerr (1986), p. 12.

34. See observations of Arthur A. Meyerhoff, a consultant to the USSR Ministry of Oil Industry in the 1970s in Meyerhoff (1983), "Soviet Petroleum: History, Technology, Geology, Reserves, Potential and Policy" in Jensen, Shabad and Wright [eds], *Soviet Natural Resources in the World Economy*, pp. 306-62.

35. *Times* [London](1981), "Why the Russians are Boring Into the Ice Cap" January 21, p. 14.

36. See "Republican Party Platform: July 15, 1980" in Congressional Quarterly (1981), "Historic Documents of 1980," p. 618. The practical application of this belief system was evident in the partial repeal of the network of US environmental regulations, lax enforcement of pollution laws, policies advocating maximum development of resources including oil development in ecologically-sensitive regions (e.g. Arctic National Wildlife Refuge, Alaska) and cut-backs in the funding and personnel of regulatory agencies. For a review of the Reagan environmental policy and its underlying ideology, see Vig and Kraft [eds] (1984), *Environmental Policy in the 1980s: Reagan's New Agenda*.

37. E.g., the US Departments of the Interior and the Treasury warned the State Department against excessive environmental impact assessment regulations that would drive up the operating costs of US companies; scrutinize individual applications by centralized institutions; place burden of proof on the explorer/developer to furnish data demonstrating the environmental acceptability of proposed projects; and require pre-exploratory gathering and sharing of data. United States. Department of State (1982), pp. D20-1; D28-9.

38. See "Statement on United States Actions Concerning the Conference on the Law of the Sea" (July 9, 1982) in *Public Papers of the Presidents of the United States: Ronald Reagan*, Book II (1982), pp. 911-12. A British Foreign Office Under-Secretary also claimed that the Law of the Sea Convention was "based on undesirable regulatory principles" and did not "encourage the private sector" due to its production controls and the transfer of technology requirements. See comments of Under-Secretary for Foreign and Commonwealth Affairs (Malcolm Rifkind) in United Kingdom.

Parliament. House of Commons (1982), *Parliamentary Debates Hansard*, December 2, 6th Series, 48th Parl., 3rd Sess., Vol. 33, cols. 404-10.

39. "Statement by Deputy Press Secretary Speaks on United States Antarctic Policy" (March 29, 1982) in *Public Papers of the Presidents of the United States: Ronald Reagan*, Book II (1982), pp. 392-3.

40. See United Kingdom. Natural Environment Research Council (1989), *Antarctica 2000: NERC Strategy for Antarctic Research*, pp. 3; 9.

41. *Times* [London] (1989), "Australia Blocks Antarctic Mining Operations" May 23, p. 2.

42. Greenpeace International (1987); "The World Park Option for Antarctica"; Suter (1980), *Antarctica: World Law and the Last Wilderness*.

43. John Garrett, Chairman of the Crude Oil Economics Committee of Gulf Oil Corporation who served on the US State Department's Antarctic Advisory Committee was quoted in 1981 as saying that it was more economic for the company to synthesize liquid from shale or coal than to extract oil from Antarctica. *Wall Street Journal* (1981), "South Pole Scientists Hope to Freeze Out Commercial Projects" January 7, p. 19.

44. Michel T. Halbouty (Chairman, Michel T. Halbouty Energy Company, a Houston-based independent oil company), an advisor to former President Reagan and founder of the Circum-Pacific Council for Energy and Mineral Resources, an oil industry lobby organized an Antarctic leg for the US Geological Survey ship *S.P. Lee* in anticipation of the data benefits that companies would derive from it in their long-range planning. *Christian Science Monitor* (1983), "*Operation Deep Sweep* Sails Off to Search Beneath the Sea" Vol. 75, August 3, p. 10.

45. Kerr (1986), p. 13.

46. Oil executive Michel Halbouty described Antarctica as the oil industry's "last honest-to-goodness oil frontier." Quoted in *Wall Street Journal* (1985), "Polar Predicament: If Antarctic Oil Search Is a Success, Pollution, Discord May Follow" December 9, p. 14.

47. However, some ATCP governments did consult with environmental NGOs prior to the CRAMRA negotiations. The most notable consultative process was undertaken by the US Department of State through its Advisory Committee on Antarctica and by the inclusion of a NGO representative as public interest advisor to US delegations to the CRAMRA talks. Author interview with Raymond Arnaudo (US Department of State), March 19, 1982. The practice of including NGO representatives on national delegations was also adopted by the Australian and New Zealand governments. Although they were entitled to participate in delegation meetings, receive copies of briefing papers and express views within the delegation, NGO members did not have the right to speak at ATCMs.

48. See "Panel Discussion on Nonliving Resources: Remarks by Roger Wilson" in United States. Polar Research Board (1986), *Antarctic Treaty System: An Assessment: Proceedings of a Workshop Held at Beardmore South Field Camp, Antarctica: January 7-13, 1985*, p. 285.

49. A typical governmental response to the preservationist option for Antarctica questioned the uncertainties about the content and implications of the world park concept without addressing its environmental merits. See answer by Bill Hayden, Minister for Foreign Affairs in Australia.

Parliament. House of Representatives (1983), *Parliamentary Debates: Weekly Hansard*, No. 9, 33rd Parl. 1st Sess., Oct. 4, p. 1321.

50. Greenpeace International (1987), p. 4.

51. For a summary of the assessments of petroleum resources carried out in the 1970s and 1980s that stimulated these perceptions see Behrendt (1990), "Recent Geophysical and Geological Research in Antarctica Related to the Assessment of Petroleum Resources and Potential Environmental Hazards to Their Development" in Splettstoesser and Dreschhoff [eds] *Mineral Resources Potential of Antarctica*, pp. 163-74.

52. Observation of Chilean geologist Oscar Gonzalez-Ferran. Gonzalez-Ferran (1983), "Geological Data and its Impact on the Discussion on a Regime for Mineral Resources" in Orrego Vicuña [ed], *Antarctic Resources Policy: Scientific, Legal and Political Issues*, p. 160.

53. Australian Minister for Science, Barry Jones, quoted in *Australian Foreign Affairs Record* (1985), "Australia to Increase Antarctic Research" Vol. 56, p. 903.

54. *Australian Foreign Affairs Record* (1984), "Australia and Antarctic Resources: Urgent Action Required: News Release Issued by the Minister for Science and Technology, Mr. Barry Jones, MP, on 8 August" Vol. 55, p. 876.

55. *Daily Telegraph* [London] (1984), "Antarctic Survey Goes Back to S. Georgia" January 31, p. 12.

56. E.g., environmentalists (e.g Sir Peter Scott, chairman, World Wildlife Fund) allegations that Australia, Japan, West Germany and France had violated the moratorium were denied by the first three. See *Australian Foreign Affairs Record* (1983), "Australia Not Exploiting Antarctica: News Release Issued by the Minister for Science and Technology, the Hon. David Thomson, on 26 January" in Vol. 54, p. 53; similarly the seismic survey activities of vessels (e.g. the *S.P. Lee* for the US Geological Survey and the *Hakurei Maru* for the Japan National Oil Corporation in the 1980s) proved controversial in light of the "voluntary restraint" policy on mineral exploration. See comments of NGO representative Wilson in United States. Polar Research Board (1986), p. 286.

57. "Opening Address" by Leo Tindemans, Minister of External Relations of Belgium in Kingdom of Belgium. Ministry of Foreign Affairs (1986), "Antarctic Treaty: Final Report of the Thirteenth Antarctic Treaty Consultative Meeting: Brussels 7-18 October" p. 112. Previously in 1967 Belgium had closed its *King Baudouin* base in Antarctica.

58. See "Opening Address: Poland, Dr Jan Bogutyn" in Australia. Department of Foreign Affairs (1984), *Antarctic Treaty: Report of the Twelfth Consultative Meeting, Canberra, 13-27 Sept. 1983*, p. 89.

59. Argentina. Instituto Antartico (1993), "Demografia Antartica Argentina" (information on births registered in Argentine Antarctic Territory, provided by Argentine Embassy, US); *Nature* (1986), "Antarctic Treaty: Argentina Expands Research Effort" Vol. 319, p. 166.

60. See *New York Times* (1984), "Chilean Families Begin Colony on Antarctica," December 4, p. A17. Argentina's seat of government was temporarily moved from Buenos Aires to its *Marambio* base in its claimed Antarctic sector for a visit by President Raul Lastiri and his Cabinet in 1973, a symbolic gesture designed to reassert the country's sovereignty to

the continent. *New York Times* (1973), "Argentina's Capital: A Polar Island" August 11, p. 7.

61. For a record of Antarctic scientific research stations established see, May [ed] (1989), *The Greenpeace Book of Antarctica: A New View of the Seventh Continent*, pp. 178-81; and generally Headland (1989), *Chronological List of Antarctic Expeditions and Related Historical Events*.

62. In the words of an US official, "[t]he pole is highly symbolic. By being here we maintain our status as first among equals of the treaty nations and prevent the Soviets from grabbing our base." Bernard Lettau (US National Science Foundation) quoted in *Time* (1982), "Scramble on the Polar Ice: Conflicting Claims Could Stir a Battle for Antarctic Riches" Vol. 119 (8), Feb. 22, p. 65.

63. *New Zealand Foreign Affairs Review* (1985), "Antarctica: Cooperation With Sweden, Italy" Vol. 35 (2), p. 42.

64. *Times* [London] (1987), "Angry Lange Hits Back Over Flights to American Base" April 14, p. 8. However, the New Zealand government in 1987 exempted from its proposed nuclear-free zone legislation US aircraft using the Christchurch base under an advance blanket clearance invoking the base's benefits to its Antarctic program and to the New Zealand economy.

65. See testimony of Dr. Peter Wilkniss (National Science Foundation) in United States. Congress. Senate. Committee on Foreign Relations (1990), *Antarctica Legislation: S. 2575; S.J. Res. 206 and S. Res. 186*, Hearing (S. Hrg. 101-1025), July 27, 101st Cong., 2nd Sess., p. 34.

66. Article 5 (3) merely attempts to define the "deep seabed" as the "seabed and subsoil beyond the geographic extent of the continental shelf as the term continental shelf is defined in accordance with international law," i.e. in reference to Article 76 of the proposed Law of the Sea Convention.

67. In effect CRAMRA incorporated elements of the "precautionary principle" which is an emerging principle of international environmental regime formation and policy. As already seen in Chapters 6 and 7, the precautionary principle has already been applied to Antarctic marine living resource conservation in the implementation of the ecosystem standard under the CCAMLR regime; but states have been slow to accept this principle which essentially attempts to limit their freedom of action that can threaten the environment by giving priority to the need to consider the ecological risks of proposed activities, including the conduct of prior environmental impact assessments.

68. See Antarctic and Southern Ocean Coalition (1988), "Analysis of the Convention on the Regulation of Antarctic Mineral Resource Activities" ASOC Information Paper-4, pp. 4-5.

69. Management schemes (which were to be drawn up by the sponsoring state, any claimant of the areas in question and a few other states) were to constitute some of the most crucial issues in Antarctic minerals activities, including environmental protection, response action to accidents, monitoring and inspection, liability, resource conservation, financial guarantees, insurance, enforcement, confidentiality, etc.

70. *ECO* (1988), "The Balance of Mineral Power" Vol. 48 (3), p. 1.

71. Ibid.

72. Auburn (1990), "Convention on the Regulation of Antarctic Mineral Resource Activities" in Splettstoesser and Dreschhoff [eds], *Mineral Resource Potential of Antarctica*, p. 262.

73. Ibid., p. 263. See also Antarctic and Southern Ocean Coalition (1988), pp. 5-6.

74. Antarctic and Southern Ocean Coalition (1988), pp. 5; 19-20.

75. The disparities in the South-South dimension were in part apparent in the participation of the relatively economically- and technologically-capable states (Argentina, Chile, India, Brazil, China and Uruguay) in the CRAMRA negotiations.

76. In the Treaty regime the original 12 signatories were exempt of the requirement of "demonstrat[ing] [their] interest in Antarctica by conducting substantial research activity there, such as the establishment of a scientific station or the despatch of a scientific expedition." (Article IX [2]) This exemption from maintaining a scientific station has allowed some original ATCPs such as Belgium and Norway to close down their bases without forfeiting Consultative status.

77. There was to be some possibility of access to technology by developing countries in terms of a vaguely defined provision involving "training programs related to scientific, technical and environmental matters bearing on Antarctic mineral resource activities, and of opportunities for cooperation" between ATCPs and developing countries (Article 26 [4 & 6]). But these were conditional on meeting the membership criteria of the Commission.

78. This fear was already evident in the some of the same countries' refusal to sign the Law of the Sea Convention.

79. The issue of guaranteeing proprietary rights including the confidentiality of commercial data and information was an issue articulated far less publicly by ATCP governments and diplomats in the 1980s as it would have enhanced the NGO arguments questioning the necessity of a minerals regime for Antarctica on grounds that a regime by providing stable investment conditions needed to undertake costly development in a region with no internationally recognized sovereignty, potentially compromised environmental protection. Author interviews with Susan Sabella, Legislative Coordinator, Antarctica Campaign, Greenpeace-US, March 20, 1992 and with Beth Marks, The Antarctica Project-US, March 18, 1992.

80. United States. Congress. Office of Technology Assessment (1989), *Polar Prospects: A Minerals Treaty for Antarctica*, Doc. OTA-O-428, p. 15.

81. Antarctic and Southern Ocean Coalition (1988), pp. 5; 23-4.

82. The paucity of available information on the Antarctic environment and the impacts of possible mineral resource activities was evident in the emphasis on the high level of unpredictability of such impacts and on the need for further research in a series of reports issued by SCAR scientists. See Zumberge [ed] (1979), *Possible Environmental Effects of Mineral Exploration and Exploitation in Antarctica*, pp. 47-50; Holdgate and Tinker (1979), *Oil and Other Minerals in the Antarctic: The Environmental Implications of Possible Mineral Exploration or Exploitation in Antarctica: Report of a Workshop, Bellagio, Italy, 5-8 March*, pp. 38-48.

83. See comments of New Zealand ASOC Representative Catherine Wallace in Wallace (1988), "The Antarctic Minerals Convention: Environmental Protection or Pre-condition for Development," Unpublished paper delivered to the *Policies on Ice*: A National Conference on New Zealand's Antarctic Policy Choices, p. 23.

84. Comments of Senator Gareth Evans (Minister for Foreign Affairs and Trade) in Australia. Parliament. Senate (1989), *Parliamentary Debates: Weekly Hansard*, No. 5, May 3, 35th Parl., 1st Sess., p. 1654.

85. Comment of Argentine Antarctic diplomat, Roberto E. Guyer. Guyer (1983), "Antarctica's Role in International Relations" in Orrego Vicuña [ed], p. 275.

86. For an elaboration of the dichotomy between the two worldviews see O'Riordan (1981), "Environmentalism."

87. *Christian Science Monitor* (1989), "Australia Advocates 'Wilderness' Status for Antarctica" May 24, p. 6; *Far Eastern Economic Review* (1989), "Greens Set the Pace: Conservationist Gain a Pivotal Role in Politics" Vol. 145 (28), July 13, pp. 25-6.

88. Australia. Department of the Office of the Prime Minister (1989), "Joint Statement on International Environmental Issues Agreed to by Prime Ministers Hawke and Rocard, Canberra, 18 August, 1989"; see also Australia. Department of the Office of the Prime Minister (1989), "Transcript of Joint News Conference With Senator The Hon. Gareth Evans Q.C. and Senator The Hon. Graham Richardson, Parliament House, 22 May, 1989."

89. see "Antarctic Protection Act (Public Law 101-594--Nov. 16, 1990)" in *United States Statutes at Large* Vol. 104 (1990), pp. 2975-8.

90. "Joint Resolution: Calling for the United States to Encourage Immediate Negotiations Toward a New Agreement Among Antarctic Treaty Consultative Parties, for the Full Protection of Antarctica as a Global Ecological Commons (Public Law 101-620--Nov. 16, 1990)" in *United States Statutes at Large* Vol. 104 (1990), pp. 3340-1.

91. The Economics Bureau of the Department of State was identified by Senator Al Gore as one of the agencies in the Bush Administration opposed to any mining ban based on environmental grounds. See United States. Congress. Senate. Committee on Commerce, Science and Transportation (1991), *Monitoring the Arctic and Antarctic Environments*, Hearing (S. Hrg. 102-556), May 13, 102nd Cong., 2nd Sess., p. 38.

92. *New York Times* (1991), "US Agrees to Protect Minerals in Antarctica" July 6, p. 5.

93. Australia. Parliament (1991), *Antarctic Mining Prohibition Act No. 43 of 1991*; New Zealand. Parliament (1991), *Protected Areas (Prohibition on Mining) Act*; and Belgium. Parliament (1989), *Loi modifant la loi du 12 janvier 1978 relative à la protection de la faune et la flore dans l'Antarctique*, 23 Octobre; and *ECO* (1989), "Tides of Change" Vol. LXXIV (2), p. 1.

94. See written answer by the Prime Minister, John Major in United Kingdom. Parliament. House of Commons (1991), Parliamentary Debates *Hansard*, May 10, 6th Series, 50th Parl., 4th Sess., Vol. 190, col. 604; see also "Japanese Proposal on Mineral Resource Activities" in Bush [ed]

(1993), *Antarctica and International Law: A Collection of Inter-State and National Documents: Part 1-Antarctic Treaty Regime: Documents and Reports: 1991*, Doc. AT22041991I, Booklet AT91AA, pp. 47-8; and "German Statement on Mineral Resource Activities," ibid., Doc. 23041991C, pp. 67-8.

Part IV Conclusions

Chapter 9 Conclusions

I. Antarctica in the Study of International Environmental Politics

The central thesis of this dissertation is that the Antarctic Treaty regime, which was created essentially as a conflict-prevention mechanism and which has been characterized by secrecy for most of its existence, has been transformed into one of the more effective environmental protection regimes due largely to the pressure exerted by a transnational coalition of environmental NGOs. This confirms the findings of recent studies about the growing role of non-state actors, especially environmental NGOs, in shaping environmental politics and policy at the local, national and international level.[1]

In the Antarctic context environmental NGOs have played a significant role in five ways:

* in shifting governmental attitudes and values on Antarctica and placing environmental issues high on the political agendas of the Antarctic Treaty states;
* in publicizing the nature and seriousness of the ecological impacts of ongoing activities and the risks of potential activities;
* in exerting pressure on governments to adopt more holistic policies that take account of the interconnected nature of ecological problems;[2]
* in establishing informal techniques of compliance-monitoring and enforcement through the development of independent scientific capabilities; and
* in influencing the drafting of international agreements through participation as observers, providing input to scientific or policy working groups and forming informal coalitions with "like-minded" states.

Since the early 1980s similar evidence of NGO influence in

environmental policy-making has been recorded in other issue areas such as commercial whaling, stratospheric ozone depletion, ocean disposal of wastes, the protection of sensitive marine areas from vessel-source pollution, the incineration of wastes at sea and the trade in endangered species (e.g. the elephant ivory trade).[3]

There is also evidence that Antarctic environmental issues are linked to global ones, and may warrant greater integration within the study of international environmental politics and policy. Although Antarctica has some unique characteristics (for example, its remoteness, isolation, extreme climate, lack of an indigenous population and of internationally recognized attributes of statehood), it has been the object of human curiosity and avarice from earliest times. In the modern era, the competitive drives of the global geopolitical and geostrategic systems have intensified the interests of nation-states in the frozen continent. Interest in Antarctic marine living resources (i.e., krill and ground-fish stocks), for example, was largely stimulated by the closure of free access to traditional global fishing grounds of the distant water fleets through the extension of coastal state jurisdiction in the northern continents. Similarly, interest in Antarctic oil and mineral resources was accentuated by the concerns of the industrialized states about global scarcities in strategic raw materials caused by world price increases. More recently, the increased awareness of the scientific and ecological importance of Antarctica for the global environment has prompted states to protect the region. Thus, the general academic treatment of Antarctica as a *sui generis* region of the world immune to the influences of international politics is grossly misleading. Moreover, in light of the increasing reorientation of Antarctic science towards enhancing human understanding of global processes vital to the sustenance of the Earth's environment, the frozen continent is no longer an esoteric field of study. Indeed, Antarctic environmental politics offers significant opportunities for the study of change and continuity in international environmental

regimes.

The imposition of a prohibition on mining in Antarctica, and the preservation of the continent as a global protected area giving priority to its intrinsic values (wilderness, aesthetic, and scientific) under the Madrid Protocol, mark a watershed in the application of new values to the design of regimes to govern the global commons (defined as natural systems and resources that belong to all living beings rather than to individual nations[4]). Although Antarctica has been spared the worst depredations of humanity by the Antarctic Treaty, other global commons continue to be polluted by various uses and activities open to all nations. The high seas, in spite of the UN Convention on the Law of the Sea (1982), is subject to competitive and irresponsible harvesting of living resources and disposal of toxic and hazardous wastes; the atmosphere is still used as a sink for emissions of dangerous chemical compounds (although this has been partially checked by the Montreal Protocol on Substances that Deplete the Ozone Layer); and outer space continues to be polluted by the debris from space expeditions. Thus, Antarctica may provide a model for the design of regimes for other global commons based on the application of new values under what some analysts have called the emergence of a sustainable development paradigm.[5] This paradigm assumes as a fundamental criterion of regime formation the fragility and interdependence of ecosystems, and considers human beings as part of nature. Inherent to this paradigm is the "precautionary principle"; it shifts the burden of proof for activities likely to affect environmental quality from those opposing such activities to the proponents through the establishment of procedures for systematic EIAs, public access to information and participation in decision-making. In the case of the Antarctic, the importance of the region's near pristine conditions for scientific research on global environmental problems such as ozone depletion and global warming were additional factors.

The Antarctic case also provides some understanding as to why regime formation in the Arctic is only now and rather belatedly receiving

attention. Although both polar environments have similar pristine and fragile ecosystems, the Arctic by virtue of its geographic proximity to populated regions and milder climate had been effectively albeit sparsely settled by the turn of the twentieth century, first by indigenous peoples and subsequently by European settlers and their successor states - the Arctic "rim" nations (Russia, the US, Canada, Denmark [i.e. Greenland], Finland, Iceland, Norway and Sweden). Thus unlike in the Antarctic "effective occupation" of land areas was not an issue. The only exception was the sovereignty dispute involving the archipelago of the Svalbard Peninsula; but this too was resolved by a limited international treaty.

However, due to the relative accessibility of natural resources (much of which were within national boundaries), in particular, the proximity to industries and markets, Arctic exploitation had been rendered economically feasible well before any substantial environmental awareness had developed. Nor was industrial and urban development in the region preceded by the acquisition of the necessary scientific knowledge; more often Arctic science has been viewed "only as a corrective measure after serious mistakes have made the need for such knowledge apparent."[6] But most importantly, the military and strategic importance of the Arctic has severely constrained cooperation in scientific research until the end of the Cold War enabled the negotiation of the Arctic Environmental Protection Strategy (AEPS) in 1991. The Arctic's role as a buffer zone during the Cold War gave scientific research in the region an applied-orientation linking it strongly to political, economic and military interests of states. This, according to one scientist, made

> international cooperation difficult; in certain geographic areas or fields of research cooperation becomes impossible when research findings are classified as sensitive or proprietary by governments or industrial firms. Even within a single country [A]rctic research issues may prove socially or politically sensitive. The research needed to resolve such domestic conflicts as the impact of industrial development on [A]rctic environments, or the impact of [W]estern influences on native culture and subsistence lifestyles, cannot fail to stir strong political controversy in the [A]rctic communities most concerned.[7]

Despite the end of the Cold War and the breakup of the Soviet Union which have improved the international climate for greater Arctic cooperation, the negotiations among Arctic "rim" states have yet to result in any comprehensive environmental treaty. In fact the Rovaniemi process, named after the Finnish initiative begun in 1989 which resulted in the AEPS, was marked by a lingering reluctance of states to give precedence to environmental issues over strategic and economic ones. This was evident in the failure of the 1991 Rovaniemi Conference to adopt a legally-binding instrument stemming from, among other factors, the desire of some states (especially the US) to avoid international checks on coastal state autonomy.[8] This has recently been underscored by the attitude of Russia towards environmental monitoring of what it admitted was illegal dumping and otherwise improper disposal of nuclear waste by it - and the Soviet Union before it - in its maritime zones in the Barents and Kara Seas; national strategic concerns have influenced Moscow to deny international scientific surveys access to potential radioactive dump sites.[9] The secrecy surrounding Arctic issues have also prevented NGOs from greater involvement and extensive media coverage of the negotiations. In this sense the emerging Arctic environmental regime could be less effective than the Antarctic one in its first twenty five years.

Reasons for the Rise of Environmental NGOs

The emergence of environmental NGOs as actors in the environmental policy arena is the result of a larger post-1945 global environmental movement, which incorporates citizen activists, pressure groups, green parties and intergovernmental organizations. Since the 1972 United Nations Conference on the Human Environment at Stockholm in particular, the environmental movement has expanded its activities in parallel with the growth in international environmental law and policy. Lynton Caldwell has observed that,

> The growth of the environmental movement to international and global proportions has been a historical development... Understood in its full context, it may be seen by subsequent generations as a major change-of-state in human affairs - an awakening of modern man to a new awareness of the human predicament on earth.[10]

Environmentalists perceive their expansion into the international arena as an attempt to balance the pursuit of national interests by states with "a much needed *global perspective* to the issues under consideration" in terms of emphasizing a long-term view of the rights of future generations.[11] The involvement of environmental NGOs in Antarctic environmental issues can thus be seen within this global context.

The broad network of environmental NGOs that developed interest in Antarctic issues in the late 1970s was constituted of groups mostly from the US and Western Europe. Those that initially became involved in Antarctica, such as the Sierra Club International and the Friends of the Earth, had strong roots in the environmental movement both on domestic conservation issues, such as wilderness preservation and energy policy development, as well as on global issues such as commercial whaling and nuclear disarmament.

The emergence and proliferation of environmental groups in Western countries has been attributed by scholars to a variety of sociological, economic and political factors.

Inglehart has attributed the growth of environmentalism to a fundamental intergenerational shift away from material values (involving security, economic stability and growth), to post-material values (involving environmental quality, democracy, justice and compassion) in advanced industrialized societies. The peace and prosperity of the post-1945 period, he argues, has spawned interest among a new generation in new values that affect the quality of life.[12] Milbrath has suggested that the sharp rise in public concerns about environmental degradation caused by industrial production has contributed to the emergence of citizen mobilization and ecological parties which espouse a new, more sustainable

society.[13] Rosenau has suggested that growing public concern about the ineffectiveness of states and governments in the implementation of policies, in combination with the growth in learning capacities of citizens and advances in communications technology, has strengthened the roles of environmental NGOs and other nonstate actors.[14]

Nevertheless, the capacities of NGOs to influence outcomes vary according to the issue area. The dominance of economic interests on such issues as global warming and climate change where industries face competitive disadvantages through the imposition of quotas on emissions of harmful greenhouse gases, especially carbon dioxide, has limited their ability to effect change. The necessary changes in national energy policies of the industrialized countries, in particular the United States, which would require massive shifts from the use of coal and oil to natural gas in the short term and to renewable sources in the long term, have met with considerable resistance from powerful industrial groups.[15]

The numerical presence of environmental NGO vis-à-vis industry observers in some international organizations can also determine the effectiveness of NGOs in strengthening environmental regimes. For example, it has been suggested that the near balance in the numbers of the two groups has contributed to the strengthening of the London Dumping Convention (LDC) with regard to incineration of wastes at sea and dumping of radioactive wastes. On the other hand the considerable asymmetry between industry and NGO observers at the Marine Environmental Protection Committee of the IMO has constrained the regime from adopting more stringent rules on controlling marine pollution. Moreover, the highly technical nature of marine pollution issues has not enabled environmental NGOs to generate publicity or media attention. The greater threats posed by issues dealt with by the LDC, such as dumping of radioactive wastes, incineration of wastes at sea, or the dumping of industrial wastes, have enabled such groups (e.g. Greenpeace International) to generate substantial media attention.[16] Moreover, there has been considerable

resistance from sections of the scientific community to the acceptance of a precautionary approach to ocean disposal of wastes as proposed by NGOs reflecting wider issues of conflicts of interests, value systems and problems inherent in the nature of scientific knowledge (i.e. high levels of uncertainty).[17] Thus, environmental NGOs face formidable obstacles in influencing policy processes in issue areas where industrial and scientific elite groups have traditionally been dominant.

In sum, the emergence of environmental NGOs can be attributed to an articulation of interests in environmentally-sustainable development by growing numbers of people in Western industrialized states who seek to change consumption patterns and lifestyles in recognition of the finiteness of the Earth's natural resource base, and to redefine and expand the arena of conventional politics. Such concerns, especially the ever-increasing demands of industrialized economies for oil and mineral resources, were also one of the reasons for the involvement of NGOs in Antarctic policy issues in view of the plans by governments to exploit the continent's resources.

State-NGO Relations

At the international level, the failure of governments to exercise leadership on environmental issues, especially with regard to the implementation of international policies, has allowed environmental NGOs to assume a special unofficial role in compliance-monitoring and enforcement. This role which is based on data-collection and awareness-building, has been particularly effective in regimes pertaining to the international commons such as commercial whaling and Antarctica. Environmental groups have demonstrated that the constraints inherent in the international system, especially the problems involving the sovereignty of states and their frequent reluctance to criticize one another, could be partly overcome through the development of independent

capabilities to monitor state compliance. The end of the Cold War and the political changes in Eastern Europe and the Soviet Union which have lessened strategic competition among states, have also allowed NGOs to push environmental issues to the top of the international political agenda.

States have been slow to recognize a more formal role for environmental NGOs in the implementation of international environmental agreements. However, the seriousness of the environmental crisis in recent years has prompted several authorities, both official and unofficial, to propose a more formal or meaningful role for environmental NGOs. The 1987 report of the World Commission on Environment and Development recommended that in all relevant IGOs, governments establish or strengthen procedures for official consultation with NGOs.[18] A report commissioned by the United States Congress in 1992 also proposed that environmental groups should be accorded a more formal role in enhancing the effectiveness of international environmental agreements.[19]

The 1992 UNCED Summit, attended by the representatives of 178 states (including 114 heads of state or government), recognized that NGOs play a "vital role in shaping and implementation of participatory democracy" and that they are well-qualified "partners in the implementation of Agenda 21."[20] The independence of NGOs was considered a major attribute that should be guaranteed to enable effective participation. Agenda 21 recommended that the UN system initiate a process to formalize the involvement of NGOs at all levels including policy design, decision-making, implementation and evaluation of programs. In particular, it was recognized that the independent fact-finding and reporting systems of NGOs should be institutionalized within the UN to enhance the effectiveness of global environmental policies.[21] This echoed the calls by some scholars for an expanded role for NGOs in international environmental negotiations, including codification in international law of NGO participation, especially with regard to monitoring compliance.[22]

However, there is considerable resistance among states to accord environmental groups an information-gathering function. In some developing countries, for example, closed political systems, control of the media, and restrictions on democratic rights and activities, have constrained substantive fact finding. Grass-roots groups in some Third World countries have increasingly linked environmental/development issues to human rights issues in view of the reactions of authoritarian governments to their attempts to establish accountability for environmentally-unsustainable projects. NGO scrutiny of policies ostensibly designed to alleviate poverty but which have often resulted in major dislocations of local communities from traditional lands, air and water pollution, rapid depletion of rain forests, and the extinction of wildlife species, has often been met with governmental repression.[23]

Southern NGOs have more recently strengthened their own capability for playing not only a domestic but also an international role, including forming coalitions with their Northern counterparts. Increased North-South nongovernmental contacts and the use of modern communications equipment have enabled these coalitions to lobby the governments of the major Western donor nations to secure changes in lending practices of multilateral financial institutions (e.g. the World Bank). These coalitions have established linkages between human rights violations and environmental destruction.[24] Thus, the shared interests and perceptions of NGOs give them considerable flexibility in forming transnational coalitions to highlight issues that states are unable, or unwilling, to address.

Even in Western countries, state-NGO relations until recent times have been marked by mutual suspicion, as in the case of Antarctica. States have for the most part perceived environmental protection as a barrier to economic development, and have refused to recognize environmental problems or the risks involved in large-scale resource exploitation projects in sensitive ecosystems such as the Antarctic or the Arctic. Governments have

sometimes dismissed NGO demands for regulatory action, citing scientific uncertainty or a lack of financial resources. In some extreme cases, such as the bombing of the Greenpeace ship *Rainbow Warrior* by agents of the French government in New Zealand in 1985, some Western states have perceived environmental groups as direct threats to the attainment of strategic and security goals.[25]

II. Theoretical Implications

The history and politics of Antarctic environmental issues examined in this dissertation confirm the findings of a growing body of literature about the linkages between domestic and international politics, and the utility of drawing upon important theoretical concepts in the comparative politics and international relations literature for the study of global environmental politics.[26] Chapter 8 vividly demonstrated how perceptions of an Antarctic mineral resources regime were largely shaped by the domestic economic and political priorities of the ATCP states. Similarly, pressures for more rigorous environmental protection rules and improved compliance with the conservation regime for Antarctic marine living resources were first generated at the domestic level by environmental NGOs. These findings also confirm the conclusions of other case studies on the Antarctic policy of individual states; for example, that domestic politics best explain Australia's decision not to ratify the Antarctic minerals regime.[27] Moreover Australia's leadership on other global environmental issues, including a ban on drift-net fishing, chairing the international negotiations on the elimination of chemical weapons, and its appointment of the world's first special ambassador for the environment, has been attributed in part to the role of the environmental movement in that country's national elections since the mid-1980s. The so-called "green vote" has had a considerable influence on the policies of the Australian Labour Party in particular.[28]

The domestic-international linkages in Antarctic environmental politics also provide evidence of the increasingly complex nature of the relations between nation-states. Although the nation-state is the primary actor shaping outcomes in international environmental politics, the thesis supports the conclusion of Putnam that it is a multi-dimensional entity within which "parties, social classes, interest groups (both economic and noneconomic), legislators, and even public opinion and elections, not simply executive officials and institutional arrangements" play significant roles.[29]

In the Antarctic context a wide range of often-conflicting pressures and forces within states, for example, government bureaucracies, ideologies and belief systems, legislative processes, industrial and environmental interest groups and public opinion have influenced policy outcomes. For example, philosophical commitments to limited government and deregulation among some Western ATCP states in the 1980s had considerable influence on the design of the Antarctic mineral resources regime. Also, bureaucratic actors within states played a crucial role in the lax enforcement of EIA and waste disposal policies. Likewise, legislators in both the US and Australia also played major roles in pressuring bureaucracies for more stringent enforcement of the rules on waste disposal. And the pressure of public opinion in several Western ATCP states in the late 1980s forced governments to abandon their commitments to ratify the CRAMRA regime. Antarctic environmental politics and policy has also been influenced in some degree by the advisory role of an epistemic community of scientists bound by transnational ties and shared perceptions. The emergence of environmental NGOs as policy advisors provides evidence of competition among nonstate actors to influence the Antarctic regime's policy direction.

In the arena of international environmental policy, the complex character of the state provides for "intriguing possibilities for coalition formation and conflict in ways not anticipated in conventional

distinctions between governmental and nongovernmental actors."[30] The close collaboration between Australia and environmental NGOs in the context of the CCAMLR regime's attempts to establish ecosystem-oriented conservation measures, and between Australia, France, Italy and Belgium on the one hand and the ASOC coalition of NGOs on the other in the context of the Protocol negotiations, was largely responsible for the strengthening of the respective regimes. Rosenau has predicted that these processes of coalition formation will be "speeded up as scientific findings reveal distant environmental threats to be moving closer to present-day reality."[31]

Global Commons Regimes in Comparative Perspective: Domestic-International Linkages

Antarctica offers some useful comparisons in the study of domestic-international interactions in the politics of the global commons regimes. The influence of industrial interest groups in the negotiations on the CRAMRA regime were also evident in the UNCLOS III negotiations pertaining to the deep seabed. This was particularly evident in the stands taken by the UK and US delegations with regard to guaranteed access to resources. Similar industry influence was also evident in the stand taken by the UK at the negotiations to protect the depletion of the Earth's stratospheric ozone layer. The closeness of government-industry collaboration resulted in the UK resisting regulation of ozone depleting chemicals (CFCs) manufactured by British companies.[32]

As in the cases of CRAMRA and CCAMLR, Environmental NGO campaigns also have had considerable influence in strengthening other regimes. For example, NGO campaigns, both nationally and transnationally, against continued manufacture of CFC-aerosol products in the UK and the EC contributed to the pressure on industry and the governments concerned to agree to an earlier than planned phase-out of such ozone-depleting

products under the 1987 Montreal Protocol.[33] The formation of informal conservationist coalitions involving states and NGOs in the CCAMLR and IWC regimes enabled effective pressure to be exerted on a minority of harvesting states to agree to ecosystem-oriented management rules. In each case the leadership of one state (i.e. Australia in CCAMLR and the US in the IWC) has been crucial to its success. In both regimes NGOs have persuaded conservation-minded states to appoint scientists whose research has enabled ecosystem-oriented conservation measures to be established.[34] The open access to the global commons has enabled NGOs to monitor state compliance with various regime rules; for example, observance of waste disposal rules under the Antarctic Treaty, regulations on fishing practices and technologies under CCAMLR, and the restrictions imposed on commercial whaling by the IWC including a ban on state-sponsored "pirate" whaling activities of private groups.[35] NGOs have also used domestic enforcement mechanisms in US law to enhance the effectiveness of global commons regimes. The use of judicial review to compel the NSF to apply NEPA to Antarctic EIAs and the successful pressure on the US government to apply trade sanctions available under the Pelly and Packwood-Magnuson Amendments against whaling states violating the rules of the IWC[36] have been prominent examples of this strategy. On the issue of ozone depletion, for example, one US NGO (the Natural Resources Defense Council) initiated a court case in the early phase of the regime negotiations to compel the government to introduce domestic regulations on the use of CFCs under the provisions of the Clean Air Act[37] thereby attempting to influence international standards.

NGOs have employed non-violent direct action protests to secure compliance of states in order to enhance the effectiveness of regimes governing the global commons. This strategy enabled them to bring seemingly remote issues directly to the public's attention and thereby to stimulate pressure on offending states. For example, France's defiance of the prohibition on the contamination of the global atmosphere, outer space

and the high seas from radioactive fallout resulting from nuclear weapons testing above ground under the Partial Test Ban Treaty (1963) was challenged by Greenpeace in the early 1970s. Repeated protest voyages into the Mururoa Atoll exclusion zone in the South Pacific by the Greenpeace vessel *Vega* that involved confrontations with the French navy, mobilized domestic and international public opinion against such tests. As a result France announced in 1973 that it would refrain from conducting further atmospheric atomic tests.[38] Similar challenges to the whaling activities of Spain by the Greenpeace ship *Rainbow Warrior* in 1979-80 generated pressures on that country's Parliament to support a global moratorium on whaling in 1981.[39] In the Antarctic context Greenpeace protests led to the decisions by France to review its Pointe Geologie airstrip construction project's environmental impact study and by the US to enhance compliance with the waste disposal regime.

Domestic legislatures can also influence the outcomes of negotiations on global commons regimes by adopting in advance unilateral legislation that could serve as models for agreements or as a means to push the process forward by preventing national delegations from making too many trade-offs which could weaken such regimes. For example, the Canadian Parliament passed the Arctic Waters Pollution Prevention Act in 1970 in an attempt to influence the UNCLOS III negotiations on the issue of establishing a special marine pollution-control zone around the islands north of the 60th parallel and to strengthen its sovereignty claims in the Arctic.[40] In the Antarctic context, the legislatures of the US, Australia, New Zealand and Belgium passed unilateral legislation prior to the 1990-91 Madrid Protocol regime negotiations prohibiting their nationals and companies from undertaking Antarctic mining activities while the Italian Parliament unanimously adopted a motion withholding ratification of CRAMRA. The measures were designed to encourage ATCP governments to establish a permanent ban on such activities and to prevent any attempts by the pro-mining states to keep the "mining option" open. Likewise, in

1989-90, the US and West German legislatures passed stringent unilateral legislation for a rapid phase-out of production of ozone-depleting chemicals in advance of international negotiations for revising the Montreal Protocol.[41]

The timing of negotiations also affects the overall design or implementation of global commons regimes. The international context during the 1970s and early 1980s shaped the domestic policy choices of states in several global commons regimes. The CCAMLR, CRAMRA and UNCLOS III negotiations which roughly spanned this period were dominated by concerns over global scarcities of food, oil, and minerals and obtaining access to such resources was a primary consideration; the environmental risks involved were only secondary. Moreover, the implementation of the Antarctic EIA regime was hampered or ignored in part due to concerns about possible barriers to resource access. However, by the late-1980s scientific evidence of the accelerated depletion of the ozone layer and debates about global warming and climate change had pushed environmental issues on to the top of the international agenda, thereby pressuring states to give weight to ecological vulnerability in their policy choices. These changes were evident in the revisions to the Montreal Protocol for speedier phase-outs of CFCs, the abandonment of CRAMRA and the negotiation of the Madrid Protocol to preserve Antarctica, and in the negotiation of Conventions to deal with climate change and loss of biodiversity.

The rigorousness of global commons regimes can also vary according to the impact regime rules are likely to have on the number of economic actors involved and the political and scientific consensus on the issue area within a state. In the US the Montreal Protocol regime, for example, affected few economic interests directly, and then only marginally. It was focussed exclusively on regulating CFCs, a group of chemicals having limited industrial uses and involving a small number of manufacturers with low profit margins who were likely to benefit from a transition to alternatives available from the same companies. This was backed up by

strong political support from NGOs and growing scientific evidence of ozone depletion. Thus the US took the lead in negotiating dramatic reductions in the production of CFCs. On the other hand, the variety of powerful economic interests likely to be affected by a stringent global climate change regime (e.g., oil, coal, nuclear, automobile and utilities industries), the lack of a political consensus and a divergence of scientific views, influenced the US to oppose an international treaty mandating firm targets and timetables for reducing greenhouse gas emissions.[42]

The effectiveness of regional high seas fishery regimes are also dependent in part on the influence of distant water fishing industries on their respective governments. The vetoes exercised on conservation measures by Japan, USSR and Poland during the first eight years of the CCAMLR regime were largely designed to maintain the profitability of overcapitalized fleets and stable domestic employment levels. Such behaviour on the part of distant water fishing nations has also undermined the effectiveness of other regional fishery regimes (for example, those for the North Pacific and the Atlantic[43]) and has prompted the UN to initiate negotiations on a global treaty on high seas fisheries. At the same time the failure of the Russian and Japanese krill processing industries to rapidly expand commercial markets has allowed CCAMLR scientists opportunities to develop ecosystem-oriented precautionary conservation measures before excessive pressures for exploitation can occur.[44]

While an extended theoretical discussion is beyond the scope of this chapter, it is noteworthy that approaches which assume the state as a unitary, rational actor with clear sets of ordered interests, limit our understanding of international politics in general, and environmental politics in particular. Theoretical approaches that adopt the unitary-actor model of the state are not able to account for the changes in the international environmental policies of the ATS caused by the domestic

political processes of the ATCP states, in particular the role of environmental NGOs and the political saliency of environmental issues. Haggard and Simmons, in their extensive review of theoretical approaches to the study of international regimes, have noted a neglect of domestic political processes, "in part because of the lure of parsimonious systemic theory";[45] in particular, they have observed that the "neglect of the domestic political and economic realm has had deeper costs, including a neglect of the substantive issues over which states are likely to seek cooperation and the basic forces leading to regime change."[46] In a similar vein, Porter and Brown have suggested that the study of environmental regimes needs to pay attention to three aspects: the political context of regime creation; the economic structures underlying environmental issues; and the dynamic political factors that give impetus to longer-term trends toward stronger regimes.[47] Princen on the other hand has cautioned that the nature of environmental problems - marked by irreversibility, bioaccumulation, dispersion, and synergistic and threshold effects - cannot easily be addressed by treating the environment as just another issue area in international politics (for example, security) as in conventional approaches. Their resolution requires a multicentric approach with two interacting links: those connecting the specific biophysical conditions to international politics, and those connecting the local to the international environment. In this reorientation,

> [h]orizontal relations among countries give way to (or are complemented by) vertical relations among localities, states, and intergovernmental organizations. A variety of actors become involved in these processes, including environmental groups organized at the grassroots or national, regional, or international levels; and transnational corporations, many of whom penetrate virtually every community around the globe.[48]

Some of these shortcomings are apparent in the only attempt at applying regime theory to the study of the ATS. Although giving some consideration to the domestic level of politics in Antarctic issues, the study - *Managing the Frozen South* - underestimates the capacity of environmental groups to effect changes in governmental policies through

lobbying and mobilizing of public opinion[49] as happened in the case of CRAMRA. This neglect of the domestic realm of Antarctic politics is evident in the study's basic conclusion that the low salience of Antarctic issues is likely to relegate it to insignificance for many years to come. The post-1989 developments have proved otherwise. Moreover, the study notes that the "success or failure of regime creation and modification depends on forging a coalition of states with sufficient issue-specific power to maintain the regime vis-à-vis any private actors involved and against challenge by other states."[50] But it did not envisage the possibility of informal coalition formation between states and nonstate actors to strengthen the regime's environmental goals.

Likewise, the world systems approach, which has been adopted to predict Antarctica's incorporation into the capitalist world economy to sustain the increasing resource demands of the core industrialized states,[51] also fails to take account of domestic political processes that can change governments' foreign policies. It assumes that the ATCP states are unitary actors whose underlying power capabilities (including technological advances) would allow them to inevitably exploit potential Antarctic mineral resources, thus further widening the disparities between them and the countries of the periphery of the modern world system. This approach also ignores the adverse environmental consequences of Antarctic mining and the potential of environmental awareness among domestic publics to generate pressures on governments for the adoption of ecologically sensitive policies to preserve Antarctica.

More recently, some state-centric analysts have, however, acknowledged the important role of nonstate actors in generating effective state responses to international environmental problems. One study in particular, has noted the enhanced capacities of NGOs in the changing international milieu:

> NGOs operate on a complex playing field with multiple loyalties and blurred jurisdictions, often wielding greater influence than students of international politics have come to expect from actors who are weaker, according to conventional

criteria, than their corporate and state adversaries.[52]

This and other recent studies of global environmental issues suggest an emerging consensus among a disparate group of scholars and practitioners on the need to take account of the domestic-international linkages in the study of environmental problems.

III. Antarctica and the International Community

A central conclusion that can be drawn from this thesis is that Antarctica has fundamental value for international environmental policy-making and is of vital interest to the international community. This is partly evident in the granting of observer status to environmental NGOs and to qualified UN bodies such as UNEP. Although all the major agreements drawn up under the ATS referred to the "interests of all mankind" in reserving the continent for peaceful purposes and scientific research, few concrete actions were instituted to involve the international community directly or indirectly until recent times. The realities of the international economic system ensured that few of the less affluent nations met the standard for qualifying for decision-making status (as a Consultative Party) under the Antarctic Treaty by establishing a scientific base or sending an expedition. Nor was there any attempt to involve UN agencies in scientific cooperation so as to educate the international community on the benefits of Antarctic science. Instead the ATCPs were primarily motivated by a desire to maintain exclusive control over the policy process in order to define the rules of access to Antarctica's potential resources and to avoid sharing any prospective benefits with non-Treaty developing countries, especially in the wake of the oil crises of the 1970s. As a reaction, the latter advocated the application of the "the common heritage of mankind" concept as a means to replace the Antarctic Treaty with a UN-sponsored regime and to obtain equal access to the continent's resources and a share in the benefits of

development. In addition, the non-Treaty developing countries objected to the participation of South Africa in the ATS and sought to establish a link between the ATS and the UN to provide for greater involvement and accountability.[53]

Environmental NGOs perceived that the international community would best derive benefits from Antarctica by maintaining the Antarctic Treaty, but with provision for greater transparency. More significantly, they advocated preserving the continent as a "common heritage" because of its intrinsic values, such as its wilderness and scientific values. They viewed the exploitation of Antarctica as a mere short-term measure designed to prolong unsustainable patterns of energy and resource consumption.[54] The NGOs cast considerable doubt on the ability of the ATCPs to effectively protect Antarctica under a future mining regime by publicizing the compliance record of extant environmental regimes. Their prescriptions for the international energy crises called for major reorientations in national energy policies, particularly those of the major industrialized counties. These involved shifting investment priorities toward energy efficiency, conservation, and environmentally cleaner renewable-fuel options, and away from the search for limited supplies of fossil fuels.

The debates at the UN instigated by the Malaysia-led developing country coalition in the 1980s had limited effect on the ATCP states. The narrow focus of the UN debates allowed the ATCPs to ward off the non-Treaty challenge with several arguments. In particular, because the international community's interests in Antarctica were couched largely in terms of the material benefits of resource exploitation, the former were able to reject the application of the common heritage concept to Antarctica on environmental grounds. The "strong exploitation orientation" of the concept as developed at the UN was considered incompatible with the fragility of Antarctic ecosystems.[55] Both sides in the debate were seemingly oblivious of the fact that the "common heritage" concept, as

originally elaborated by Malta (and primarily intended to apply to the deep seabed) did involve an environmental dimension. It called for the area in question to be reserved for future generations, although it did not specify how much weight should be given to ecological values in terms of the sensitivity of the ecosystems.[56] Ironically, the CRAMRA regime devised by the ATCPs themselves, with its rigorous environmental standards was subsequently considered inadequate to protect Antarctica. Moreover, lack of support for the application of the "common heritage" concept to Antarctica among the more influential developing countries limited the diplomatic pressure on the ATS. In particular, the decision by some states (for example, India, Brazil, and China), to claim a stake in potential Antarctic minerals by acceding to the Treaty, as well as the presence of two ATS Third World states (Argentina and Chile) which were strongly opposed to any solution that would affect their asserted claims in Antarctica, effectively restricted the impact of the UN debates. The only real benefit of the UN debates was the availability of greater information about the ATS. But this outcome was also partly the result of the pressure exerted by environmental NGOs.

However, the most significant gains for the global community may have accrued from the recognition of the need for comprehensive protection of the Antarctic environment and the designation of Antarctica as a "natural reserve, devoted to peace and science" under the Madrid Protocol. This has brought into the Antarctic policy processes, albeit in an advisory role, several nonstate actors with environmental and scientific competence, and this has given credence to the view that the management of Antarctica has to be addressed within the overall context of the need to preserve the biosphere. Thus, according to Davis,

> Antarctic policy-making is no longer solely the domain of diplomats and scientists, but now involves a wider polity, with perhaps every citizen of the world possessing a stake, if we regard Antarctica as a crucial global climate control or as a relatively pristine scientific reference point against which to test environmental change elsewhere. In this sense Antarctica *is* the common heritage of mankind, despite the pejorative misinterpretation of the phrase by those who seek

to exploit the resources of the region.[57]

IV. Future Prospects

The adoption of the Madrid Protocol marked a major step in the transformation of a primarily regional disarmament and scientific regime to one of the most successful international environmental regimes. Although this study has dealt largely with the changes in the environmental dimension of the Treaty, one should not underestimate the contribution that the regime has made to international peace and stability. Indeed, by preventing the spill-over into Antarctica of the Cold War rivalry between the superpowers, as well as containing regional territorial rivalries, the Antarctic Treaty provided the bedrock for building environmental protection regimes supported by multinational scientific cooperation.

Nevertheless, there is a need to assess the degree of demilitarization of Antarctica. Strategic factors may yet impinge on the effective implementation of the Madrid Protocol. Recent research has revealed that there is room for improvement, especially in the maritime areas within the Antarctic Treaty's ambit. The freedom of the high seas in the Southern Ocean south of 60° South has been interpreted by some states as permitting military-oriented research activities, such as training and equipment testing and military-utility research involving very low frequency radio communications.[58] However, with the end of the Cold War, the relevance of much of this research is waning, and recent budgetary cut-backs indicate that such oceanographic research may be phased out.[59] It provides opportunities to enhance the Antarctic Treaty's goal of reserving the region for peaceful purposes. The entry into force of the Law of the Sea Convention in 1994, through its reservation of the high seas for peaceful purposes, also provides impetus for the complete demilitarization of the region.

The sustainable exploitation of Antarctic marine living resources

has received an impetus from the CCAMLR decision to adopt a precautionary approach to fisheries management. This was exemplified in the establishment of an annual catch limit for krill in the Convention area. Although the current rate of krill harvesting is only about one percent of its total population, recent scientific findings have justified this decision. These have identified a possible link between the declines in krill and penguin populations and the warming of Antarctica's climate, potentially a consequence of global warming.[60] There are also indications that Japanese and Russian krill fishing may be effecting the availability of that species as food for penguins.[61] The precautionary catch limit would thus enable long-term research to determine the connection between the two species, and the influence of global warming on Antarctic ecosystems.

Precautionary measures established by non-ATS regimes with competence in the marine areas of Antarctica will further supplement the conservation of the Antarctic marine ecosystem. The IWC's decision to designate the Southern Ocean as a sanctuary for whales, although expressly designed to enable the recovery of their stocks and strengthen the extant global moratorium on commercial whaling, indirectly reinforces the efforts of the CCAMLR regime with regard to krill - the basic food of the whales. Moreover, the permanence of the sanctuary reduces the possibilities of a resumption of commercial whaling even if the current moratorium is lifted. And some believe that the sanctuary measure would generate pressures on Japan to cease taking whales for "scientific research" - a practice widely perceived as exploitation of a loophole in the whaling regime to circumvent the global commercial moratorium.[62] Thus recent decisions by regimes with overlapping maritime jurisdictions in Antarctica indicate a trend towards the adoption of ecosystem-oriented policies.

However, there is cause for concern that the Madrid Protocol may take longer than expected to enter into force. In the three years since its adoption, only nine out of the required 26 ATCP states have ratified

the Protocol. There are several reasons for the slow progress, including national budgetary cut-backs stemming from the global recession, bureaucratic resistance to more rigorous regulations, and lack of political will.

The global recession has forced several ATCP states to cut back on their Antarctic budgets. The Russian Federation has been the most affected ATCP in this regard. Its worsening domestic economic crisis has forced it to close down four of its nine Antarctic research stations. In addition, its social and political crisis has had far-reaching implications. In 1992, Russian scientists stopped sending Antarctic scientific information home in order to protest the difficult living conditions for their families in Russia, while the turmoil in Parliament delayed the ratification of the Protocol.[63]

At the same time, as already discussed in Chapter 4, there is considerable bureaucratic resistance to the implementation of rigorous environmental policies on EIA and waste management. Despite increasing levels of environmental awareness about Antarctica, some bureaucracies with entrenched views have continued to resist public scrutiny.[64] Some scientists have expressed concern that rigorous environmental rules will make Antarctic science more expensive and impose bureaucratic and time constraints that would limit research activities.[65] There is also evidence that available Antarctic funds may not be efficiently managed and that there is insufficient oversight of project planning. For example, several UK Antarctic projects have been subject to criticism for cost overruns and management problems.[66] It has also been suggested (by critics opposed to more thorough environmental regulation) that the prohibition on mining and the lack of geopolitical competition following the collapse of the USSR, may provide disincentives for environmental monitoring-oriented Antarctic science, for example, in relation to the ozone layer, global warming and pollution.[67]

Probably the most significant factor delaying ratification of the

Madrid Protocol is the lack of political will among ATCP governments. Antarctic issues have received less attention by some, in part due to an assumption that the Antarctic has been "saved" and that no follow-up action is necessary. Moreover, the rhetorical commitments made in 1991 have yet to be fulfilled through the allocation of funding for much needed research on depletion of the ozone layer and on global warming problems.

Nevertheless, there is considerable reason for optimism. The role of environmental awareness and citizen activism on environmental threats in the industrialized democracies have renewed pressure on governments for early implementation of the Protocol. Thus Australia and Sweden in 1994 became the first two nations to enact domestic legislation to implement the Protocol, and several others, including Argentina, Ecuador, France, the Netherlands, Norway, Peru, and Spain have ratified. Some countries have had implementing legislation passed through their lower houses, while US legislation has been subject to that country's unique system of interest-group bargaining.[68] Others have taken some practical steps towards giving effect to the goals of the Protocol; for example, minimizing environmental impacts through the introduction of EIA procedures for planned projects;[69] enhancing international cooperation on scientific planning and sharing of facilities;[70] the use of clean energy sources;[71] or reduction of wastes through the return of accumulated wastes to countries of origin.[72] There is also evidence that some scientists who were initially concerned about the Protocol's regulatory impact on their freedom of investigation have come to accept the need for stewardship of Antarctica.[73]

The emergence of NGOs in many of the former Eastern bloc countries and in the Third World will provide an additional impetus for governmental action. The emergence of democratic systems of governance in Argentina and Chile, for example, have already witnessed substantial policy changes. This optimism is not without foundation. It was only a few years ago that a prohibition on mining in Antarctica and more effective protection for

the continent seemed hopelessly idealistic. Suddenly such ideas were embraced by governments on a ground swell of public support. Indeed, the Antarctic case study can be seen as providing a model for public participation, environmental awareness and international cooperation. As Mickleburg has eloquently put it:

> The [Antarctic] continent has become a symbol of our time. The test of man's willingness to pull back from the destruction of the Antarctic wilderness is the test also of his willingness to avert destruction globally. If we cannot succeed in Antarctica we have little chance of success elsewhere.[74]

Notes for Chapter 9

1. McCormick (1989), *Reclaiming Paradise: The Global Environmental Movement*; Porter and Brown (1991), *Global Environmental Politics*; Kamieniecki [ed] (1993), *Environmental Politics in the International Arena: Movements, Parties, Organizations, and Policy*.

2. NGOs have skilfully used what Prins has called the information technology revolution as a means to overcome the inadequacies of the discrete governmental policies to the synergistic effects of environmental problems. Prins (1990), "Politics and the Environment" in *International Affairs* Vol. 66, pp. 711-30.

3. Day (1987), *The Whale War*; Benedick (1991), *Ozone Diplomacy: New Directions in Safeguarding the Planet*, pp. 28; 165-7; 206-7; Stairs and Taylor (1992), "Non-Governmental Organizations and Legal Protection of the Oceans: A Case Study" in Hurrell and Kingsbury [eds], *International Politics of the Environment: Actors, Interests and Institutions*, pp. 110-41; Peet (1994), "The Role of (Environmental) Non-Governmental Organizations at the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO), and at the London Dumping Convention (LDC)" in *Ocean & Coastal Management* Vol. 22, pp. 3-18; and Sands and Bedecarré (1990), "CITES: The Role of Public Interest Nongovernmental Organizations in Ensuring the Effective Enforcement of the Ivory Trade Ban" in *Boston College Environmental Affairs Law Review* Vol. 17, pp. 799-822.

4. Porter and Brown (1991), p. 92.

5. Porter and Brown (1991), pp. 30-3.

6. Roederer (1986), "International Scientific Cooperation in the Arctic: Problems, Opportunities and US Responsibilities" in Stonehouse [ed], *Arctic Air Pollution*, p. 291.

7. Ibid.

8. See *New Scientist* (1991), "Green Light for Plan to Save the Arctic" Vol. 130 (1774), June 22, p. 13; Elferink (1992), "Environmental Protection in the Arctic-the Rovaniemi Process" in *Marine Pollution Bulletin* Vol. 24, pp. 128-30.

9. See *New Scientist* (1993), "Russia Owns Up to Sea Burial For Nuclear Waste" Vol. 138 (1869), April 17, p. 5; and *New Scientist* (1993), "Secrecy Sinks Nuclear Survey" Vol. 139 (1889), Sept. 4, p. 7.

10. Caldwell (1990), *International Environmental Policy: Emergence and Dimensions*, 2nd ed., p. 9.

11. Barnes (1984), "Non-governmental Organizations: Increasing the Global Perspective" in *Marine Policy* Vol. 8, p. 173.

12. Inglehart (1981), "Post-Materialism in an Environment of Insecurity" in *American Political Science Review* Vol. 75, pp. 880-900.

13. Milbrath (1984), *Environmentalists: Vanguard for a New Society*.

14. Rosenau (1993), "Environmental Challenges in a Global Context" in Kamienicki [ed] (1993), pp. 257-74.

15. See Hatch (1993), "Domestic Politics and International Negotiations: The Politics of Global Warming in the United States" in *Journal of Environment and Development* Vol. 2 (2), pp. 1-39.

16. Peet (1994).

17. Stairs and Taylor (1992), pp. 120-3.

18. World Commission on Environment and Development (1987), *Our Common Future*, p. 328.

19. United States. General Accounting Office (1992), *International Environment: International Agreements Are Not Well Monitored: Report to Congressional Requesters*, GAO/RCED-92-43, p. 42.

20. United Nations. Department of Public Information (1992), *Agenda 21: Programme of Action for Sustainable Development: The Final Text of Agreements Negotiated by Governments at the United Nations Conference on Environment and Development, 3-14 June 1992, Rio de Janeiro, Brazil*, Sales No. E.93.1.11, Chapter 27, p. 230.

21. Ibid., Chapter 38, p. 280.

22. See Susskind (1994), *Environmental Diplomacy: Negotiating More Effective Global Agreements*, pp. 114-7; 130-1.

23. Crossette (1992), "What Some Preach in Rio Is Not What They Practice at Home" in *New York Times*, June 15, p. A8; and Human Rights Watch and Natural Resources Defense Council (1992), *Defending the Earth: Abuse of Human Rights and the Environment*.

24. E.g., the pressure applied by an international coalition of human rights and environmental groups compelled the World Bank to apply rigorous socioeconomic and environmental impact surveys to the Narmada River Valley dam and irrigation project in India that it had agreed to fund. The coalition involved the a grassroots group, the Save the Narmada Movement based in India and several Western NGOs, including the Environmental Defense Fund, the International Rivers Network and Asia Watch. Crossette (1992), "Movement Builds to Fight Harmful Projects in Poor Nations" in *New York Times*, June 23, p. C4. The Indian government decided to withdraw from the loan agreement once it became obvious that the project would not meet the new criteria. See *New Scientist* (1993), "Narmada Dam Fails World Bank's Final Test" Vol. 138 (1868), April 10, p. 5.

25. Sunday Times of London Insight Team (1986), *Rainbow Warrior: The French Attempt to Sink Greenpeace*.

26. One international relations scholar has noted that the "[t]he most portentous development in the fields of comparative politics and international relations in recent years is the dawning recognition among practitioners in each field of the need to take into account entanglements between the two." Putnam (1988), "Diplomacy and Domestic Politics: The Logic of Two-Level Games" in *International Organization* Vol. 42, p. 459.

27. See Bergin (1991), "The Politics of Antarctic Minerals: The Greening of White Australia" in *Australian Journal of Political Science* Vol. 26, pp. 216-39.

28. *Christian Science Monitor* (1990), "Aussies Take on Activist Mantle" May 11, p. 6.

29. Putnam (1988), p. 432.

30. Boardman (1991), "Approaching Regimes: Australia, Canada, and Environmental Policy" in *Australian Journal of Political Science* Vol. 26, p. 452.

31. Rosenau (1993), p. 272.

32. Maxwell and Weiner (1993), "Green Consciousness or Dollar Diplomacy? The British Response to the Threat of Ozone Depletion" in *International Environmental Affairs* Vol. 5, p. 30.

33. Ibid., p. 33; and Benedick (1991), p. 203.

34. E.g., the appointment of Dr. William de la Mare to the Australian delegation to both the IWC and CCAMLR. See Chapter 7.

35. See Day (1987), pp. 21-6; 39-40; 47-9; 78-89.

36. See Wilkinson (1989), "The Use of Domestic Measures to Enforce International Whaling Agreements: A Critical Perspective" in *Denver Journal of International Law and Policy*, Vol. 17, pp. 271-91.

37. Benedick (1991), p. 28.

38. Sunday Times of London Insight Team (1986), pp. 81-110.

39. Day (1987), pp. 64-7.

40. Sanger (1987), *Ordering the Oceans: The Making of the Law of the Sea*, pp. 113-6.

41. Shimberg (1991), "Stratospheric Ozone and Climate Protection: Domestic Legislation and the International Process" in *Environmental Law* Vol. 21, pp. 2175-2216.

42. Hatch (1993), p. 31.

43. *New Scientist* (1993), "Too Little Too Late to Save Atlantic Bluefin" Vol. 140 (1900), November 20, p. 11; and *New Scientist* (1993), "Russia's Favourite Fish on the Verge of Extinction" Vol. 140 (1902), December 4, p. 10.

44. Nicol and de la Mare (1993), "Ecosystem Management and the Antarctic Krill" in *American Scientist* Vol. 81, pp. 36-47.

45. Haggard and Simmons (1987), "Theories of International Regimes" in *International Organizations* Vol. 41, p. 513.

46. Ibid.

47. Porter and Brown (1991), p. 33.

48. Princen (1993), "International Environmental Conflict Resolution: A Multicentric Perspective" in *Natural Resources and Environment* Vol. 8 (2), pp. 11-3; 55.

49. Peterson (1988), *Managing the Frozen South: The Creation and Evolution of the Antarctic Treaty System*, pp. 178-81; 217.

50. Ibid., p. 206.

51. Rosh (1989), "Antarctica's Increasing Incorporation into the World-System" in *Review: Fernand Braudel Centre* Vol. 12, pp. 121-37.

52. Levy, Keohane and Haas, "Improving the Effectiveness of International Environmental Institutions" in Haas, Keohane and Levy [eds], *Institutions for the Earth: Sources of Effective International Environmental Protection*, p. 420. It also called for more systematic research on the relationships between non-state actors and international institutions, especially with regard to assessing the role of NGOs in enhancing the effectiveness of environmental regimes. Ibid.

53. See United Nations. General Assembly (1984), *Question of Antarctica: Study Requested Under General Assembly Resolution 38/77: Report of the Secretary-General: Views of States*, Doc. A/39/583, Vol. 3.

54. See Suter (1979), *Antarctica: World Law and the Last Wilderness*; and Brewster (1982), *Antarctica: Wilderness at Risk*.

55. See comments of Christopher D. Beeby, the chairman of the Antarctic minerals regime negotiations in Beeby (1986), "The Antarctic Treaty System as a Resource Management Mechanism - Nonliving Resources" in United States. Polar Research Board [ed], *Antarctic Treaty System: An Assessment: Proceedings of a Workshop Held at Beardmore South Field Camp, Antarctica: January 7-13, 1985*, p. 282.

56. See elaboration of common heritage of mankind concept by Ambassador Arvid Pardo of Malta in Pardo and Borgese (1976), *New International Economic Order and the Law of the Sea*, p. 10.

57. Davis (1990), "Science and Politics in Antarctic and Southern Oceans Policy: A Critical Assessment" in Herr, Hall and Haward [eds], *Antarctica's Future: Continuity or Change?*, p. 39.

58. See research undertaken by Alan Hemmings (Greenpeace-New Zealand) based partly on information obtained under the US Freedom of Information Act. Hemmings (1990), "Is Antarctica Demilitarized?" Ibid., pp. 225-41.

59. *Wall Street Journal* (1991), "As the Cold War Ends, Many Nations Are Cutting Their Antarctic Research" December 27, p. B4.

60. In the Antarctic peninsula rising winter temperatures have reduced the extent of sea ice which in turn has been attributed to the reduced availability of krill as a source of food for penguins. *Chronicle of Higher Education* (1994), "Penguins in Peril: Researchers in Antarctica Link Decline in Two Species to a Series of Mild Winters" Vol. 40 (18) January 5, pp. A6-A7; p. A15.

61. Ibid.

62. *New York Times* (1994), "Whaling Around Antarctica is Banned by World Body" May 27, p. A2.

63. *Wall Street Journal* (1991); *New York Times* (1992), "Russians in Antarctica Stage Protest Over Pay" June 23, p. C10.

64. E.g., the US *McMurdo* station officials failed to assess the environmental impacts involving a disposal of a stockpile of chemical wastes through the use of explosives. *New York Times* (1992), "U.S. Sets Off Blast in Antarctic Dump: Group Criticizes Explosives' Use to Destroy Chemicals" January 10, p. 28.

65. See testimony of Dr. Brian Howes (Woods Hole Oceanographic Institution) in United States. Congress. House of Representatives. Committee on Science, Space, and Technology (1993), *The Antarctic Environmental Protection Act of 1993*, Hearing (H.R. 103-21), February 23, 103rd Cong., 1st Sess., pp. 45-6.

66. *Nature* (1993), "Cost Overruns, Management Problems Found in British Antarctic Projects" Vol. 362 (6420), p. 486.

67. *Wall Street Journal* (1991).

68. *The Antarctica Project* (1994), "Protocol Ratification Update" Vol. 3 (2), Spring, p. 2.

69. E.g., New Zealand, Argentina, the Netherlands and South Africa. Greenpeace International (1994), *State of the Ice: An Overview of Human Impacts in Antarctica*, p. 12.

70. E.g., Germany has installed a satellite dish at the Chilean *O'Higgins* base and built an annex at the Argentinean *Jubany* station in the congested Antarctic Peninsula and King George Island areas respectively. The former is for monitoring changes in sea level and continental drift while the latter is designed to supplement on-going research. Ibid., pp. 38-9.

71. E.g., Spain's *Juan Carlos I* base has introduced an experimental wind generated energy system. Ibid., p. 29; and the US *Amundsen-Scott* station has begun to use solar heating during the Antarctic summer. See *New York Times* (1994), "Solar Heat Unit at a Pole" February 22, p. 8.

72. *Chicago Tribune* (1991), "Argentina Tackles Huge Antarctic Garbage Pile" September 1, p. 20.

73. This is best exemplified in the report issued by the National Research Council of the US Polar Research Board on the implementation of the Madrid Protocol; it commented that:

> Stewardship means making reasoned, forward-looking decisions based on scientific knowledge for the preservation, protection, and conservation of Antarctica for current and future generations, and for Earth as a system. A new context now exists for scientific research-one that links science and environmental issues, and leads to the concept of stewardship as a philosophy and a framework for human activates on the continent.

United States. Polar Research Board. National Research Council. Committee on Antarctic Policy and Science (1993), *Science and Stewardship in the Antarctic*, p. 6.

74. Mickleburg (1987), *Beyond the Frozen Sea: Visions of Antarctica*, p. 5.

Appendices

APPENDIX 1

THE ANTARCTIC TREATY

The Governments of Argentina, Australia, Belgium, Chile, the French Republic, Japan, New Zealand, Norway, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America,

Recognizing that it is in the interest of all mankind that Antarctica shall continue for ever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;

Acknowledging the substantial contribution to scientific knowledge resulting from international co-operation in scientific investigation in Antarctica;

Convinced that the establishment of a firm foundation for the continuation and development of such co-operation on the basis of freedom of scientific investigation in Antarctica as applied during the International Geophysical Year accords with the interests of science and the progress of all mankind;

Convinced also that a treaty ensuring the use of Antarctica for peaceful purposes only and the continuance of international harmony in Antarctica will further the purposes and principles embodied in the Charter of the United Nations;

have agreed as follows:

ARTICLE I

1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, *inter alia*, any measure of a military nature, such as the establishment of military bases and fortifications, the carrying out of military manoeuvres, as well as the testing of any type of weapon.

2. The present Treaty shall not prevent the use of military personnel or

equipment for scientific research or for any other peaceful purpose.

ARTICLE II

Freedom of scientific investigation in Antarctica and co-operation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty.

ARTICLE III

1. In order to promote international co-operation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable:

(a) information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy of and efficiency of operations;

(b) scientific personnel shall be exchanged in Antarctica between expeditions and stations;

(c) scientific observations and results from Antarctica shall be exchanged and made freely available.

2. In implementing this Article, every encouragement shall be given to the establishment of co-operative working relations with those Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica.

ARTICLE IV

1. Nothing contained in the present Treaty shall be interpreted as:

(a) a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;

(b) a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;

(c) prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's rights of or

claim or basis of claim to territorial sovereignty in Antarctica.

2. No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.

ARTICLE V

1. Any nuclear explosions in Antarctica and the disposal there of radio active waste material shall be prohibited.

2. In the event of the conclusion of international agreements concerning the use of nuclear energy, including nuclear explosions and the disposal of radioactive waste material, to which all of the contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX are parties, the rules established under such agreements shall apply in Antarctica.

ARTICLE VI

The provisions of the present Treaty shall apply to the area south of 60° South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights or the exercise of the rights, of any State under international law with regard to the high seas within that area.

ARTICLE VII

1. In order to promote the objectives and ensure the observance of the provisions of the present Treaty, each Contracting Party whose representatives are entitled to participate in the meetings referred to in Article IX of the Treaty shall have the right to designate observers to carry out any inspection provided for by the present Article. Observes shall be national of the Contracting Parties which designate them. The names of observers shall be communicated to every other contracting Party having the right to designate observers, and like notice shall be given of

the termination of their appointment.

2. Each observer designated in accordance with the provisions of paragraph 1 of this Article shall have complete freedom of access at any time to any or all areas of Antarctica.

3. All areas of Antarctica, including all stations, installations and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica, shall be open at all times to inspection by any observers designated in accordance with paragraph 1 of this Article.

4. Aerial observations may be carried out at any time over any or all areas of Antarctica by any of the contracting Parties having the right to designate observers.

5. Each Contracting Party shall, at the time when the present Treaty enters into force for it, inform the other Contracting Parties, and thereafter shall give them notice in advance, of

(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 subject to the conditions prescribed in paragraph 2 of Article 1 of the present Treaty.

ARTICLE VIII

1. In order to facilitate the exercise of their functions under the present Treaty, and without prejudice to the respective positions of the Contracting Parties relating to jurisdiction over all other persons in Antarctica, observers designated under paragraph 1 of Article VII and scientific personnel exchanged under sub-paragraph 1(b) of Article III of the Treaty, and members of the staffs accompanying any such persons, shall be subject only to the jurisdiction of the Contracting Party of which they are nationals in respect of all acts or omissions occurring while they are

in Antarctica for the purpose of exercising their functions.

2. Without prejudice to the provisions of paragraph 1 of this Article, and pending the adoption of measures in pursuance of sub-paragraph 1(e) of Article IX, the Contracting Parties concerned in any case of dispute with regard to the exercise of jurisdiction in antarctica shall immediately consult together with a view to reaching a mutually acceptable solution.

ARTICLE IX

1. Representatives of the Contracting parties named in the preamble to the present Treaty shall meet at the city of Canberra within two months after the date of entry into force of the Treaty, and thereafter 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, including measures regarding:-

(a) use of Antarctica for peaceful purposes only;

(b) facilitation of scientific research in Antarctica;

(c) facilitation of international scientific co-operation in Antarctica;

(d) facilitation of the exercise of the rights of inspection provided for in Article VII of the Treaty;

(e) questions relating to the exercise of jurisdiction in Antarctica;

(f) preservation and conservation of living resources in Antarctica.

2. Each Contracting Party which has become a party to the present Treaty by accession under Article XII shall be entitled to appoint representatives to participate in the meetings referred to in paragraph 1 of the present Article, during such times as the Contracting Party demonstrates its interest in Antarctica by conducting substantial research activity there, such as the establishment of a scientific station or the despatch of a scientific expedition.

3. Reports from the observers referred to in Article VII of the present Treaty shall be transmitted to the representatives of the Contracting

Parties participating in the meetings referred to in paragraph 1 of the present Article.

4. The measures referred to in paragraph 1 of this Article shall become effective when approved by all the Contracting Parties whose representatives were entitled to participate in the meetings held to consider those measures.

5. Any or all of the rights established in the present Treaty may be exercised as from the date of entry into force of the Treaty whether or not any measures facilitating the exercise of such rights have been proposed, considered or approved as provided in this Article.

ARTICLE X

Each of the Contracting Parties undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present Treaty.

ARTICLE XI

1. If any dispute arises between two or more of the Contracting Parties concerning the interpretation of application of the present Treaty, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.

2. Any dispute of this character not so resolved shall, with the consent, in each case, of all parties to the dispute, be referred to the International Court of Justice of settlement; but failure to reach agreement on reference to the International Court shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 of this Article.

ARTICLE XII

1.(a) The present Treaty may be modified or amended at any time by

unanimous agreement of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX. Any such modification or amendment shall enter into force when the depositary Government has received notice form all such Contracting Parties that they have ratified it.

(b) Such modification or amendment shall thereafter enter into force as to any other contracting Party when notice of ratification by it has been received by the depositary Government. Any such Contracting Party from which no notice of ratification is received within a period of two years from the date of entry into force of the modification or amendment in accordance with the provision of sub-paragraph 1 (a) of this Article shall be deemed to have withdrawn from the present Treaty on the date of the expiration of such period.

2.(a) If after the expiration of thirty years from the date of entry into force of the present Treaty, any of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX so requests by a communication addressed to the depositary Government, a Conference of all the Contracting Parties shall be held as soon as practicable to review the operation of the Treaty.

(b) Any modification or amendment to the present Treaty which is approved at such a conference by a majority of the Contracting Parties there represented, including a majority of those whose representatives are entitled to participate in the meetings provided for under Article IX, shall be communicated by the depositary Government to all Contracting Parties immediately after the termination of the Conference and shall enter into force in accordance with the provisions of paragraph 1 of the present Article.

(c) If any such modification or amendment has not entered into force in accordance with the provisions of sub-paragraph 1 (a) of this Article within a period of two years after the date of its communication to all the Contracting Parties, any Contracting Party may at anytime after the

expiration of that period give notice to the depositary Government of its withdrawal from the present Treaty; and such withdrawal shall take effect two years after the receipt of the notice by the depositary Government.

ARTICLE XIII

1. The present Treaty shall be subject to ratification by the signatory States. It shall be open for accession by any State which is a Member of the United Nations, or by any other State which may be invited to accede to the Treaty with the consent of all the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX of the Treaty.

2. Ratification of or accession to the present Treaty shall be effected by each State in accordance with its constitutional processes.

3. Instruments of ratification and instruments of accession shall be deposited with the Government of the United States of America, hereby designated as the depositary Government.

4. The depositary Government shall inform all signatory and acceding States of the date of each deposit of an instrument of ratification or accession, and the date of entry into force of the treaty and of any modification or amendment thereto.

5. Upon the deposit of instruments of ratification by all the signatory States, the present Treaty shall enter into force for those States and for States which have deposited instruments of accession. Thereafter the Treaty shall enter into force for any acceding state upon the deposit of its instruments of accession.

6. The present Treaty shall be registered by the depositary Government pursuant to Article 102 of the Charter of the United Nations.

ARTICLE XIV

The present Treaty, done in the English, French, Russian and Spanish languages, each version being equally authentic, shall be deposited in the archives of the Government of the United States of America, which shall transmit duly certified copies thereof to the Governments of the signatory

and acceding States.

APPENDIX 2

CONTRACTING PARTIES TO THE ANTARCTIC TREATY

The Antarctic Treaty was signed in Washington on 1 December 1959 by 12 states, and entered into force for those states on 23 June 1961. Below are listed in chronological order the dates of ratification of the Treaty by the original signatories, and the dates of accession or succession by other states. OS = Original Signatory: CP = Consultative party: AS = Acceding State.

N.B. Acceding states marked + became Consultative Parties on the following dates: Poland 29 July 1977, Federal Republic of Germany 3 March 1981, Brazil and India 12 September 1983, People's Republic of China and Uruguay 7 October 1985, German Democratic Republic and Italy October 1987, Spain and Sweden 21 September 1988, Finland, Peru and Republic of Korea 9 October 1989, Ecuador and Netherlands 19 November 1990. * Papua New Guinea succeeded to the Treaty after becoming independent of Australia. > The USSR was succeeded by the Russian Federation. < The German Democratic Rep. was succeeded by the reunified Germany. #The Slovak Republic became an acceding state after separation from Czechoslovakia.

	State	Date	Status
1	United Kingdom	31 May 1960	OS/CP
2	South Africa	21 June 1960	OS/CP
3	Belgium	26 July 1960	OS/CP
4	Japan	4 August 1960	OS/CP
5	United States of America	18 August 1960	OS/CP
6	Norway	24 August 1960	OS/CP
7	France	16 September 1960	OS/CP
8	New Zealand	1 November 1960	OS/CP
9	Soviet Union	2 November 1960	OS/CP>
10	Poland	8 June 1961	AS/CP+
11	Argentina	23 June 1961	OS/CP
12	Australia	23 June 1961	OS/CP
13	Chile	23 June 1961	OS/CP
14	Czechoslovakia	14 June 1962	AS
15	Slovak Republic	14 June 1962	AS#
16	Denmark	20 May 1965	AS
17	Netherlands	30 March 1967	AS/CP
18	Romania	15 September 1971	AS
19	German Democratic Rep.	19 November 1974	AS/CP+<
20	Brazil	16 May 1975	AS/CP+
21	Bulgaria	11 September 1978	AS
22	Germany, Federal Rep. of	5 February 1979	AS/CP+
23	Uruguay	11 January 1980	AS/CP+
24	Papua New Guinea	16 March 1981	AS*
25	Italy	18 March 1981	AS/CP+
26	Peru	10 April 1981	AS/CP+
27	Spain	31 March 1982	AS/CP+
28	China, People's Rep. of	8 June 1983	AS/CP+
29	India	19 August 1983	AS/CP+
30	Hungary	27 January 1984	AS
31	Sweden	24 April 1984	AS/CP+
32	Finland	15 May 1984	AS/CP+
33	Cuba	16 August 1984	AS
34	Republic of Korea	28 November 1986	AS/CP+
35	Greece	8 January 1987	AS
36	Democratic People's Rep. of Korea	21 January 1987	AS
37	Austria	25 August 1987	AS
38	Ecuador	15 September 1987	AS/CP+
39	Canada	4 May 1988	AS
40	Columbia	31 January 1989	AS
41	Switzerland	15 November 1990	AS
42	Guatemala	31 July 1991	AS
43	Ukraine	28 October 1992	AS

APPENDIX 3

AGREED MEASURES FOR THE CONSERVATION OF ANTARCTIC FAUNA AND FLORA

(Annex to Recommendation III-VIII)

PREAMBLE

The Governments participating in the Third Consultative Meeting under Article IX of the Antarctic Treaty,

Desiring to implement the principles and purposes of the Antarctic Treaty;

Recognizing the scientific importance of the study of Antarctic fauna and flora, their adaptation to their rigorous environment, and their interrelationship with that environment;

Considering the unique nature of these fauna and flora their circumpolar range, and particularly their defencelessness and susceptibility to extermination;

Desiring by further international collaboration within the framework of the Antarctic Treaty to promote and achieve the objectives of protection, scientific study, and rational use of these fauna and flora; and

Having particular regard to the conservation principles developed by the Scientific Committee on Antarctic Research (SCAR) of the International Council of Scientific Unions;

Hereby consider the Treaty Area as a Special Conservation Area and have agreed on the following measures:

ARTICLE I

1. These Agreed Measures shall apply to the same area to which the Antarctic Treaty is applicable (hereinafter referred to as the Treaty Area) namely the area south of 60° South Latitude, including all ice shelves.

2. However, nothing in these Agreed Measures shall prejudice or in any way affect the rights or the exercise of the rights, of any State under international law with regard to the high seas within the Treaty Area, or restrict the implementation of the provisions off the Antarctic Treaty

with respect to inspection.

3. The Annexes to these Agreed Measures shall form an integral part thereof, and all references to the Agreed Measures shall be include the Annexes.

ARTICLE II

For the purpose of these Agreed Measures:

(a) "Native mammal" means any member, at any stage of its life cycle, of any species belonging to the Class Mammalia indigenous to the Antarctic or occurring there through natural agencies of dispersal, excepting whales.

(b) "Native bird" means any member, at any state of its life cycle (including eggs), of any species of the Class Aves indigenous to the Antarctic or occurring there through natural agencies of dispersal.

(c) "Native plant" means any kind of vegetation at any stage of its life cycle (including seeds), indigenous to the Antarctic or occurring there through natural agencies of dispersal.

(d) "Appropriate authority" means any person authorised by a Participating Government to issue permits under these Agreed Measures.

(e) "Permit" means a formal permission in writing issued by an appropriate authority.

(f) "Participating Government" means any Government for which these Agreed Measures have become effective in accordance with Article XIII of these Agreed Measures.

ARTICLE III

Each Participating Government shall take appropriate action to carry out these Agreed Measures.

ARTICLE IV

The Participating Governments shall prepare and circulate to members of expeditions and stations information to ensure understanding and observance of the provisions of these Agreed Measures, setting forth in particular prohibited activities, and providing lists of specially protected species and specially protected areas.

ARTICLE V

1. The provisions of these Agreed Measures shall not apply in cases of extreme emergency involving possible loss of human life or involving the safety of ships or aircraft.

ARTICLE VI

1. Each Participating Government shall prohibit within the Treaty Area the killing wounding, capturing or molesting of any native mammal or native bird, or any attempt at any such act, except in accordance with a permit.

2. Such permits shall be drawn in terms as specific as possible and issued only for the following purposes.

(a) to provide indispensable food for men or dogs in the Treaty Area in limited quantities, and in conformity with the purposes and principles of these Agreed Measures;

(c) to provide specimens for museums, zoological gardens, or other educational or cultural institutions or uses.

3. Permits for Specially Protected Areas shall be issued only in accordance with the provisions of Article VIII.

4. Participating Governments shall limit the issue of such permits so as to ensure as far as possible that:

(a) no more native mammals or birds are killed or taken in any year than can normally be replaced by natural reproduction in the following breeding season;

5. The species of native mammals and birds listed in Annex A of these Measures shall be designated "Specially Protected Species," and shall be accorded special protection by the Participating Governments.

6. A Participating Government shall not authorize an appropriate authority to issue a permit with respect to a Specially Protected Species except in accordance with paragraph 7 of the Article.

7. A permit may be issued under this Article with respect to a Specially Protected Species, provided that:

(a) it is issued for a compelling scientific purpose, and

(b) the actions permitted thereunder will not jeopardize the existing natural ecological system or the survival of that species.

ARTICLE VII

1. Each Participating Government shall take appropriate measures to minimize harmful interference within the Treaty Area with the normal living conditions of any native mammal or bird, or any attempt at such harmful interference, except as permitted under Article VI.

2. The following acts and activities shall be considered as harmful interference:

(a) allowing dogs to run free,

(b) flying helicopters or other aircraft in a manner which would unnecessarily disturb bird and seal concentrations, or landing close to such concentrations (e.g. within 200m),

(c) driving vehicles unnecessarily close to concentrations of bird and seals (e.g. within 200m),

(d) use of explosives close to concentrations of birds and seals,

(e) discharge of firearms close to bird and seal concentrations (e.g. within 300m),

(f) any disturbance of bird and seal colonies during the breeding period by persistent attention from persons on foot.

However, the above activities, with the exception of those mentioned in (a) and (e) may be permitted to the minimum extent necessary for the establishment, supply and operation of stations.

3. Each Participating Government shall take all reasonable steps towards the alleviation of pollution of the waters adjacent to the coast and ice shelves.

ARTICLE VIII

1. The areas of outstanding scientific interest listed in Annex B shall be designated "Specially Protected Areas" and shall be accorded special protection by the Participating Governments in order to preserve their

unique natural ecological system.

2. In addition to the prohibitions and measures of protection dealt with in other Articles of these Agreed Measures, the Participating Governments shall in Specially Protected Areas further prohibit:

(a) the collection of any native plant, except in accordance with a permit;

(b) the driving of any vehicle.

3. A permit issued under Article VI shall not have effect within a Specially Protected Area except in accordance with paragraph 4 of the present Article.

4. A permit shall have effect within a Specially Protected Area provided that:

(a) it was issued for a compelling scientific purpose which cannot be served elsewhere; and

(b) the actions permitted thereunder will not jeopardize the natural ecological system existing in that Area.

ARTICLE IX

1. Each Participating Government shall prohibit the bringing into the Treaty Area of any species of animal or plant not indigenous to that Area, except in accordance with a permit.

2. Permits under paragraph 1 of this Article shall be drawn in terms as specific as possible and shall be issued to allow the importation only of the animals and plants listed in Annex C. When any such animal or plant might cause harmful interference with the natural system if left unsupervised within the treaty Area, such permits shall require that it be kept under controlled conditions and, after it has served its purposes, it shall be removed from the Treaty Area or destroyed.

3. Nothing in paragraphs 1 and 2 of this Article shall apply to the importation of food into the Treaty Area so long as animals and plants used for this purpose are kept under controlled conditions.

4. Each Participating Government undertakes to ensure that all reasonable

precautions shall be taken to prevent the accidental introduction of parasites and diseases into the Treaty Area. In particular, the precautions listed in Annex D shall be taken.

ARTICLE X

Each Participating Government undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in the Treaty Area contrary to the principles and purposes of these Agreed Measures.

ARTICLE XI

Each Participating Government whose expeditions use ships sailing under flags of nationalities other than its own shall, as far as feasible, arrange with the owners of such ships that the crews of these ships observe these Agreed Measures.

ARTICLE XII

1. The Participating Governments may make such arrangements as may be necessary for the discussion of such matters as:

(a) the collection and exchange of records (including records of permits) and statistics concerning the numbers of each species of native mammals and birds killed or captured annually in the Treaty Area;

(b) the obtaining and exchange of information as to the status of native mammals and birds in the Treaty Area, and the extent to which any species needs protection;

(c) the number of native mammals or birds which should be permitted to be harvested for food, scientific study, or other uses in the various regions;

(d) the establishment of a common form in which this information shall be submitted by Participating Governments in accordance with paragraph 2 of this Article.

2. Each Participating Government shall inform the other Governments in writing before the end of November each year of the steps taken and information collected in the preceding period of 1st July to 30 June

relating to the implementation of these Agreed Measures. Governments exchanging information under paragraph 5 of Article VII of the Antarctic Treaty may at the same time transmit the information relating to the implementation of these Agreed Measures.

ARTICLE XIII

1. After the receipt by the Government designated in Recommendation I-XIV (5) of notification of approval by all Governments whose representatives are entitled to participate in meetings provided for under Article IX of the Antarctic treaty, these Agreed Measures shall become effective for those Governments.

2. Thereafter any other Contracting Party to the Antarctic Treaty may, in consonance with the purposes of Recommendation III-VII, accept these Agreed Measures by notifying the designated Government of its intention to apply the Agreed Measures and to be bound by them. The Agreed Measures shall become effective with regard to such Governments on the date of receipt of such notification.

3. The designated Government shall inform the Governments referred to in paragraph 1 of this Article of each notification of approval, the effective date of these Agreed Measures and of each notification of acceptance. The designated Government shall also inform any Government which has accepted these Agreed Measures of each subsequent notification of acceptance.

ARTICLE XIV

1. These Agreed Measures may be amended at any time by unanimous agreement of the Governments whose Representatives are entitled to participate in meetings under Article IX of the Antarctic Treaty.

2. The Annexes, in particular, may be amended as necessary through diplomatic channels.

3. An amendment proposed through diplomatic channels shall be submitted in writing to the designated Government which shall communicate it to the Governments referred to in paragraph 1 of the present Article for

approval; at the same time, it shall be communicated to other Participating Governments.

4. Any amendment shall become effective on the date on which notifications of approval have been received by the designated Government and from all of the Governments referred to in paragraph 1 of this Article.

5. The designated Government shall notify those same Governments of the date of receipt of each approval communicated to it and the date on which the amendment will become effective for them.

6. Such amendment shall become effective on that same date for all other Participating Governments, except those which before the expiry of two months after that date notify the designated Government that they do not accept it.

ANNEXES TO THESE AGREED MEASURES

Annex A

Specially Protected Species

Annex B

Specially Protected Areas

Annex C

Importation of animals and plants

The following animals and plants may be imported into the Treaty Area in accordance with permits issued under Article IX (2) of these Agreed Measures:

(a) sledge dogs; (b) domestic animals and plants; (c) laboratory animals and plants.

Annex D

Precautions to prevent accidental introduction of parasites and diseases into the Treaty Area

The following precautions shall be taken:

1. Dogs: All dogs imported into the Treaty Area shall be inoculated against the following diseases: (a) distemper (b) contagious canine hepatitis (c) rabies (d) leptospirosis.

Each dog shall be inoculated at least two months before the time of its arrival in the Treaty Area.

2. Poultry: Notwithstanding the provisions of Article IX(3) of these Agreed Measures, no living poultry shall be brought into the Treaty Area after 1 July 1966.

APPENDIX 4

PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

PREAMBLE

The States Parties to this Protocol to the Antarctic Treaty, hereinafter referred to as the Parties,

Convinced of the need to enhance the protection of the Antarctic environment and dependent and associated ecosystems;

Convinced of the need to strengthen the Antarctic Treaty system so as to ensure that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;

Bearing in mind the special legal and political status of Antarctica and the special responsibility of the Antarctic Treaty Consultative Parties to ensure that all activities in Antarctica are consistent with the purposes and principles of the Antarctic Treaty;

Recalling the designation of Antarctica as a Special Conservation Area and other measures adopted under the Antarctic Treaty system to protect the Antarctic environment and dependent and associated ecosystems;

Acknowledging further the unique opportunities Antarctica offers for scientific monitoring of and research on processes of global as well as regional importance;

Reaffirming the conservation principles of the Convention on the Conservation of Antarctic Marine Living Resources;

Convinced that the development of a comprehensive regime for the protection of the Antarctic environment and dependent and associated ecosystems is in the interest of mankind as a whole;

Desiring to supplement the Antarctic Treaty to this end;

Have agreed as follows:

ARTICLE 1

DEFINITIONS

For the purposes of this Protocol:

(a) "The Antarctic Treaty" means the Antarctic Treaty done at Washington on 1 December 1959;

(b) "Antarctic Treaty area" means the area to which the provisions of the Antarctic Treaty apply in accordance with Article VI of that Treaty;

(c) "Antarctic Treaty Consultative Meetings" means the meetings referred to in Article IX of the Antarctic Treaty;

(d) "Antarctic Treaty Consultative Parties" means the Contracting Parties to the Antarctic Treaty entitled to appoint representatives to participate in the meetings referred to in Article IX of that Treaty;

(e) "Antarctic Treaty system" means the Antarctic Treaty, the measures in effect under that Treaty, its associated separate international instruments in force and the measures in effect under those instruments;

(f) "Arbitral Tribunal" means the Arbitral Tribunal established in accordance with the Schedule to this Protocol, which forms an integral part thereof;

(g) "Committee" means the Committee for Environmental Protection established in accordance with Article 11.

ARTICLE 2

OBJECTIVES AND DESIGNATION

The Parties commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems and hereby designate Antarctica as a natural reserve, devoted to peace and science.

ARTICLE 3

ENVIRONMENTAL PRINCIPLES

1. The protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, in particular research essential to understanding the global environment, shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area.

2. To this end:

(a) activities in the Antarctic Treaty area shall be planned and conducted so as to limit adverse impacts on the Antarctic environment and dependent and associated ecosystems;

(b) activities in the Antarctic Treaty area shall be planned and conducted so as to avoid:

(i) adverse effects on climate or weather patterns;

(ii) significant adverse effects on air or water quality;

(iii) significant changes in the atmospheric, terrestrial (including aquatic), glacial or marine environments;

(iv) detrimental changes in the distribution, abundance or productivity of species or populations of species of fauna and flora;

(v) further jeopardy to endangered or threatened species or populations of such species; or

(vi) degradation of, or substantial risk to, areas of biological, scientific, historic, aesthetic or wilderness significance;

(c) activities in the Antarctic Treaty area shall be planned and

conducted on the basis of information sufficient to allow prior assessments of, and informed judgements about, their possible impacts on the Antarctic environment and dependent and associated ecosystems and on the value of Antarctica for the conduct of scientific research; such judgements shall take full account of:

(i) the scope of the activity, including its area, duration and intensity;

(ii) the cumulative impacts of the activity, both by itself and in combination with other activities in the Antarctic area;

(iii) whether the activity will detrimentally affect any other activity in the Antarctic Treaty area;

(iv) whether technology and procedures are available to provide for environmentally safe operations;

(v) whether there exists the capacity to monitor key environmental parameters and ecosystem components so as to identify and provide early warning of any adverse effects of the activity and to provide for such modification of operation procedures as may be necessary in the light of the results of monitoring or increased knowledge of the Antarctic environment and dependent and associated ecosystems; and

(v) whether there exists the capacity to respond promptly and effectively to accidents, particularly those with potential environmental effects;

(d) regular and effective monitoring shall take place to allow assessment of the impacts of ongoing activities, including the verification of predicted impacts;

(e) regular and effective monitoring shall take place to facilitate early detection of the possible unforeseen effects of activities carried on both within and outside the Antarctic Treaty area on the Antarctic environment and dependent and associated ecosystems.

3. Activities shall be planned and conducted in the Antarctic Treaty area

so as to accord priority to scientific research and to preserve the value of Antarctica as an area for the conduct of such research, including research essential to understanding the global environment.

4. Activities undertaken in the Antarctic Treaty area pursuant to scientific research programmes, tourism and all other governmental and non-governmental activities in the Antarctic Treaty area for which advance notice is required in accordance with Article VII(5) of the Antarctic Treaty, including associated logistic support activities, shall:

(a) take place in a manner consistent with the principles in this Article; and

(b) be modified, suspended or cancelled if they result in or threaten to result in impacts upon the Antarctic environment or dependent or associated ecosystems inconsistent with those principles.

ARTICLE 4

RELATIONSHIP WITH THE OTHER COMPONENTS OF THE ANTARCTIC TREATY SYSTEM

1. This Protocol shall supplement the Antarctic Treaty and shall neither modify nor amend that Treaty.

2. Nothing in this Protocol shall derogate from the rights and obligations of the Parties to this Protocol under the other international instruments in force within the Antarctic Treaty system.

ARTICLE 5

CONSISTENCY WITH THE OTHER COMPONENTS OF THE ANTARCTIC TREATY SYSTEM

The Parties shall consult and co-operate with the Contracting Parties to the other international instruments in force within the Antarctic Treaty system and their respective institutions with a view to ensuring the achievement of the objectives and principles of this Protocol and avoiding any interference with the achievement inconsistency between the implementation of those instruments and of this Protocol.

ARTICLE 6

CO-OPERATION

1. The Parties shall co-operate in the planning and conduct of activities in the Antarctic Treaty area. To this end, each Party shall endeavour to:

(a) promote co-operative programmes of scientific, technical and educational value, concerning the protection of the Antarctic environment and dependent and associated ecosystems;

(b) provide appropriate assistance to other Parties in the preparation of environmental impact assessments;

(c) provide to other Parties upon request information relevant to any potential environmental risk and assistance to minimize the effects of accidents which may damage the Antarctic environment or dependent and associated ecosystems;

(d) consult with other Parties, with regard to the choice of sites for prospective stations and other facilities so as to avoid the cumulative impacts caused by their excessive concentration in any location;

(e) where appropriate, undertake joint expeditions and share the use of stations and other facilities; and

(f) carry out such steps as may be agreed upon at Antarctic Treaty Consultative Meetings.

2. Each Party undertakes, to the extent possible, to share information that may be helpful to other Parties in planning and conducting their activities in the Antarctic Treaty area, with a view to the protection of the Antarctic environment and dependent and associated ecosystems.

3. The Parties shall co-operate wit those Parties which may exercise jurisdiction in areas adjacent to the Antarctic Treaty area with a view to ensuring that activities in the Antarctic Treaty area do not have adverse environmental impacts on those areas.

ARTICLE 7

PROHIBITION OF MINERAL RESOURCE ACTIVITIES

Any activity relating to mineral resources, other than scientific research, shall be prohibited.

ARTICLE 8

ENVIRONMENTAL IMPACT ASSESSMENT

1. Proposed activities referred to in paragraph 2 below shall be subject to the procedures set out in Annex I for prior assessment of the impacts of those activities on the Antarctic environment or on dependent or associated ecosystems according to whether those activities are identified as having:

(a) less than a minor or transitory impact;

(b) a minor or transitory impact; or

(c) more than a minor or transitory impact.

2. Each Party shall ensure that the assessment procedures set out in Annex I are applied in the planning processes leading to decisions about any activities undertaken in the Antarctic Treaty area pursuant to scientific research programmes, tourism and all other governmental and non-governmental activities in the Antarctic Treaty area for which advance notice is required under Article VII (5) of the Antarctic Treaty, including associated logistic support activities.

3. The assessment procedures set out in Annex I shall apply to any change in an activity whether the change arises from an increase or decrease in the intensity of an existing activity, from the addition of an activity, the decommissioning of a facility, or otherwise.

4. Where activities are planned jointly by more than one Party, the Parties involved shall nominate one of their number to coordinate the implementation of the environmental impact assessment procedures set out in Annex I.

ARTICLE 9

ANNEXES

1. The Annexes to this Protocol shall form an integral part thereof.

2. Annexes, additional to Annexes I-IV, may be adopted and become effective in accordance with Article IX of the Antarctic Treaty.

3. Amendments and modifications to Annexes may be adopted and become effective in accordance with Article IX of the Antarctic Treaty, provided that any Annex may itself make provision for amendments and modifications to become effective on an accelerated basis.

4. Annexes and any amendments and modifications thereto which have become effective in accordance with paragraphs 2 and 3 above shall, unless an Annex itself provides otherwise in respect of the entry into effect of any amendment or modification thereto, become effective for a Contracting Party to the Antarctic Treaty which is not an Antarctic Treaty Consultative Party, or which was not an Antarctic Treaty Consultative Party at the time for the adoption, when notice of approval of that Contracting Party has been received by the Depositary.

5. Annexes shall, except to the extent that an Annex provides otherwise, be subject to the procedures for dispute settlement set out in Articles 18 to 20.

ARTICLE 10

ANTARCTIC TREATY CONSULTATIVE MEETINGS

1. Antarctic Treaty Consultative Meetings shall, drawing upon the best scientific and technical advice available:

(a) define, in accordance with the provisions of this Protocol, the general policy for the comprehensive protection of the Antarctic environment and dependent and associated ecosystems; and

(b) adopt measures under Article IX of the Antarctic Treaty for the implementation of this Protocol.

2. Antarctic Treaty Consultative Meetings shall review the work of the Committee and shall draw fully upon its advice and recommendations in

carrying out the tasks referred to in paragraph 1 above, as well as upon the advice of the Scientific Committee on Antarctic Research.

ARTICLE 11

COMMITTEE FOR ENVIRONMENTAL PROTECTION

1. There is hereby established the Committee for Environmental Protection.

2. Each Party shall be entitled to be a member of the Committee and to appoint a representative who may be accompanied by experts and advisors.

3. Observer status in the Committee shall be open to any Contracting Party to the Antarctic Treaty which is not a Party to this Protocol.

4. The Committee shall invited the President of the Scientific Committee on antarctic research and the Chairman of the Scientific Committee for the conservation of Antarctic Marine Living Resources to participate as observers at its sessions. The Committee may also, with the approval of the Antarctic Treaty Consultative Meeting, invite such other relevant scientific, environmental and technical organisations which can contribute to its work to participate as observers at its sessions.

5. The Committee shall present a report on each of its sessions to the Antarctic Treaty Consultative Meeting. The report shall cover all matters considered at the session and shall reflect the views expressed. The report shall be circulated to the Parties and to observers attending the session, and shall thereupon be made publicly available.

6. The Committee shall adopt its rules of procedure which shall be subject to approval by the Antarctic Treaty Consultative Meeting.

ARTICLE 12

FUNCTIONS OF THE COMMITTEE

1. The functions of the Committee shall be to provide advice and formulate recommendations to the Parties in connection with the implementation of this Protocol, including the operation of its Annexes, for consideration at Antarctic Treaty Consultative Meetings, and to perform such other functions as may be referred to it by the Antarctic

Treaty Consultative Meetings. In particular, it shall provide advice on:

(a) the effectiveness of measures taken pursuant to this Protocol;

(b) the need to update, strengthen or otherwise improve such measures;

(c) the need for additional measures, including the need for additional Annexes, where appropriate;

(d) the application and implementation of the environmental impact assessment procedures set out in Article 8 and Annex I;

(e) means of minimizing or mitigating environmental impacts of activities in the Antarctic Treaty area;

(f) procedures for situations requiring urgent action, including response action in environmental emergencies;

(g) the operation and further elaboration of the Antarctic Protected Area system;

(h) inspection procedures, including formats for inspection reports and checklists for the conduct of inspections;

(i) the collection, archiving, exchange and evaluation of information related to environmental protection;

(j) the state of the Antarctic environment; and

(k) the need for scientific research, including environmental monitoring, related to the implementation of this Protocol.

2. In carrying out its functions, the Committee shall, as appropriate, consult with the Scientific Committee on Antarctic Research, the Scientific Committee for the Conservation of Antarctic Marine Living Resources and other relevant scientific, environmental and technical organizations.

ARTICLE 13

COMPLIANCE WITH THIS PROTOCOL

1. Each Party shall take appropriate measures within its competence, including the adoption of laws and regulations, administrative actions and enforcement measures, to ensure compliance with this Protocol.

2. Each Party shall exert appropriate efforts, consistent with the

Charter of the United Nations, to the end that no one engages in any activity contrary to this Protocol.

3. Each Party shall notify all other Parties of the measures it takes pursuant to paragraphs 1 and 2 above.

4. Each Party shall draw the attention of all other Parties to any activity which in its opinion affects the implementation of the objectives and principles of this Protocol.

5. The Antarctic Treaty Consultative Meetings shall draw the attention of any State which is not a Party to this Protocol to any activity undertaken by that State, its agencies, instrumentalities, natural or juridical persons, ships, aircraft or other means of transport which affects the implementation of the objectives and principles of this Protocol.

ARTICLE 14

INSPECTION

1. In order to promote the protection of the Antarctic environment and dependent and associated ecosystems, and to ensure compliance with this Protocol, the Antarctic Treaty Consultative Parties shall arrange, individually or collectively, for inspections by observers to be made in accordance with Article VII of the Antarctic Treaty.

2. Observers are:

(a) observers designated by any Antarctic Treaty Consultative Party who shall be nationals of that Party; and

(b) any observers designated at Antarctic Treaty Consultative Meetings to carry out inspections under procedures to be established by an Antarctic Treaty Consultative Meeting.

3. Parties shall co-operate fully with observers undertaking inspections, and shall ensure that during inspections, observers are given access to all parts of stations, installations, equipment, ships and aircraft open to inspection under Article VII (3) of the Antarctic Treaty, as well as to all records maintained thereon which are called for pursuant to this Protocol.

4. Reports of inspections shall be sent to the Parties whose stations, installations, equipment, ships or aircraft are covered by the reports. After those Parties have been given the opportunity to comment, the reports and any comments thereon shall be circulated to all the Parties and to the Committee, considered at the next Antarctic Treaty Consultative Meeting, and thereafter made publicly available.

ARTICLE 15

EMERGENCY RESPONSE ACTION

1. In order to respond to environmental emergencies in the Antarctic Treaty area, each Party agrees to:

(a) provide for prompt and effective response action to such emergencies which might arise in the performance of scientific research programmes, tourism and all other governmental and non-governmental activities in the Antarctic Treaty area for which advance notice is required under Article VII (5) of the Antarctic Treaty, including associated logistic support activities.

(b) establish contingency plans for response to incidents with potential adverse effects on the Antarctic environment or dependent and associated ecosystems.

2. To this end, the Parties shall:

(a) co-operate in the formulation and implementation of such contingency plans; and

(b) establish procedures for immediate notification of, and co-operative response to, environmental emergencies.

3. In the implementation of this Article, the Parties shall draw upon the advice of the appropriate international organizations.

ARTICLE 16

LIABILITY

Consistent with the objectives of this Protocol for the comprehensive protection of the Antarctic environment and dependent and associated ecosystems, the Parties undertake to elaborate rules and procedures

relating to liability for damage arising from activities taking place in the Antarctic Treaty area and covered by this Protocol. Those rules and procedures shall be included in one or more Annexes to be adopted in accordance with Article 9 (2).

ARTICLE 17

ANNUAL REPORT BY PARTIES

1. Each Party shall report annually on the steps taken to implement this Protocol. Such reports shall include notifications made in accordance with Article 13 (3), contingency plans established in accordance with Article 15 and any other notifications and information called for pursuant to this Protocol for which there is no other provision concerning the circulation and exchange of information.

2. Reports made in accordance with paragraph 1 above shall be circulated to all Parties and to the Committee, considered at the next Antarctic Treaty Consultative Meeting, and made publicly available.

ARTICLE 18

DISPUTE SETTLEMENT

If a dispute arises concerning the interpretation or application of this Protocol, the parties to the dispute shall, at the request of any one of them, consult among themselves as soon as possible with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means to which the parties to the dispute agree.

ARTICLE 19

CHOICE OF DISPUTE SETTLEMENT PROCEDURE

1. Each Party, when signing, ratifying, accepting, approving or acceding to this Protocol, or at any time thereafter, may choose, by written declaration, one or both of the following means for the settlement of disputes concerning the interpretation or application of Articles 7, 8 and 15 and, except to the extent that an Annex provides otherwise, the provisions of any Annex and, insofar as it relates to these Articles and

provisions, Article 13:

(a) the International Court of Justice;

(b) the Arbitral Tribunal.

2. A declaration made under paragraph 1 above shall not affect the operation of Article 18 and Article 20 (2).

3. A party which has not made a declaration under paragraph 1 above or in respect of which a declaration is no longer in force shall be deemed to have accepted the competence of the Arbitral Tribunal.

4. If the parties to a dispute have accepted the same means for the settlement of a dispute, the dispute may be submitted only to that procedure, unless the parties otherwise agree.

5. If the parties to a dispute have not accepted the same means for the settlement of a dispute, or if they have both accepted both means, the dispute may be submitted only to the Arbitral Tribunal, unless the parties otherwise agree.

6. A declaration made under paragraph 1 above shall remain in force until it expires in accordance with its terms or until three months after written notice of revocation has been deposited with the Depositary.

7. A new declaration, a notice of revocation or the expiry of a declaration shall not in any way affect proceedings pending before the International Court of Justice or the Arbitral Tribunal, unless the parties to the dispute otherwise agree.

8. Declarations and notices referred to in this Article shall be deposited with the Depositary who shall transmit copies thereof to all Parties.

ARTICLE 20

DISPUTE SETTLEMENT PROCEDURE

1. If the parties to a dispute concerning the interpretation or application of Articles 7, 8 or 15 or, except to the extent that an Annex provides otherwise, the provisions of any Annex or, insofar as it relates to these Articles and provisions, Article 13, have not agreed on a means

for resolving it within 12 months of the request for consultation pursuant to Article 18, the dispute shall be referred, at the request of any party to the dispute, for settlement in accordance with the procedure determined by Article 19 (4) and (5).

2. The Arbitral Tribunal shall not be competent to decide or rule any matter within the scope of Article IV of the Antarctic Treaty. In addition, nothing in this Protocol shall be interpreted as conferring competence or jurisdiction on the International Court of Justice or any other tribunal established for the purpose of settling disputes between Parties to decide or otherwise rule upon any matter within the scope of Article IV of the Antarctic Treaty.

ARTICLE 21

SIGNATURE

This Protocol shall be open for signature at Madrid on the 4th of October 1991 and thereafter at Washington until the 3rd October 1992 by any State which is a Contracting Party to the Antarctic Treaty.

ARTICLE 22

RATIFICATION, ACCEPTANCE, APPROVAL OR ACCESSION

1. This Protocol is subject to ratification, acceptance or approval by signatory States.

2. After the 3rd of October 1992 this Protocol shall be open for accession by any State which is a Contracting Party to the Antarctic Treaty.

3. Instruments of ratification, acceptance, approval or accession shall be deposited with the Government of the Untied States of America, hereby designated as the Depositary.

4. After the date on which this Protocol has entered into force, the Antarctic Treaty Consultative Parties shall not act upon a notification regarding the entitlement of a Contracting Party to the Antarctic Treaty to appoint representatives to participate in Antarctic Treaty Consultative Meetings in accordance with Article IX (2) of the Antarctic Treaty unless

that Contracting Party has first ratified, accepted, approved or acceded to this Protocol.

ARTICLE 23

ENTRY INTO FORCE

1. This Protocol shall enter into force on the thirtieth day following the date of deposit of instruments of ratification, acceptance, approval or accession by all States which are Antarctic Treaty Consultative Parties at the date on which this Protocol is adopted.

2. For each Contracting Party to the Antarctic Treaty which, subsequent to the date of entry into force of this Protocol, deposits an instrument of ratification, acceptance, approval or accession this Protocol shall enter into force on the thirtieth day following such deposit.

ARTICLE 24

RESERVATIONS

Reservations to this Protocol shall not be permitted.

ARTICLE 25

MODIFICATION OR AMENDMENT

1. Without prejudice to the provision of Article 9, this Protocol may be modified or amended at any time in accordance with the procedures set forth in Article XII (1) (a) and (b) of the Antarctic Treaty.

2. If, after the expiration of 50 years from the date of entry into force of this Protocol, any of the Antarctic Treaty Consultative Parties so requests by a communication addressed to the Depositary, a conference shall be held as soon as practicable to review the operation of this Protocol.

3. A modification or amendment proposed at any Review Conference called pursuant to paragraph 2 above shall be adopted by a majority of the Parties, including 3/4 of the States which are Antarctic Treaty Consultative Parties at the time of adoption of this Protocol.

4. Any modification or amendment adopted pursuant to paragraph 3 above shall enter into force upon ratification, acceptance, approval or

accession by 3/4 of the Antarctic Treaty Consultative Parties, including ratification, acceptance, approval or accession by all States which are Antarctic Treaty Consultative Parties at the time of adoption of this Protocol.

5.(a) With respect to Article 7, the prohibition on Antarctic mineral resource activities contained therein shall continue unless there is in force a binding legal regime on Antarctic mineral resource activities that includes an agreed means for determining whether, and, if so, under which conditions, any such activities would be acceptable. This regime shall fully safeguard the interests of all States referred to in Article IV of the Antarctic Treaty and apply the principles thereof. Therefore, if a modification or amendment to Article 7 is proposed at a Review Conference referred to in paragraph 2 above, it shall include such a binding legal regime.

(b) If any such modification or amendment has not entered into force within 3 years of the date of its adoption, any Party may at any time thereafter notify to the Depositary of its withdrawal from this Protocol, and such withdrawal shall take effect 2 years after receipt of the notification by the Depositary.

ARTICLE 26

NOTIFICATIONS BY THE DEPOSITARY

The Depositary shall notify all Contracting parties to the Antarctic Treaty of the following:

(a) signatures of this Protocol and the deposits of instruments of ratification, acceptance, approval or accession;

(b) the date of entry into force of this Protocol and any additional Annex thereto;

(c) the date of entry into force of any amendment or modification to this Protocol;

(d) the deposit of declarations and notices pursuant to Article 19; and

(e) any notification received pursuant to Article 25 (5) (b).

ARTICLE 27

AUTHENTIC TEXTS AND REGISTRATION WITH THE UNITED NATIONS

1. This Protocol, done in the English, French, Russian and Spanish languages, each version being equally authentic, shall be deposited in the archives of the Government of the Untied States of America, which shall transmit duly certified copies thereof to all Contracting Parties to the Antarctic Treaty.

2. This Protocol shall be registered by the Depositary pursuant to Article 102 of the Charter of the United Nations.

SCHEDULE TO THE PROTOCOL

ARBITRATION

Article 1

1. The Arbitral Tribunal shall be constituted and shall function in accordance with the Protocol, including this Schedule.

2. The Secretary referred to in this Schedule is the Secretary General of the Permanent Court of Arbitration.

Article 2

1. Each Party shall be entitled to designate up to three Arbitrators, at least one of whom shall be designated within three months of the entry into force of the Protocol for that Party. Each Arbitrator shall be experienced in Antarctic affairs, have thorough knowledge of international law and enjoy the highest reputation for fairness, competence and integrity. The names of the persons so designated shall constitute the list of Arbitrators. Each Party shall be at all times maintain the name of at lease one Arbitrator on the list.

2. Subject to paragraph 3 below, an Arbitrator designated by a Party shall remain on the list for a period of five years and shall be eligible for redesignation by that Party for additional five year periods.

3. A Party which designated an Arbitrator may withdraw the name of that Arbitrator from the list. If an Arbitrator dies or if a Party for any reason withdraws from the list the name of an Arbitrator designated by it,

the Party which designated the Arbitrator in questions shall notify the Secretary promptly. An Arbitrator whose name is withdrawn from the list shall continue to serve on any Arbitral Tribunal to which that Arbitrator haw been appointed until the completion of proceedings before the Arbitral Tribunal.

4. The Secretary shall ensure that an up-to-date list is maintained of the Arbitrators designated pursuant to this Article.

Article 3

1. The Arbitral Tribunal shall be composed of three Arbitrators who shall be appointed as follows:

(a) The Party to the dispute commencing the proceedings shall appoint one Arbitrator, who may be its national, from the list referred to in Article 2. This appointment shall be included in the notification referred to in Article 4.

(b) Within 40 days of the receipt of that notification, the other party to the dispute shall appoint the second Arbitrator, who may be its national, from the list referred to in Article 2.

(c) Within 60 days of the appointment of the second Arbitrator, the parties to the dispute shall appoint by agreement the third Arbitrator from the list referred to in Article 2. The third Arbitrator shall not be either a national of, or a person designated by, a party to the dispute, or of the same nationality as either of the first two Arbitrators. The third Arbitrator shall be the Chairperson of the Arbitral Tribunal.

(d) If the second Arbitrator has not been appointed within the prescribed period, or if the parties to the dispute have not reached agreement within the prescribed period on the appointment of the third Arbitrator, the Arbitrator or Arbitrators shall be appointed, at the request of any party to the dispute and within 30 days of the receipt of such request, by the President of the International Court of Justice from the list referred to in Article 2 and subject to the

conditions prescribed in subparagraphs (b) and (c) above. In performing the functions accorded him or her in this subparagraph, the President of the Court shall consult the parties to the dispute.

(e) If the President of the International Court of Justice is unable to perform the functions accorded him or her in subparagraph (d) above or is a national of a party to the dispute, the functions shall be performed by the Vice-President of the Court, except that if the Vice-President is unable to perform the functions or is a national of a party to the dispute the functions shall be performed by the next most senior member of the Court who is available and is not a national of a party to the dispute.

2. Any vacancy shall be filled in the manner prescribed for the initial appointment.

3. In any dispute involving more than two Parties, those Parties having the same interest shall appoint one Arbitrator by agreement within the period specified in paragraph 1 (b) above.

Article 4

The party to the dispute commencing proceedings shall so notify the other party or parties to the dispute and the Secretary in writing. Such notification shall include a statement of the claim and the grounds on which it is based. The notification shall be transmitted by the Secretary to all Parties.

Article 5

1. Unless the parties to the dispute agree otherwise, arbitration shall take place at the Hague, where the records of the Arbitral Tribunal shall be kept. The Arbitral Tribunal shall adopt its own rules of procedure. Such rules shall ensure that each party to the dispute has a full opportunity to be heard and to present its case and shall also ensure that the proceedings are conducted expeditiously.

2. The Arbitral Tribunal may hear and decide counterclaims arising out of the dispute.

Article 6

1. The Arbitral Tribunal, where it considers that *prima facie* it has jurisdiction under the Protocol, may:

(a) at the request of any party to a dispute, indicate such provisional measures as it considers necessary to preserve the respective rights of the parties to the dispute;

(b) prescribe any provisional measures which it considers appropriate under the circumstances to prevent serious harm to the Antarctic environment or dependent or associated ecosystems.

2. The parties to the dispute shall comply promptly with any provisional measures prescribed under paragraph 1 (b) above pending an award under Article 9.

3. Notwithstanding Article 20 (1) and (2) of the Protocol, a party to a dispute may at any time, by notification to the other party or parties to the dispute and to the Secretary in accordance with Article 4, request that the Arbitral Tribunal be constituted as a matter of exceptional urgency to indicate or prescribe emergency provisional measures in accordance with this Article. In such case, the Arbitral Tribunal shall be constituted as soon as possible in accordance with Article 3, except that the time periods in Article 3 (1) (b), (c) and (d) shall be reduced to 14 days in each case. The Arbitral Tribunal shall decide upon the request for emergency provisional measures within two months of the appointment of its Chairperson.

4. Following a decision by the Arbitral Tribunal upon a request for emergency provisional measures in accordance with paragraph 3 above, settlement of the dispute shall proceed in accordance with Articles 18 and 19 of the Protocol.

Article 7

Any Party which believes it has a legal interest, whether general or individual, which may be substantially affected by the award of an Arbitral Tribunal, may unless the Arbitral Tribunal decides otherwise,

intervene in the proceedings.

Article 8

The parties to the dispute shall facilitate the work of the Arbitral Tribunal and, in particular, in accordance with their law and using all means at their disposal, shall provide it with all relevant documents and information, and enable it, when necessary, to call witnesses or experts and receive their evidence.

Article 9

If one of the parties to the dispute does not appear before the Arbitral Tribunal or fails to defend its case, any other party to the dispute may request the Arbitral Tribunal to continue the proceedings and make its award.

Article 10

1. The Arbitral Tribunal shall, on the basis of the provisions of the Protocol and other applicable rules of law that are not incompatible with such provisions, decide such disputes as are submitted to it.

2. The Arbitral Tribunal may decide, *ex aequo et bono*, a dispute submitted to it, if the parties to the dispute so agree.

Article 11

1. Before making its award, the Arbitral Tribunal shall satisfy itself that it has competence in respect of the dispute and that the claim or counterclaim is well founded in fact and law.

2. The award shall be accompanied by a statement of reasons for the decision and shall be communicated to the Secretary who shall transmit it to all Parties.

3. The award shall be final and binding on the parties to the dispute and on any Party which intervened in the proceedings and shall be complied with without delay. The Arbitral Tribunal shall interpret the award at the request of a party to the dispute or of any intervening Party.

4. The award shall have no binding force except in respect of that particular case.

5. Unless the Arbitral Tribunal decides otherwise, the expenses of the Arbitral Tribunal, including the renumeration of these Arbitrators, shall be borne by the parties to the dispute in equal shares.

Article 12

All decisions of the Arbitral Tribunal, including those referred to in Articles 5, 6 and 11, shall be made by a majority of the Arbitrators who may not abstain from voting.

Article 13

This Schedule may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved,, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Schedule which becomes effective in accordance with paragraph 1 above shall thereafter become effective as to any other Party when notice of approval by it has been received by the Depositary.

ANNEX I TO THE PROTOCOL IN ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

ENVIRONMENTAL IMPACT ASSESSMENT

ARTICLE 1

PRELIMINARY STAGE

1. The environmental impacts of proposed activities referred to in Article 8 of the Protocol shall, before their commencement, be considered in accordance with appropriate national procedures.

2. If an activity is determined as having less than a minor or transitory impact, the activity may proceed forthwith.

ARTICLE 2

INITIAL ENVIRONMENTAL EVALUATION

1. Unless it has been determined that an activity will have less than a minor or transitory impact, or unless a Comprehensive Environmental Evaluation is being prepared in accordance with Article 3, an Initial Environmental Evaluation shall be prepared. It shall contain sufficient detail to assess whether a proposed activity may have more than a minor or transitory impact and shall include:

(a) a description of the proposed activity, including its purpose, location, duration, and intensity; and

(b) consideration of alternatives to the proposed activity and any impacts that the activity may have, including consideration of cumulative impacts in the light of existing and known planned activities.

2. If an Initial Environmental Evaluation indicates that a proposed activity is likely to have no more than a minor or transitory impact, the activity may proceed, provided that appropriate procedures, which may include monitoring, are put in place to assess and verify the impact of the activity.

ARTICLE 3

COMPREHENSIVE ENVIRONMENTAL EVALUATION

1. If an Initial Environmental Evaluation indicates or if it is otherwise determined that a proposed activity is likely to have more than a minor or transitory impact, a Comprehensive Environmental Evaluation shall be prepared.

2. A Comprehensive Environmental Evaluation shall include:

(a) a description of the proposed activity including its purpose, location, duration and intensity, and possible alternatives to the activity, including the alternative of not proceeding, and the consequences of those alternatives;

(b) a description of the initial environmental reference state with

which predicted changes are to be compared and a prediction of the future environmental reference state in absence of the proposed activity;

(c) a description of the methods and data used to forecast the impacts of the proposed activity;

(d) estimation of the nature, extent, duration, and intensity of the likely direct impacts of the proposed activity;

(e) consideration of possible indirect or second order impacts of the proposed activity;

(f) consideration of cumulative impacts or second order impacts of the proposed activity;

(g) identification of measures, including monitoring programmes, that could be taken to minimize or mitigate impacts of the proposed activity and to detect unforeseen impacts and that could provide early warning of any adverse effects of the activity as well as to deal promptly and effectively with accidents;

(h) identification of unavoidable impacts of the proposed activity;

(i) consideration of the effects of the proposed activity on the conduct of scientific research and on other existing uses and values;

(j) an identification of gaps in knowledge and uncertainties encountered in compiling the information required under this paragraph;

(k) a non-technical summary of the information provided under this paragraph; and

(l) the name and address of the person or organization which prepared the Comprehensive Environmental Evaluation and the address to which comments thereon should be directed.

3. The draft Comprehensive Environmental Evaluation shall be made publicly available and shall be circulated to all Parties, which shall also make it publicly available, for comment. A period of 90 days shall be allowed for the receipt of comments.

4. The draft Comprehensive Environmental Evaluation shall be forwarded to

the Committee at the same time as it is circulated to the Parties, and at least 120 days before the next Antarctic Treaty Consultative Meeting, for consideration as appropriate.

5. No final decision shall be taken to proceed with the proposed activity in the Antarctic Treaty area unless there has been an opportunity for consideration of the draft Comprehensive Environmental Evaluation by the Antarctic Treaty Consultative Meeting on the advice of the Committee, provided that no decision to proceed with a proposed activity shall be delayed through the operation of this paragraph for longer than 15 months from the date of circulation of the draft Comprehensive Environmental Evaluation.

6. A final Comprehensive Environmental Evaluation shall address and shall include or summarize comments received on the draft Comprehensive Environmental Evaluation. The final Comprehensive Environmental Evaluation, notice of any decisions relating thereto, and any evaluation of the significance of the predicted impacts in relation to the advantages of the proposed activity, shall be circulated to all Parties, which shall also make them publicly available, at least 60 days before the commencement of the proposed activity in the Antarctic Treaty area.

ARTICLE 4

DECISIONS TO BE BASED ON COMPREHENSIVE ENVIRONMENTAL EVALUATIONS

Any decision on whether a proposed activity, to which Article 3 applies, should proceed, and, if so, whether in its original or in a modified form, shall be based on the Comprehensive Environmental Evaluation as well as other relevant considerations.

ARTICLE 5

MONITORING

1. Procedures shall be put in place, including appropriate monitoring of key environmental indicators, to assess and verify the impact of any activity that proceeds following the completion of a Comprehensive

Environmental Evaluation.

2. The procedures referred to in paragraph 1 above and in Article 2 (2) shall be designed to provide a regular and verifiable record of the impacts of the activity in order *inter alia*, to:

(a) enable assessments to be made of the extent to which such impacts are consistent with this Protocol; and

(b) provide information useful for minimizing or mitigating impacts, and, where appropriate, information on the need for suspension, cancellation or modification of the activity.

ARTICLE 6

CIRCULATION OF INFORMATION

1. The following information shall be circulated to the Parties, forwarded to the Committee and made publicly available:

(a) a description of the procedures referred to in Article 1;

(b) an annual list of any Initial Environmental Evaluations prepared in accordance with Article 2 and any decisions taken in consequence thereof;

(c) significant information obtained, and any action taken in consequence thereof, from procedures put in place in accordance with Articles 2 (2) and 5; and

(d) information referred to in Article 3 (6).

2. Any Initial Environmental Evaluation prepared in accordance with Article 2 shall be made available on request.

ARTICLE 7

CASES OF EMERGENCY

1. This Annex shall not apply in cases of emergency relating to the safety of human life or of ships, aircraft, or equipment and facilities of high value, or the protection of the environment, which require an activity to be undertaken without completion of the procedures set out in this Annex.

2. Notice of activities undertaken in cases of emergency, which would

otherwise have required preparation of a Comprehensive Environmental Evaluation, shall be circulated immediately to the parties and forwarded to the Committee and a full explanation of the activities carried out shall be provided within 90 days of those activities.

ARTICLE 8

AMENDMENT OR MODIFICATION

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise the amendment or modification shall be deemed to have been approved, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with paragraph 1 above shall thereafter become effective as to any other Party when notice of approval by it has been received by the Depositary.

ANNEX II TO THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

CONSERVATION OF ANTARCTIC FAUNA AND FLORA

ARTICLE 1

DEFINITIONS

For the purpose of this Annex:

(a) "native mammal" means any member of any species belonging to the Class Mammalia, indigenous to the Antarctic Treaty area or occurring there seasonally through natural migrations;

(b) "native bird" means any member, at any stage of its life cycle (including eggs), of any species of the Class Aves indigenous to the Antarctic Treaty area or occurring there seasonally through natural

migrations;

(c) "native plant" means any terrestrial or freshwater vegetation, including bryophytes, lichens, fungi and algae, at any stage of its life cycle (including seeds, and other propagules), indigenous to the Antarctic Treaty area;

(d) "native invertebrate" means any terrestrial or freshwater invertebrate, at any stage of its life cycle, indigenous to the Antarctic Treaty area;

(e) "appropriate authority" means any person or agency authorized by a Party to issue permits under this Annex;

(f) "permit" means a formal permission in writing issued by an appropriate authority;

(g) "take" or "taking" means to kill, injure, capture, handle or molest, a native mammal or bird, or to remove or damage such quantities of native plants that their local distribution or abundance would be significantly affected;

(h) "harmful interference" means:

(i) flying or landing helicopters or other aircraft in a manner that disturbs concentrations of birds and seals;

(ii) using vehicles or vessels, including hovercraft and small boats, in a manner that disturbs concentrations of birds and seals;

(iii) using explosives or firearms in a manner that disturbs concentrations of birds and seals;

(iv) wilfully disturbing breeding or moulting birds or concentrations of birds and seals by persons on foot;

(v) significantly damaging concentrations of native terrestrial plants by landing aircraft, driving vehicles, or walking on them, or by other means;

(i) "International Convention for the Regulation of Whaling" means the Convention done at Washington on 2 December 1946.

ARTICLE 2

CASES OF EMERGENCY

1. The provisions of this Annex shall not apply in cases of emergency involving safety of human life or of ships, aircraft, or equipment and facilities of high value, or environmental protection.

2. Notice of activities undertaken in cases of emergency shall be circulated promptly to all Parties.

ARTICLE 3

PROTECTION OF NATIVE FAUNA AND FLORA

1. Taking or harmful interference shall be prohibited, except in accordance with a permit.

2. Such permits shall specify the authorized activity, including when, where and by whom it is to be conducted and shall be issued only in the following circumstances:

(a) to provide specimens for scientific study or scientific information;

(b) to provide specimens for museums, herbaria, zoological and botanical gardens, or other educational or cultural institutions or uses; and

(c) to provide for unavoidable consequences of scientific activities not otherwise authorized under sub-paragraphs a or b above, or of the construction and operation of scientific support facilities.

3. The issue of such permits shall be limited so as to ensure that:

(a) no more native mammals, birds, or plants are taken than are strictly necessary to meet the purposes set forth in paragraph 2 above;

(b) only small numbers of native mammals or birds are killed and in no case more native mammals or birds are killed from local populations than can, in combination with other permitted takings normally be replaced by natural reproduction in the following season; and

(c) the diversity of species, as well as the habitats essential to their existence, and the balance of the ecological systems existing within the Antarctic Treaty area are maintained.

4. Any species of native mammals, birds and plants listed in Appendix A

to this Annex shall be designated "Specially Protected Species", and shall be accorded special protection by the Parties.

5. A permit shall not be issued to take a Specially Protected Species unless the taking:

(a) is for a compelling scientific purpose;

(b) will not jeopardize the survival or recovery of that species or local population; and

(c) uses non-lethal techniques where appropriate.

6. All taking of native mammals and birds shall be done in the manner that involves the least degree of pain and suffering practicable.

ARTICLE 4

INTRODUCTION OF NON-NATIVE SPECIES, PARASITES AND DISEASES

1. No species of animal or plant not native to the Antarctic Treaty area shall be introduced onto land or ice shelves, or into water in the Antarctic Treaty area except in accordance with a permit.

2. Dogs shall not be introduced onto land or ice shelves and dogs currently in those areas shall be removed by April 1, 1994.

3. Permits under paragraph 1 above shall be issued to allow the importation only of the animals and plants listed in Appendix B to this Annex and shall specify the species, numbers and, if appropriate, age and sex and precautions to be taken to prevent escape or contact with native fauna and flora.

4. Any plant or animal for which a permit has been issued in accordance with paragraphs 1 and 3 above, shall, prior to expiration of the permit, be removed from the Antarctic Treaty area or be disposed of by incineration or equally effective means that eliminates risk to native fauna or flora. The permit shall specify this obligation. Any other plant or animal introduced into the Antarctic Treaty area not native to that area, including any progeny, shall be removed or disposed of, by incineration or by equally effective means, so as to be rendered sterile, unless it is determined that they pose no risk to native flora or fauna.

5. Nothing in this Article shall apply to the importation of food into the Antarctic Treaty area provided that no live animals are imported for this purpose and all plants and animal parts and products are kept under carefully controlled conditions and disposed of in accordance with Annex III to the Protocol and Appendix C to this Annex.

6. Each Party shall require that precautions, including those listed in Appendix C to this Annex, be taken to prevent the introduction of micro-organisms (e.g., viruses, bacteria, parasites, yeasts, fungi) not present in the native fauna and flora.

ARTICLE 5

INFORMATION

Each Party shall prepare and make available information setting forth, in particular, prohibited activities and providing lists of Specially Protected Species and relevant Protected Areas to all those persons present or intending to enter the Antarctic Treaty area with a view to ensuring that such persons understand and observe the provisions of this Annex.

ARTICLE 6

EXCHANGE OF INFORMATION

1. The Parties shall make arrangements for:

(a) collecting and exchanging records (including records of permits) and statistics concerning the numbers or quantities of each species of native mammal, bird or plant taken annually in the Antarctic Treaty area;

(b) obtaining and exchanging information as to the status of native mammals, birds, plants, and invertebrates in the Antarctic Treaty area, and the extent to which any species or population needs protection;

(c) establishing a common form in which this information shall be submitted by Parties in accordance with paragraph 2 below.

2. Each Party shall inform the other Parties as well as the Committee

before the end of November each year of any step taken pursuant to paragraph 1 above and of the number and nature of permits issued under this Annex in the preceding period of 1st July to 30th June.

ARTICLE 7

RELATIONSHIP WITH OTHER AGREEMENTS OUTSIDE THE ANTARCTIC TREATY SYSTEM

Nothing in this Annex shall derogate from the rights and obligations of Parties under the International Convention for the Regulation of Whaling.

ARTICLE 8

REVIEW

The Parties shall keep under continuing review measures for the conservation of Antarctic fauna and flora, taking into account any recommendations from the Committee.

ARTICLE 9

AMENDMENT OR MODIFICATION

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX 91) of the Antarctic treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period of time or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with paragraph 1 above shall thereafter become effective as to any other Party when notice of approval by it has been received by the Depositary.

APPENDICES TO THE ANNEX

APPENDIX A:

SPECIALLY PROTECTED SPECIES

All species of the genus *Arctocephalus*, Fur Seals. *Ommatophoca rossii*,

Ross Seal.

APPENDIX B:

IMPORTATION OF ANIMALS AND PLANTS

The following animals and plants may be imported into the Antarctic Treaty area in accordance with permits issued under Article 4 of this Annex:

(a) domestic plants; and

(b) laboratory animals and plants including viruses, bacteria, yeasts and fungi.

APPENDIX C:

PRECAUTIONS TO PREVENT INTRODUCTION OF MICRO-ORGANISMS

1. Poultry. No live poultry or other living birds shall be brought into the Antarctic Treaty area. Before dressed poultry is packaged for shipment to the Antarctic Treaty area, it shall be inspected for evidence of disease, such as Newcastle's Disease, tuberculosis, and yeast infection. Any poultry or parts not consumed shall be removed from the Antarctic Treaty area or disposed of by incineration or equivalent means that eliminates risks to native flora and fauna.

2. The importation of non-sterile soil shall be avoided to the maximum extent practicable.

ANNEX III TO THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

WASTE DISPOSAL AND WASTE MANAGEMENT

ARTICLE 1

GENERAL OBLIGATIONS

1. This Annex shall apply to activities undertaken in the Antarctic Treaty area pursuant to scientific research programmes, tourism and all other governmental and non-governmental activities in the Antarctic Treaty area for which advance notice is required under Article VII (5) of the Antarctic Treaty, including associated logistic support activities.

2. The amount of wastes produced or disposed of in the Antarctic Treaty

area shall be reduced as far as practicable so as to minimise impact on the Antarctic environment and to minimise interference with the natural values of Antarctica, with scientific research and with other uses of Antarctica which are consistent with the Antarctic Treaty.

3. Waste storage, disposal and removal from the Antarctic Treaty area, as well as recycling and source reduction, shall be essential considerations in the planning and conduct of activities in the Antarctic Treaty area.

4. Wastes removed from the Antarctic Treaty area shall, to the maximum extent practicable, be returned to the country from which the activities generating the waste were organized or to any other country in which arrangements have been made for the disposal of such wastes in accordance with relevant international agreements.

5. Past and present waste disposal sites on land and abandoned work sites of Antarctic activities shall be cleaned up by the generator of such wastes and the user of such sites. This obligation shall not be interpreted as requiring:

(a) the removal of any structure designated as a historic site or monument; or

(b) the removal of any structure or waste material in circumstances where the removal by any practical option would result in greater adverse environmental impact than leaving the structure or waste material in its existing location.

ARTICLE 2

WASTE DISPOSAL BY REMOVAL FROM THE ANTARCTIC TREATY AREA

1. The following wastes, if generated after entry into force of this Annex, shall be removed from the Antarctic Treaty area by the generator of such wastes:

(a) radio-active materials;

(b) electrical batteries;

(c) fuel, both liquid and solid;

(d) wastes containing harmful levels of heavy metals or acutely toxic or harmful persistent compounds;

(e) poly-vinyl chloride (PVC), polyurethane foam, polystyrene foam, rubber and lubricating oils, treated timbers and other products which contain additives that could produce harmful emissions if incinerated;

(f) all other plastic wastes, except low density polyethylene containers (such as bags for storing wastes), provided that such containers shall be incinerated in accordance with Articles 3 (1);

(g) fuel drums; and

(h) other solid, non-combustible wastes;

provided that the obligation to remove drums and solid non-combustible wastes contained in subparagraphs (g) and (h) above shall not apply in circumstances where the removal of such wastes by any practical option would result in greater adverse environmental impact than leaving them in their existing locations.

2. Liquid wastes which are not covered by paragraph 1 above and sewage and domestic liquid wastes, shall, to the maximum extent practicable, be removed from the Antarctic Treaty area by the generator of such wastes, unless incinerated, autoclaved or otherwise treated to be made sterile:

(a) residues of carcasses of imported animals;

(b) laboratory culture of micro-organisms and plant pathogens; and

(c) introduced avian products.

ARTICLE 3

WASTE DISPOSAL BY INCINERATION

1. Subject to paragraph 2 below, combustible wastes, other than those referred to in Article 2 (1), which are not removed from the Antarctic Treaty area shall be burnt in incinerators which to the maximum extent practicable reduce harmful emissions. Any emission standards and equipment guidelines which may be recommended by, inter alia, the committee and the Scientific Committee on Antarctic Research shall be taken into account.

The solid residue of such incineration shall be removed from the Antarctic Treaty area.

2. All open burning of wastes shall be phased out as soon as practicable, but no later than the end of the 1998/1999 season. Pending the completion of such phase-out, when it is necessary to dispose of wastes by open burning, allowance shall be made for the wind direction and speed and the type of wastes to be burnt to limit particulate deposition and to avoid such deposition over areas of special biological, scientific, historic, aesthetic or wilderness significance including, in particular, areas accorded protection under the Antarctic Treaty.

ARTICLE 4

OTHER WASTE DISPOSAL ON LAND

1. Wastes not removed or disposed of in accordance with Articles 2 and 3 shall not be disposed of onto ice-free areas or into fresh water systems.

2. Sewage, domestic liquid wastes and other liquid wastes not removed from the Antarctic Treaty area in accordance with Article 2, shall, to the maximum extent practicable, not be disposed of onto sea ice, ice shelves or the grounded ice-sheet, provided that such wastes which are generated by stations located inland on ice shelves or on the grounded ice-sheet may be disposed of in deep ice pits where such disposal is the only practicable option. Such pits shall not be located on known ice-flow lines which terminate at ice-free areas or in areas of high ablation.

3. Wastes generated at field camps shall, to the maximum extent practicable, be removed by the generator of such wastes to supporting stations or ships for disposal in accordance with this Annex.

ARTICLE 5

DISPOSAL OF WASTE IN THE SEA

1. Sewage and domestic liquid wastes may be discharged directly into the sea, taking into account the assimilative capacity of the receiving marine environment and provided that:

(a) such discharge is located, wherever practicable, where conditions

exist for initial dilution and rapid dispersal; and

(b) large quantities of such wastes (generated in a station where the average weekly occupancy over the austral summer is approximately 30 individuals or more) shall be treated at least by maceration.

2. The by-product of sewage treatment by the Rotary Biological Contractor process or similar processes may be disposed of into the sea provided that such disposal does not adversely affect the local environment, and provided also that any such disposal at sea shall be in accordance with Annex IV to the Protocol.

ARTICLE 6

STORAGE OF WASTE

All wastes to be removed from the Antarctic Treaty area, or otherwise disposed of, shall be stored in such a way as to prevent their dispersal into the environment.

ARTICLE 7

PROHIBITED PRODUCTS

No polychlorinated biphenyls (PCBs), non-sterile soil, polystyrene beads, chips or similar forms of packaging, or pesticides (other than those required for scientific, medical or hygiene purposes) shall be introduced onto land or ice shelves or into water in the Antarctic Treaty area.

ARTICLE 8

WASTE MANAGEMENT PLANNING

1. Each Party which itself conducts activities in the Antarctic Treaty area shall, in respect of those activities, establish a waste disposal classification system as a basis for recording wastes and to facilitate studies aimed at evaluating the environmental impacts of scientific activity and associated logistical support. To that end, wastes produced shall be classified as:

(a) sewage and domestic liquid wastes (Group 1);

(b) other liquid wastes and chemicals, including fuels and lubricants (Group 2);

(c) solids to be combusted (Group 3);

(d) other solid wastes (Group 4); and

(e) radioactive materials (Group 5).

2. In order to reduce further the impact of waste on the Antarctic environment, each such Party shall prepare and annually review and update its waste management plans (including waste reduction, storage and disposal), specifying for each fixed site, for field camps generally, and for each ship (other than small boats that are part of the operations of fixed sites or of ships and taking into account existing management plans for ships):

(a) programmes for cleaning up existing waste disposal sites and abandoned work sites;

(b) current and planned waste management arrangements, including final disposal;

(c) current and planned arrangements for analyzing the environmental effects of waste and waste management; and

(d) other efforts to minimise any environmental effects of wastes and waste management.

3. Each such Party shall, as far as is practicable, also prepare an inventory of locations of past activities (such as traverses, fuel depots, field bases, crashed aircraft) before the information is lost, so that such locations can be taken into account in planning future scientific programmes (such as snow chemistry, pollutants in lichens or ice core drilling).

ARTICLE 9

CIRCULATION AND REVIEW OF WASTE MANAGEMENT PLANS

1. The waste management plans prepared in accordance with Article 8, reports on their implementation, and the inventories referred to in Article 8 (3), shall be included in the annual exchanges of information in accordance with Articles III and VII of the Antarctic Treaty and related Recommendations under Article IX of the Antarctic Treaty.

2. Each Party shall send copies of its waste management plans, and reports on their implementation and review, to the Committee.

3. The Committee may review waste management plans and reports thereon and may offer comments, including suggestions for minimising impacts and modifications of the Parties.

4. The Parties may exchange information and provide advice on, inter alia, available low waste technologies, reconversion of existing installations, special requirements for effluents, and appropriate disposal and discharge methods.

ARTICLE 10

MANAGEMENT PRACTICES

Each Party shall:

(a) designate a waste management official to develop and monitor waste management plans; in the field, this responsibility shall be delegated to an appropriate person at each site;

(b) ensure that members of its expeditions receive training designed to limit the impact of its operations on the Antarctic environment and to inform them of requirements of this Annex; and

(c) discourage the use of poly-vinyl chloride (PVC) products and ensure that its expeditions to the Antarctic Treaty area are advised of any PVC products they may introduce in the Antarctic Treaty area in order that they may be removed subsequently in accordance with this Annex.

ARTICLE 11

REVIEW

This Annex shall be subject to regular review in order to ensure that it is updated to reflect improvement in waste disposal technology and procedures and to ensure thereby maximum protection of the Antarctic environment.

ARTICLE 12

CASES OF EMERGENCY

1. This Annex shall not apply in cases of emergency relating to the safety of human life or of ships, aircraft or other equipment and facilities of high value.

2. Notice of activities undertaken in cases of emergency shall be circulated promptly to all Parties.

ARTICLE 13

AMENDMENT OR MODIFICATION

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, such amendment or modification shall be deemed to have been approved, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period of time or that it is unable to approve the amendment.

2. Any amendment or modification of this Annex which becomes effective in accordance with paragraph 1 above shall thereafter become effective as to any other party when notice of approval by it has been received by the Depositary.

ANNEX IV TO THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

PREVENTION OF MARINE POLLUTION

ARTICLE 1

DEFINITIONS

For the purposes of this Annex:

(a) "discharge" means any release howsoever caused from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying;

(b) "garbage" means all kinds of victual, domestic and operational waste excluding fresh fish and parts thereof generated during the normal operation of the ship except those substances which are covered by Articles 3 and 4;

(c) "MARPOL 73/78" means the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978 relating thereto and by any other amendment in force thereafter;

(d) "noxious liquid substance" means any noxious liquid substance as defined in Annex II of MARPOL 73/78;

(e) "oil" means petroleum in any form including crude oil, fuel oil, sludge, oil refuse and refined oil products (other than petrochemicals which are subject to the provisions of Article 4);

(f) "oily mixture" means a mixture with any oil content; and

(g) "ship" means a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms.

ARTICLE 2

APPLICATION

This Annex applies, with respect to each Party, to ships entitled to fly its flag and with respect to any other ship engaged in or supporting its Antarctic operations, while operating in the Antarctic Treaty area.

ARTICLE 3

DISCHARGE OF OIL

1. Any discharge into the sea of oil or oily mixture shall be prohibited, except in cases permitted under Annex I of MARPOL 73/78. While operating in the Antarctic Treaty area, ships shall retain on board all sludge, dirty ballast, tank washing water and other oily residues and mixtures which may not be discharged into the sea. Ships shall discharge these residues only outside the Antarctic Treaty area, at reception facilities or as otherwise permitted under Annex I of MARPOL.

2. This Article shall not apply to:

(a) the discharge into the sea of oil or oily mixture resulting from damage to a ship or its equipment:

(i) provided that all reasonable precautions have been taken after the occurrence of the damage or discovery of the discharge for the purpose of preventing or minimizing the discharge; and

(ii) except if the owner or the master acted either with intent to cause damage, or recklessly and with the knowledge that damage would probably result: or

(b) the discharge into the sea of substances containing oil which are being used for the purpose of combating specific pollution incidents in order to minimize the damage from pollution.

ARTICLE 4

DISCHARGE OF NOXIOUS LIQUID SUBSTANCES

The discharge into the sea of any noxious liquid substance, and any other chemical or other substances, in quantities or concentrations that are harmful to the marine environment, shall be prohibited.

ARTICLE 5

DISPOSAL OF GARBAGE

1. The disposal into the sea of all plastics, including but not limited to synthetic ropes, synthetic fishing nets, and plastic garbage bags, shall be prohibited.

2. The disposal into the sea of all other garbage, including paper products, rags, glass, metal, bottles, crockery, dunnage, incineration ash, lining and packing materials, shall be prohibited.

3. The disposal into the sea of food wastes may be permitted when they have passed through a comminuter or grinder, provided that such disposal shall, except in cases permitted under Annex V of MARPOL 73/78, be made as far as practicable from land and ice shelves but in any case not less than 12 nautical miles from the nearest land or ice shelf. Such comminuted or ground food wastes shall be capable of passing through a screen with openings no greater than 25 millimeters.

4. When a substance or material covered by this article is mixed with other such substance or material for discharge or disposal, having different disposal or discharge requirements, the most stringent disposal or discharge requirements shall apply.

5. The provisions of paragraphs 1 and 2 above shall not apply to :

(a) the escape of garbage resulting from damage to a ship or its equipment provided all reasonable precautions have been taken, before and after the occurrence of the damage, for the purpose of preventing or minimizing the escape; or

(b) the accidental loss of synthetic fishing nets, provided all reasonable precautions have been taken to prevent such loss.

6. The Parties shall, where appropriate, require the use of garbage record books.

ARTICLE 6

DISCHARGE OF SEWAGE

1. Except where it would unduly impair Antarctic operations:

(a) each Party shall eliminate all discharge into the sea of untreated sewage ("sewage" being defined in Annex IV of MARPOL 73/78) within 12 nautical miles of land or ice shelves;

(b) beyond such distance, sewage stored in a holding tank shall not be discharged instantaneously but shall be discharged at a moderate rate of speed and, where practicable, while the ship is en route at a speed of no less than 4 knots.

This paragraph does not apply to ships certified to carry not more than 10 persons.

2 The parties shall, where appropriate, require the use of sewage record books.

ARTICLE 7

CASES OF EMERGENCY

1. Articles 3, 4, 5 and 6 of this Annex shall not apply in cases of emergency relating to the safety of a ship and those on board or saving

life at sea.

2. Notice of activities undertaken in cases of emergency shall be circulated promptly to all Parties and to the Committee.

ARTICLE 8

EFFECT ON DEPENDENT AND ASSOCIATED ECOSYSTEMS

In implementing the provisions of this Annex, due consideration shall be given to the need to avoid detrimental effects on dependent and associated ecosystems, outside the Antarctic Treaty area.

ARTICLE 9

SHIP RETENTION CAPACITY AND RECEPTION FACILITIES

1. Each Party shall undertake to ensure that all ships entitled to fly its flag and any other ship engaged in or supporting its Antarctic operations, before entering the Antarctic Treaty area, are fitted with a tank or tanks of sufficient capacity on board for the retention of all sludge, dirty ballast, tank washing water, other oily residues and mixtures, and have sufficient capacity for garbage, while operating in the Antarctic Treaty area and have concluded arrangements to discharge such oily residues and garbage at a reception facility after leaving that area. Ships shall also have sufficient capacity for noxious liquid substances.

2. Each Party at whose ports ships depart en route to or arrive from the Antarctic Treaty area undertakes to ensure that as soon as practicable adequate facilities are provided for the reception of all sludge, dirty ballast, tank washing water, other oily residues and mixtures, and garbage from ships, without causing undue delay, and according to the needs of the ships using them.

3. Parties operating ships which depart to or arrive from the Antarctic Treaty area at ports of other parties shall consult with those Parties with a view to ensuring that the establishment of port reception facilities does not place inequitable burden on Parties adjacent to the Antarctic Treaty area.

ARTICLE 10

DESIGN, CONSTRUCTION, MANNING AND EQUIPMENT OF SHIPS

In the design, construction, manning and equipment of ships engaged in or supporting Antarctic operations, each Party shall take into account the objectives of this Annex.

ARTICLE 11

SOVEREIGN IMMUNITY

1. This Annex shall not apply to any warship, naval auxiliary or other ship owned or operated by a State and used, for the time being, only on government non-commercial service. However, each party shall ensure by the adoption of appropriate measures not impairing the operations or operational capabilities of such ships owned or operated by it, that such ships act in a manner consistent, so far as is reasonable and practicable, with this Annex.

2. In applying paragraph 1 above, each Party shall take into account the importance of protecting the Antarctic environment.

3. Each Party shall inform the other Parties of how it implements this provision.

4. The dispute settlement procedure set out in Articles 18 to 20 of the Protocol shall not apply to this Article.

ARTICLE 12

PREVENTIVE MEASURES AND EMERGENCY PREPAREDNESS

AND RESPONSE

1. In order to respond more effectively to marine pollution emergencies or the threat thereof in the Antarctic Treaty area the Parties, in accordance with Article 15 of the Protocol, shall develop contingency plans for marine pollution response in the Antarctic Treaty area, including contingency plans for ships (other than small boats that are part of the operations of fixed sites or of ships) operating in the Antarctic Treaty area, particularly ships carrying oil as cargo and for oil spills originating from coastal installations which enter into the

marine environment. To this end they shall:

(a) co-operate in the formulation and implementation of such plans; and

(b) draw on the advice of the Committee, the International Maritime Organization and other international organizations.

2. The Parties shall also establish procedures for co-operative response to pollution emergencies and shall take appropriate response actions in accordance with such procedures.

ARTICLE 13

REVIEW

The Parties shall keep under continuous review the provisions of this Annex and other measures to prevent, reduce and respond to pollution of the Antarctic marine environment, including any amendments and new regulations adopted under MARPOL 73/78, with a view to achieving the objectives of this Annex.

ARTICLE 14

RELATIONSHIP WITH MARPOL 73/78

With respect to those Parties which are also Parties to MARPOL 73/78, nothing in this Annex shall derogate from the specific rights and obligations thereunder.

ARTICLE 15

AMENDMENT OR MODIFICATION

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with paragraph 1 above shall thereafter become effective as to

any other Party when notice of approval by it has been received by the Depositary.

APPENDIX 5

ANNEX V TO THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

AREA PROTECTION AND MANAGEMENT

(Annex to Recommendation XVI-10)

ARTICLE 1

DEFINITIONS

For the purposes of this Annex:

(a) "appropriate authority" means any person or agency authorised by a Party to issue permits under this Annex;

(b) "permit" means a formal permission in writing issued by an appropriate authority;

(c) "Management Plan" means a plan to manage the activities and protect the special value or values in an Antarctic Specially Protected Area or an Antarctic Specially Managed Area.

ARTICLE 2

OBJECTIVES

For the purposes set out in this Annex, any area, including any marine area, may be designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area. Activities in those Areas shall be prohibited, restricted or managed in accordance with Management Plans adopted under the provisions of this Annex.

ARTICLE 3

ANTARCTIC SPECIALLY PROTECTED AREAS

1. Any area, including any marine area, may be designated as an Antarctic Specially Protected Area to protect outstanding environmental, scientific, historic, aesthetic or wilderness values, any combination of those values, or ongoing or planned scientific research.

2. Parties shall seek to identify, within a systematic environmental-geographical framework, and to include in the series of Antarctic Specially Protected Areas:

(a) areas kept inviolate from human interference so that future comparisons may be possible with localities that have been affected by human activities;

(b) representative examples of major terrestrial, including glacial and aquatic, ecosystems and marine ecosystems;

(c) areas with important or unusual assemblages of species, including major colonies of breeding native birds or mammals;

(d) the type locality or only known habitat of any species;

(f) examples of outstanding geological, glaciological or geomorphological features;

(g) areas of outstanding aesthetic and wilderness value;

(h) sites or monuments of recognised historic value; and

(i) such other areas as may be appropriate to protect the values set out in paragraph 1 above.

3. Specially Protected Areas and Sites of Special Scientific Interest designated as such by past Antarctic Treaty Consultative Meetings are hereby designated as Antarctic Specially Protected Areas and shall be renamed and renumbered accordingly.

4. Entry into and Antarctic Specially Protected Area shall be prohibited except in accordance with a permit issued under Article 7.

ARTICLE 4

ANTARCTIC SPECIALLY MANAGED AREAS

1. Any area, including any marine area, where activities are being conducted or may in the future be conducted, may be designated as an Antarctic Specially Managed Area to assist in the planning and co-ordination of activities, avoid possible conflicts, improve co-operation between Parties or minimise environmental impacts.

2. Antarctic Specially Managed Areas may include:

(a) area where activities pose risks of mutual interference or cumulative environmental impacts: and

(b) sites or monuments of recognised historic value.

3. Entry into an Antarctic Specially Managed Area shall not require a permit.

4. Notwithstanding paragraph 3 above, an Antarctic Specially Managed area may contain one or more Antarctic Specially Protected Areas, entry into which shall be prohibited except in accordance with a permit issued under Article 7.

ARTICLE 5

MANAGEMENT PLANS

1. Any Party, the Committee, the Scientific Committee for Antarctic Research or the Commission for the Conservation of Antarctic Marine Living Resources may propose an area for designation as an Antarctic Specially Protected Area or an Antarctic Specially Managed area by submitting a proposed Management Plan to the Antarctic Treaty Consultative Meeting.

2. The area proposed for designation shall be of sufficient not defined size to protect the values for which the special protection or management is required.

3. Proposed Management Plans shall include, as appropriate:

(a) a description of the value or values for which special protection or management is required;

(b) a statement of the aims and objectives of the Management Plan for the protection or management of those values;

(c) management activities which are to be undertaken to protect the values for which special protection or management is required;

(d) a period of designation, if any;

(e) a description of the area, including:

(i) the geographical co-ordinates, boundary markers and natural features that delineate the area;

(ii) access to the area by land, sea or air including marine

approaches and anchorages, pedestrian and vehicular routes within the area, and aircraft routes and landing areas;

(iii) the location in or near the area of other Antarctic Specially Protected Areas or Antarctic Specially Managed Areas designated under this Annex, or other protected areas designated in accordance with measures adopted under other components of the Antarctic Treaty System;

(f) the identification of zones within the area, in which activities are to be prohibited, restricted or managed for the purpose of achieving the aims and objectives referred to in subparagraph (b) above;

(g) maps and photographs that show clearly the boundary of the area in relation to surrounding features and key features within the area;

(h) supporting documentation;

(i) in respect of an area proposed for designation as an Antarctic Specially Protected Area, a clear description of the conditions under which permits may be granted by the appropriate authority regarding:

(i) access to and movement within or over the area;

(ii) activities which are or may be conducted within the area, including restrictions on time and place;

(iii) the installation, modification, or removal of structures;

(iv) the location of field camps;

(v) restrictions on materials and organisms which may be brought into the area;

(vi) the taking of or harmful interference with native flora and fauna;

(vii) the collection or removal of anything not brought into the area by the permit-holder;

(viii) the disposal of waste;

(ix) measures that may be necessary to ensure that the aims and objectives of the Management Plan can continue to be met; and

(x) requirements for reports to be made to the appropriate authority regarding visits to the area;

(j) in respect of an area proposed for designation as an Antarctic Specially Managed Area, a code of conduct regarding:

(i) access to and movement within or the area;

(ii) activities which are or may be conducted within the area, including restrictions on time and place;

(iii) the installations, modification, or removal of structures;

(iv) the location of field camps;

(v) the taking of or harmful interference with native flora and fauna;

(vi) the collection or removal of anything not brought into the area by the visitor;

(vii) the disposal of waste; and

(viii) any requirements for reports to be made to the appropriate authority regarding visits to the area; and

(k) provision relating to the circumstances in which parties should seek to exchange information in advance of activities when they propose to conduct.

ARTICLE 6

DESIGNATION PROCEDURES

1. Proposed Management Plans shall be forwarded to the Committee, the Scientific Committee on Antarctic Research and, as appropriate, to the Commission for the Conversation of Antarctic Marine Living Resources. In formulating its advice to the Antarctic Treaty Consultative Meeting, the Committee shall take into account any comments provided by the Scientific Committee on Antarctic Research and, as appropriate, by the Commission for conservation of Antarctic Marine Living Resources. Thereafter Management Plans may be approved by the Antarctic Treaty Consultative Parties by a measure adopted at an Antarctic Treaty Consultative Meeting in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies

otherwise, the plan shall be deemed to have been approved 90 days after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or is unable to approve the measure.

2. Having regard to the provisions of Articles 4 and 5 the Protocol, no marine area shall be designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area without the prior approval of the Commission for the Conservation of Antarctic Marine Living Resources.

3. Designation of an Antarctic Specially Protected Area or an Antarctic Specially Managed Area shall be for an indefinite period unless the Management Plan provides otherwise. A review of the Management Plan shall be initiated at least every five Years. The Plan shall be updated as necessary.

4. Management Plans may be amended or revoked in accordance with paragraph 1 above.

5. Upon approval Management Plans shall be circulated promptly by the Depositary to all Parties. The Depositary shall maintain a record of all currently approved Management Plans.

ARTICLE 7

PERMITS

1. Each Party shall appoint an appropriate authority to issue permits to enter and engage in activities within an Antarctic Specially Protected Area in accordance with the requirements of the Management Plan relating to that Area. The permit shall be accompanied by the relevant sections of the Management Plan and shall specify the extent and location of the area, the authorised activities and when, where and by whom the activities are authorised and any conditions imposed by the Management Plan.

2. In the case of a Specially Protected Area designated as such by past Antarctic Treaty Consultative Meetings which does not have a Management

Plan, the appropriate authority may issue a permit for a compelling scientific purpose which cannot be served elsewhere and which will not jeopardize the natural ecological system in that Area.

3. Each Party shall require a permit-holder to carry a copy of the permit while in the Antarctic Specially Protected Area concerned.

ARTICLE 8

HISTORIC SITES AND MONUMENTS

1. Sites or monuments of recognised historic value which have been designated as which are located within such Areas, shall be listed as Historic Sites and Monuments.

2. Any Party may propose a site or monument of recognised historic value which has not been designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area, or which is not located within such an Area, for listing as a Historic Site or Monument. The proposal for listing may be approved by the Antarctic Treaty Consultative Meeting in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the proposal shall be deemed to have been approved 90 days after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or is unable to approve the measure.

3. Existing Historic Sites and Monuments which have been listed as such by previous Antarctic Treaty Consultative Meetings shall be included in the list of Historic Sites and Monuments under this Article.

4. Listed Historic Sites and Monuments shall not be damaged, removed or destroyed.

5. The list of Historic Sites and Monuments may be amended in accordance with paragraph 2 above. The Depositary shall maintain a list of current Historic Sites and Monuments.

ARTICLE 9

INFORMATION AND PUBLICITY

1. With a view to ensuring that all persons visiting or proposing to visit Antarctica understand and observe the provisions of this Annex, each Party shall make available information setting forth, in particular:

(a) the location of Antarctic specially Protected Areas and Antarctic Specially Managed Areas;

(b) listing and maps of those Areas;

(c) the Management Plans, including listings of prohibitions relevant to each Area;

(d) the location of Historic Sites and Monuments and any relevant prohibition or restriction.

2. Each Party shall ensure that the location and, if possible, the limits of Antarctic Specially Protected Areas, Antarctic Specially Managed Areas and Historic Sites and Monuments are shown on its topographic maps, hydrographic charts and in other relevant publications.

3. Parties shall co-operate to ensure that where appropriate, the boundaries of Antarctic Specially Protected Areas, Antarctic Specially Managed Areas and Historic Sites and Monuments are suitably marked on the site.

ARTICLE 10

EXCHANGE OF INFORMATION

1. The Parties shall make arrangements for:

(a) collecting and exchanging records, including records of permits and reports of visits including inspection visits, to Antarctic Specially Protected Areas and reports of inspection visits to Antarctic Specially Managed Areas;

(b) obtaining and exchanging information on any significant change or damage to any Antarctic Specially Managed Area, Antarctic Specially Protected Area or Historic Site or Monument; and

(c) establishing common forms in which records and information shall be

submitted by Parties in accordance with paragraph 2 below.

2. Each Party shall inform the other Parties and the Committee before the end of November of each year of the number and nature of permits issued under this Annex in the preceding period of 1st July to 30th June.

3. Each Party conducting funding or authorising research or other activities in Antarctic Specially Protected Areas or Antarctic Specially Managed Areas shall maintain a record of such activities and in the annual exchange of information in accordance with the Treaty shall provide summary descriptions of the activities conducted by persons subject to its jurisdiction in such areas in the preceding year.

4. Each Party shall inform the other Parties and the Committee before the end of November each year of measures it has taken to address instances of activities in contravention of the provisions of the approved Management Plan for an Antarctic Specially Protected Area or Antarctic Specially Managed Area.

ARTICLE 11

CASES OF EMERGENCY

1. The restrictions laid down and authorised by this Annex shall not apply in cases of emergency involving safety of human life or of ships, aircraft, or equipment and facilities of high value or the protection of the environment.

2. Notice of activities undertaken in cased of emergency shall be circulated immediately to all Parties and to the Committee.

ARTICLE 12

AMENDMENT OR MODIFICATION

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX(1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one of the Antarctic Treaty Consultative Parties notifies the Depositary,

within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with paragraph 1 above shall thereafter become effective as to any other Party when notice of approval by it has been received by the Depositary.

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