

1-1-2006

Tourism in Antarctica: History, Current Challenges and Proposals for Regulation

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TOURISM IN ANTARCTICA: HISTORY, CURRENT CHALLENGES AND PROPOSALS FOR
REGULATION

by

JUAN Y. HARCHA

(Under the Direction of Daniel M. Bodansky)

ABSTRACT

Tourism in the Antarctic has experienced rapid growth throughout the last fifteen years with over 30,000 people visiting the white continent during the 2005 - 2006 season. Such expansion offers a host of new activities for visitors to explore this immense wilderness, yet it brings considerable unease over the future of Antarctica. As of 1961, issues concerning the white continent have been dealt with under the Antarctic Treaty System, which has provided the forum for the discussion of numerous measures. This paper looks into the history of tourism, analyzes the main challenges such industry poses, and attempts an assessment of several proposals using available statistic data, wi

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by

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Lawyer, Universidad de Chile, 1997

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment
of the Requirements for the Degree

MASTER OF LAW

ATHENS, GEORGIA

2006

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by

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DEDICATION

To Karina, Bastian and Gabriel

ACKNOWLEDGEMENTS

First and foremost, thanks to my wife Karina, who has literally accompanied me until the end of the world in pursuit of my professional goals.

Thanks to my father Yemil, who used to spend countless hours trying to explain to me how important it would be in life to set down a Northern goal and then aim every effort toward it. Thanks to my mother Maria Luisa, whose supporting love seems to have no boundaries.

Thanks to my son Bastian, whose mere twelve years have not prevented him from behaving as a man. To my son Gabriel, who has thrilled me from the day I first saw him and on.

I would like to thank professor Daniel Bodansky, who has always been willing to spend his valuable time in guiding me along the way. Also, I would like to thank professor Gabriel M. Wilner for accepting being my second reader.

I especially thank the Fulbright program and the Government of Chile for having afforded me the opportunity to study abroad.

Finally, I wish to thank my co-workers at the Provincial Government of the Chilean Antarctica. They are the best team I have ever worked with, and without their support I would have hardly been able to reach this point.

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CHAPTER I

INTRODUCTION

A. GENERAL BACKGROUND

Antarctica, also called the Sixth Continent, the Seventh Continent, the White Continent, the Ice Continent, and the Last Continent,¹ stretches over fourteen million square kilometers and represents virtually one-tenth of the Earth's landmass.² This vast wilderness constitutes a unique natural setting, serving as home to a variety of wildlife including penguins, albatross, petrels, seals, sea lions, and whales,³ as well as to a number of continental and maritime plants, including mosses, lichens, and even two vascular species.⁴ What is more, the continent encompasses ice-reserves as large as seven-tenths of all freshwater existing on Earth,⁵ and it is linked to salient world-wide ecological problems, such as ozone depletion, climate change,⁶ and global warming.⁷

As the Antarctic area has become an object of interest to the whole of humanity,⁸ it comes as no surprise that every season more people visit Antarctica to marvel at its assorted fauna and stunning landscapes, to walk over its ice-covered surface, to participate in a mountaineering journey or any other nature-based activity.⁹ Thus, tourism to the white continent has emerged in several countries as a novel undertaking and a profitable business, contributing to economic development. Nevertheless, along with

¹ INSTITUTO ANTARTICO CHILENO [CHILEAN ANTARCTIC INSTITUTE][hereinafter INACH], INTRODUCCION AL CONOCIMIENTO ANTARTICO [INTRODUCTION TO ANTARCTIC KNOWLEDGE] 3 (2003).

² CHRISTOPHER C. JOYNER, GOVERNING THE FROZEN COMMONS: THE ANTARCTIC REGIME AND ENVIRONMENTAL PROTECTION 1-11 (1998).

³ See generally GRAHAM COLLIER & PATRICIA GRAHAM COLLIER, ANTARCTIC ODYSSEY: IN THE FOOTSTEPS OF THE SOUTH POLAR EXPLORERS (Carrol & Graf Publishers, Inc. 1999).

⁴ Sharon A. Robinson et al., *Living on the edge – plants and global change in continental and maritime Antarctica*, 9 GLOBAL CHANGE BIOLOGY 1681, 1683 (2003).

⁵ INACH, *supra* note 1, at 7.

⁶ For an overview of impacts of global climate change on the Antarctic, see generally The Antarctic and Southern Ocean Coalition [hereinafter ASOC], *The Antarctic and Climate Change*, 29th Antarctic Treaty Consultative Meeting [hereinafter ATCM] Doc., XXIX ATCM/Informative Paper [hereinafter IP] 62 (2006), available at http://www.ats.aq/Atcm/atcm29/ip/atcm29_ip62_e.doc (last visited June 19, 2006).

⁷ See Alley R.B. et al., *Ice-sheet and sea-level changes*, 30 SCIENCE 456, 456-60 (2005) (holding that ice-sheet sensitivity to global warming is greater than previously believed).

⁸ Francesco Francioni, *Introduction: A Decade of Development in Antarctic International Law*, in INTERNATIONAL LAW FOR ANTARCTICA, 1, 1 (Francesco Francioni & Tulio Scovazzi eds., 2nd ed. 1996).

⁹ See *infra* figure 1, pp. 26.

the advantages, concerns have arisen with regards to its potential effects on the environment, ongoing scientific research, and ultimately the stability and integrity of the Antarctic Treaty System [hereinafter ATS], the legal and political regime that has governed activities on the continent for more than fifty years.¹⁰ The ATS encompasses several legal bodies successively concluded over the last forty-five years, the most important of which is the Antarctic Treaty.¹¹ Other legal instruments integrating the system are the Protocol on Environmental Protection to The Antarctic Treaty,¹² [hereinafter the Protocol or PEPAT] the Convention for the Conservation of Antarctic Seals [hereinafter CCAS],¹³ and the Convention on the Conservation of Antarctic Marine Living Resources [hereinafter CCAMLR],¹⁴ commonly referred to as the “separate conventions”.¹⁵ Finally, the ATS comprises the measures adopted under either The Treaty or the separate conventions.

1. The Antarctic Treaty

The Antarctic Treaty was entered into with the aim of securing international peace, which was at the time threatened by several problems.¹⁶ First, throughout the first half of the XX century, a number of countries had asserted sovereignty rights over Antarctica.¹⁷ The claims covered approximately 85% of the continent and three of them overlapped, which turned the territorial topic into a very sensitive one.¹⁸ Second, following a different strategy, the Soviet Union and the United States had refrained from making

¹⁰ C. Michael Hall & Mariska Wouters, *Issues in Antarctic Tourism*, in POLAR TOURISM: TOURISM IN THE ARCTIC AND ANTARCTIC REGIONS 147, 153-63 (Colin Michael Hall & Margaret E. Johnston eds., 1995).

¹¹ Antarctic Treaty, Dec. 1, 1959, 12 U.S.T. 794, 40 U.N.T.S. 71, available at <http://disarmament.un.org:8080/TreatyStatus.nsf/0/743ec37109c19566852568770079dda3?OpenDocument> (last visited July 11, 2005).

¹² Protocol on Environmental Protection to the Antarctic Treaty, Oct. 4, 1991, 30 I.L.M. 1455 [hereinafter PEPAT,] (entered into force Jan. 14, 1998), available at http://www.cep.aq/apa/legal_docs/protocolintro.html (last visited July 11, 2005).

¹³ Convention for the Conservation of Antarctic Seals, June 1, 1972, 29 U.S.T. 441, 11 I.L.M. 251 [hereinafter CCAS], available at <http://www.oceanlaw.net/texts/seals.htm> (last visited July 11, 2005).

¹⁴ Convention on the Conservation of Antarctic Marine Living Resources, May 20, 1980, 33 U.S.T. 3476; 19 I.L.M. 841 [hereinafter CCAMLR], available at http://www.ccamlr.org/pu/e/e_pubs/bd/pt1.pdf (last visited July 11, 2005).

¹⁵ See Alfred van der Essen, *The Origin of the Antarctic System*, in INTERNATIONAL LAW FOR ANTARCTICA 17, 29 (Francesco Francioni & Tullio Scovazzi eds., 2nd ed. 1996) (1987).

¹⁶ See Christopher D. Beeby, *The Antarctic Treaty System: Goals, Performance and Impact*, in THE ANTARCTIC TREATY SYSTEM IN WORLD POLITICS, 4, 4 (Arnfinn Jørgensen-Dahl & Willy Østreng eds., 1991).

¹⁷ United Kingdom (1908), New Zealand (1923), France (1924), Australia (1933), Norway (1939), Argentina (1939) and Chile (1940). See Van der Essen, *supra* note 15, at 29.

¹⁸ The United Kingdom, claims from 20 West Meridien to 80 West Meridien; Argentina, covers from 25 West Meridien to 75 West Meridien; and Chile asserts rights from 53 West Meridien to 90 West Meridien on the The Peninsula. See Van der Essen, *supra* note 15, at 18-25.

territorial claims,¹⁹ but at the same time both nations had made clear they were not giving up such course of action. Quite the contrary, the two superpowers had declared that their activities in the white continent provide enough ground for sovereignty.²⁰ Third, as a result of World War II, a number of countries were engaged in what came to be known as the Cold War and therefore the use of Antarctica as a settlement of military bases or as a storage of nuclear weapons, as well as a site for conducting testing-purposed explosions and for the disposal of radioactive waste was largely feared.²¹ The negotiation of the Treaty led up to a host of mechanisms designed to forestall eventual disputes. Peace emerged as the first bedrock principle of the new legal regime for Antarctica as the continent was devoted to peaceful purposes only,²² military operations were banned except when supporting such purposes,²³ nuclear explosions and waste disposal were equally prohibited,²⁴ and sovereignty claims were put on hold.²⁵ That achieved, the Treaty went on to develop science into the second founding principle as freedom of scientific research was explicitly provided for, and international cooperation in doing science was encouraged through diverse means, i.e. coordination of scientific programs conducted in Antarctica, exchange of scientific personnel and free circulation of scientific knowledge.²⁶

The operation of the Treaty presents some novel features as well. To begin with, there are two types of membership: Consultative Parties, which are entitled to fully participate inside the decision-making process; and Non-Consultative Parties, which can express their views in Antarctic Treaty

¹⁹ Jennifer Angelini & Andrew Mansfield, *A Call for U.S. Ratification of the Protocol on Antarctic Environmental Protection*, 21 *ECOLOGY L.Q.* 163, 182 (1994).

²⁰ See Beeby, *supra* note 16, at 5.

²¹ Martin Lishexian Lee, *A Case for World Government of the Antarctic*, 9 *GONZ. J. INT'L L.* 73, 74 (2005), available at <http://www.gonzagajil.org/content/view/107/26/> (last visited July 14, 2006).

²² See Antarctic Treaty, *supra* note 11, Preamble “... Recognizing that it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;” See also *supra* art. I “Antarctica shall be used for peaceful purposes only.”

²³ *Id.* art. I “... There shall be prohibited, *inter alia*, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons. 2 The present Treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.”

²⁴ *Id.* art. V(1) “Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.”

²⁵ See *infra* Chapter III.C.2.

²⁶ The Treaty Preamble highlights the importance of scientific investigation and the continuation and development of scientific cooperation; art. II sets forth the principles of freedom of scientific investigation and scientific cooperation in Antarctica; art. III provides for specific actions to achieve international cooperation in scientific research, art. VIII provides that jurisdiction over scientific personnel and accompanying staff must be exerted in accordance with the principle of nationality; and art. IX provides that scientific affairs are to be discussed within ATCM.

Consultative Meetings²⁷ [hereinafter ATCM] as observers though deprived of the right to vote. Consultative status was vested upon the original signatories, although acceding states may also achieve such condition through the conduction of “substantial scientific research”.²⁸ Furthermore, the Treaty itself did not establish permanent institutions such as Secretariat, committee, commission, or any sort of tribunal.²⁹ Instead, meetings of representatives of parties are held under the name of ATCM. Nonetheless, as new parties joined the Treaty, new conventions were adopted and new activities begun taking place in the seventh continent, the Treaty became a complex network dealing with all types of Antarctic-related affairs, and a permanent Secretariat was seen as a necessity.³⁰ In 1992 parties agreed on creating a Secretariat,³¹ and, after nearly one decade of negotiations over political effects, as well as financial and legal implications,³² a decision was issued at the 24th ATCM mandating the establishment of the Secretariat in Buenos Aires, Argentina.³³

2. The Protocol on Environmental Protection to the Antarctic Treaty³⁴

The Protocol came to set down the third bedrock principle the whole Antarctic Treaty System rests upon: the environment.³⁵ This convention commits the parties “to the *comprehensive* protection of the Antarctic environment and dependent and associated ecosystems”,³⁶ which basically means that its

²⁷ Antarctic Treaty, *supra* note 11, art. 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: ... ”

²⁸ *Id.* art. IX(2) “Each Contracting Party which has become a party to the present Treaty by accession under Article XIII shall be entitled to appoint representatives to participate in the meetings referred to in paragraph 1 of the present Article, during such time as that Contracting Party demonstrates its interest in Antarctica by conducting substantial scientific research activity there, such as the establishment of a scientific station or the dispatch of a scientific expedition.”

²⁹ See Karen Scott, *Institutional Developments within the Antarctic Treaty System*, 52 ICLQ 473, 478 (2003) (The author points out that the treaty was initially conceived as a forum for intergovernmental cooperation rather than the basis for an international institution).

³⁰ *Id.* at 478-9.

³¹ *Id.* at 479.

³² *Id.* at 479-80.

³³ *Establishment of the Secretariat in Buenos Aires*, XXIV ATCM Doc. XXIV ATCM/Decision 01 (Julio 20, 2001), available at <http://www.ats.aq/> (last visited June 08, 2006).

³⁴ See *supra* note 12.

³⁵ See generally, S.K.N. Blay, *New Trends in the Protection of the Antarctic Environment: The 1991 Madrid Protocol*, 86 AM. J. INT’L L. 377 (1992).

³⁶ PEPAT, *supra* note 12, art. 2.

provisions apply to all activities carried out further south sixty degrees south.³⁷ Moreover, The Protocol summarizes the three principles aforementioned as it designates “Antarctica as a natural reserve, devoted to peace and science”,³⁸ and then it goes on to enumerate the intrinsic values of the white continent, namely its wilderness, the aesthetic features of Antarctica, and its significance as an area of scientific research.³⁹ Accordingly, The Protocol lays down a duty of planning and conducting activities in such a way as to limit “adverse impacts on the Antarctic environment and dependent and associated ecosystems”,⁴⁰ as well as to avoid harmful impacts in specific areas such as climate, air, water, flora, fauna, atmosphere, land, glaciers and sea.⁴¹

A highlight of PEPAT, is given by the requirement of Environmental Impact Assessment⁴² [hereinafter EIA] for all activities which advance notice is mandated for under The Treaty.⁴³ In order to defined the appropriate level of scrutiny, the EIA system distinguishes between activities having less than a minor or transitory impact,⁴⁴ a minor or transitory impact,⁴⁵ or more than minor or transitory impact.⁴⁶ Further, the Protocol demands “regular and effective monitoring”⁴⁷ in order to have ongoing activities duly checked out and detect unpredicted effects in a timely manner.⁴⁸ Another distinctive feature of the Protocol’s structure is the 50-year ban cast on all kind of mineral activities, unless they are conducted for scientific research.⁴⁹ This is so because the conclusion of the Protocol ultimately arose from the decision of some signatories not to ratify a convention signed in 1988 to allow the mineral exploitation of Antarctica.⁵⁰ Finally, the Protocol does not provide for permanent bodies but creates a Committee for

³⁷ *Id.* art. (3)(1).

³⁸ *Id.* art. 2.

³⁹ *Id.* art. 3(1).

⁴⁰ *Id.* art. 3(2)(a).

⁴¹ *Id.* art. 3(2)(b).

⁴² *Id.* art. 8(2).

⁴³ Antarctic Treaty, *supra* note 11, art. VII(5).

⁴⁴ PEPAT, *supra* note 12, art. 8(1)(a).

⁴⁵ *Id.* art. 8(1)(b).

⁴⁶ *Id.*

⁴⁷ *Id.* art.3(2)(d)-(e).

⁴⁸ *Id.*

⁴⁹ *Id.* art.7-25(2).

⁵⁰ Convention on the Regulation of Antarctic Mineral Resources Activities, June 2, 1988, 27 I.L.M. 859 [hereinafter CRAMRA] (the convention has not entered into force yet).

Environmental Protection⁵¹ tasked with advisory functions on the implementation of the Protocol, and the Arbitral Tribunal integrated by arbitrators designated by the parties.⁵²

The principles and objectives set down by the Protocol are further expanded through six annexes that form an integral part of the Protocol's text.⁵³ Annexes I through IV were adopted simultaneously with the Protocol,⁵⁴ Annex V was concluded later on at the 16th ATCM (1991) held in Bonn, Germany;⁵⁵ while Annex VI was accomplished at the 28th ATCM (2005) held in Stockholm, Sweden.⁵⁶ Annex I⁵⁷ elaborates on the three-tiered scheme for environmental impact evaluation, which is expressly applicable to tourism by virtue of article 8(2) of the Protocol.⁵⁸ Annex II⁵⁹ sets out norms for the protection of flora and fauna,⁶⁰ a number of which are related to tourism, i.e. the prohibition of harmful interference with birds or native mammals,⁶¹ the prohibition of introduction of exotic species,⁶² and the precautions required from parties to prevent microorganisms from entering the Antarctic Treaty Area.⁶³ Annex III⁶⁴ deals with waste disposal and management, which is also entirely applicable to tourism given the explicit

⁵¹ PEPAT, *supra* note 12, art.11.

⁵² *See id.* art. 19-20; *see also supra* schedule to the Protocol.

⁵³ *Id.* art. 9(1).

⁵⁴ The discussions inside the working group II of the 11th Special Antarctic Consultative Meeting led to the adoption of Annexes I through IV. *See* Blay, *supra* note 35, at 387.

⁵⁵ Annex V to the Protocol on Environmental Protection to the Antarctic Treaty Area Protection and Management, Oct. 17, 1991 SENATE TREATY DOC. NO 22 at 97 [hereinafter Annex V] (entered into force May 24, 2002), *available at* <http://www.ats.aq/uploaded/ANNEXV.pdf> (last visited July 12, 2006).

⁵⁶ *See generally* 28th ATCM, <http://www.ats.org.ar/28atcm/> (last visited June 10, 2005).

⁵⁷ Annex I to the Protocol on Environmental Protection to the Antarctic Treaty Environmental Impact Assessment, Oct. 4, 1991, 30 I.L.M. 1455, 1474 [hereinafter Annex I] (entered into force Jan. 14, 1998), *available at* <http://www.ats.aq/uploaded/ANNEXI.pdf> (last visited July 12, 2006).

⁵⁸ PEPAT, *supra* note 12, art.8(2)(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. (emphasis added)"

⁵⁹ Annex II to the Protocol on Environmental Protection to the Antarctic Treaty Conservation of Antarctic Fauna and Flora, Oct. 4, 1991, 30 I.L.M. 1455, 1476 [hereinafter Annex II] (entered into force Jan. 14, 1998), *available at* <http://www.ats.aq/uploaded/ANNEXII.pdf> (last visited July 12, 2006).

⁶⁰ Annex II constitutes a restatement of the 1964 Agreed Measures for the Conservation of Antarctic Flora and Fauna. Blay, *supra* note 35, at 387.

⁶¹ *Id.* art. 1(h).

⁶² *Id.* art. 4(1)-(2).

⁶³ *See Id.* art. 4(6); *see also id.* appendix C.

⁶⁴ Annex III to the Protocol on Environmental Protection to the Antarctic Treaty Waste Disposal and Waste Management, Oct. 4, 1991, 30 I.L.M. 1455, 1479 [hereinafter Annex III] (entered into force Jan. 14, 1998), *available at* <http://www.ats.aq/uploaded/ANNEXIII.pdf> (last visited July 12, 2006).

reference included in article 1(1).⁶⁵ Annex IV⁶⁶ addresses the prevention of marine pollution basically by making the standards of the International Convention for the Prevention of Pollution from Ships⁶⁷ [hereinafter MARPOL 73/78] applicable to vessels operating beyond the 60 degrees South. Annex V deals with Area Protection and Management and establishes two categories of sites: Antarctic Specialty Protected Areas and Antarctic Specialty Managed Areas where activities, including tourism, may be prohibited, restricted or managed in accordance to a management plan adopted under the Annex provisions.⁶⁸ Lastly, Annex VI regulates issues of liability for damages arising out of environmental emergencies occurred in Antarctica.⁶⁹ With its adoption in 2005, the parties took an important step in fulfilling the task laid down by article 16 of the Protocol.⁷⁰

3. Recommendations under the Antarctic Treaty

The Antarctic Treaty empowered parties to recommend their respective governments to adopt measures intended to facilitate the fulfillment of the Treaty objectives.⁷¹ Pursuant to this prerogative, numerous recommendations have been issued by Antarctic Treaty Consultative Meetings,⁷² concerning such diverse matters as science, jurisdiction, conservation of living resources and other matters the Treaty itself enumerates.⁷³ The procedure through which a recommendation is adopted roughly includes the following steps: Negotiation, which includes the debate among parties about the content of the recommendation and its subsequent submission to the ATCM; adoption, whereby the recommendation is unanimously agreed upon by Consultative Parties attending the respective meeting; report, that is the

⁶⁵ *Id.* art. 1.

⁶⁶ Annex IV to the Protocol on Environmental Protection to the Antarctic Treaty Prevention of Marine Pollution, Oct. 4, 1991, 30 I.L.M. 1455, 1483 [hereinafter Annex IV] (entered into force Jan. 14, 1998), available at <http://www.ats.aq/uploaded/ANNEXIV.pdf> (last visited July 12, 2006).

⁶⁷ International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 1340 U.N.T.S. 184, 12 I.L.M. 1319, [hereinafter MARPOL 73/78] available at http://www.imo.org/Conventions/contents.asp?doc_id=678&topic_id=258 (last visited July 5, 2006).

⁶⁸ Annex V, *supra* note 55.

⁶⁹ *Annex VI on Liability Arising from Environmental Emergencies to The Protocol on Environmental Protection To The Antarctic Treaty*, 28th ATCM Doc. XXVIII ATCM/Decision [hereinafter Dec.] 1 [hereinafter Annex VI] (June 17, 2005), available at <http://www.ats.aq/uploaded/ANNEXIV.pdf> (last visited June 08, 2006).

⁷⁰ PEPAT, *supra* note 12, art.16.

⁷¹ Antarctic Treaty, *supra* note 11, art. IX(1).

⁷² For an electronic database of measures adopted by the ATS, see <http://www.ats.aq/> (last visited July 17, 2006).

⁷³ Antarctic Treaty, *supra* note 11, art. IX(1)a)-f).

recommendation is inserted in the final report of the corresponding consultative meeting; communication, whereby representatives solicit their respective government for approval; and finally, entry into force, once the recommendation has been approved by every consultative party's government.⁷⁴ At the 19th ATCM held in 1995 in Seoul, South Korea, parties decided to break recommendations down into three sub-categories: Measures, which become a legally binding text upon approval; Resolutions, whose provisions are merely voluntary; and Decisions, which deal with internal and organizational matters and become operative upon adoption, unless otherwise indicated.⁷⁵

A number of recommendations have been adopted on the issue of tourism, the most important of which remains Recommendation XVIII-1,⁷⁶ although it has yet to become effective.⁷⁷ The text sets out rules for both visitors to Antarctica, organizers and operators. As for visitors, Recommendation XVIII-1 calls for a respectful attitude towards polar wildlife,⁷⁸ urges for respect to protected areas,⁷⁹ stresses the importance of scientific research and the need of avoiding interference with the programs,⁸⁰ highlights the

⁷⁴ See Christopher C. Joyner, *Recommended Measures under the Antarctic Treaty: Hardening Compliance with Soft International Law*, 19 MICH. J. INT'L L. 410, 403-6 (1998).

⁷⁵ *Measures, Decisions and Resolutions*, 19th ATCM Doc. XIX ATCM/Dec. 1 (May 19, 1995), available at <http://www.ats.aq/> (last visited June 08, 2006).

⁷⁶ *Tourism and Non-Governmental Activities*, 18th ATCM Doc. XVIII ATCM/Recommendation [hereinafter Rec.] 1 (Apr. 11–22, 1994) [hereinafter Rec. XVIII-1], available at <http://www.ats.aq/> (last visited June 08, 2006).

⁷⁷ United Kingdom, *Tourism and Self-Regulation: A commentary on IAATO*, Antarctic Treaty Meeting of Experts on Tourism and Non-Governmental Activities [hereinafter ATME] Doc. ATME/Paper 4, at 3 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

⁷⁸ Rec. XVIII-1, *supra* note 76, Guidance for Visitors to the Antarctic, A “PROTECT ANTARCTIC WILDLIFE Taking or harmful interference with Antarctic wildlife is prohibited except in accordance with a permit issued by a national authority. 1) Do not use aircraft, vessels, small boats, or other means of transport in ways that disturb wildlife, either at sea or on land. 2) Do not feed, touch, or handle birds or seals, or approach or photograph them in ways that cause them to alter their behavior. Special care is needed when animals are breeding or moulting. 3) Do not damage plants, for example by walking, driving, or landing on extensive moss beds or lichen-covered scree slopes. 4) Do not use guns or explosives. Keep noise to the minimum to avoid frightening wildlife. 5) Do not bring non-native plants or animals into the Antarctic (e.g. live poultry, pet dogs and cats, house plants).”

⁷⁹ *Id.* B “RESPECT PROTECTED AREAS A variety of areas in the Antarctic have been afforded special protection because of their particular ecological, scientific, historic or other values. Entry into certain areas may be prohibited except in accordance with a permit issued by an appropriate national authority. Activities in and near designated Historic Sites and Monuments and certain other areas may be subject to special restrictions. 1) Know the locations of areas that have been afforded special protection and any restrictions regarding entry and activities that can be carried out in and near them. 2) Observe applicable restrictions. 3) Do not damage, remove or destroy Historic Sites or Monuments, or any artifacts associated with them.”

⁸⁰ *Id.* C “RESPECT SCIENTIFIC RESEARCH Do not interfere with scientific research, facilities or equipment. 1) Obtain permission before visiting Antarctic science and logistic support facilities; reconfirm arrangements 24-72 hours before arriving; and comply strictly with the rules regarding such visits. 2) Do not interfere with, or remove, scientific equipment or marker posts, and do not disturb experimental study sites, field camps, or supplies.”

perils attached to visits and provide advise on safety measures,⁸¹ and requires visitors to maintain Antarctica pristine, observe a careful behavior and avoid misconduct.⁸² As for the organizers, recommendations cover three separate areas: before, during, and after the expedition. While planning, the organizers shall timely notify the corresponding governments about the activity⁸³ so that they can fulfill their obligation of providing advanced notice.⁸⁴ Moreover, organizers are required to undergo environmental impact assessment in accordance to the Protocol and the Annex I,⁸⁵ obtain permission if visit to national stations are considered,⁸⁶ or any other permission,⁸⁷ provide information regarding emergency, waste disposal and marine pollution contingency,⁸⁸ ensure that all equipment and logistics meet Antarctic standards, train personnel,⁸⁹ make sure that the expedition does not depend on any party's

⁸¹ *Id.* D “BE SAFE Be prepared for severe and changeable weather. Ensure that your equipment and clothing meet Antarctic standards. Remember that the Antarctic environment is inhospitable, unpredictable and potentially dangerous. 1) Know your capabilities, the dangers posed by the Antarctic environment, and act accordingly. Plan activities with safety in mind at all times. 2) Keep a safe distance from all wildlife, both on land and at sea. 3) Take note of, and act on, the advice and instructions from your leaders; do not stray from your group. 4) Do not walk onto glaciers or large snow fields without proper equipment and experience; there is a real danger of falling into hidden crevasses. 5) Do not expect a rescue service; self-sufficiency is increased and risks reduced by sound planning, quality equipment, and trained personnel. 6) Do not enter emergency refuges (except in emergencies). If you use equipment or food from a refuge, inform the nearest research station or national authority once the emergency is over. 7) Respect any smoking restrictions, particularly around buildings, and take great care to safeguard against the danger of fire. This is a real hazard in the dry environment of Antarctica.”

⁸² *Id.* E “KEEP ANTARCTICA PRISTINE Antarctica remains relatively pristine, and has not yet been subjected to large scale human perturbations. It is the largest wilderness area on earth. Please keep it that way. 1) Do not dispose of litter or garbage on land. Open burning is prohibited. 2) Do not disturb or pollute lakes or streams. Any materials discarded at sea must be disposed of properly. 3) Do not paint or engrave names or graffiti on rocks or buildings. 4) Do not collect or take away biological or geological specimens or man-made artifacts as a souvenir, including rocks, bones, eggs, fossils, and parts or contents of buildings. 5) Do not deface or vandalise buildings, whether occupied, abandoned, or unoccupied, or emergency refuges.”

⁸³ Rec. XVIII-1, *supra* note 76, PROCEDURES TO BE FOLLOWED BY ORGANIZERS AND OPERATORS “When planning to go to the Antarctic Organisers and operators should: 1) Notify the competent national authorities of the appropriate Party or Parties of details of their planned activities with sufficient time to enable the Party(ies) to comply with their information exchange obligations under Article VII(5) of the Antarctic Treaty. The information to be provided is listed in Attachment A.”; *See also* Attachment A enumerating information to be provided in advance by the organizers.

⁸⁴ Antarctic Treaty, *supra* note 11, art. VII(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 I of the present Treaty.”

⁸⁵ Rec. XVIII-1, *supra* note 76, PROCEDURES TO BE FOLLOWED BY ORGANIZERS AND OPERATORS (A) (2) “Conduct an environmental assessment in accordance with such procedures as may have been established in national law to give effect to Annex I of the Protocol, including, if appropriate, how potential impacts will be monitored.”

⁸⁶ *Id.* (A)(3) “Obtain timely permission from the national authorities responsible for any stations they propose to visit.”

⁸⁷ *Id.* (A)(6) “Obtain a permit, where required by national law, from the competent national authority of the appropriate Party or Parties, should they have a reason to enter such areas, or a monitoring site (CEMP Site) designated under CCAMLR.”

⁸⁸ *Id.* (A)(4) “Provide information to assist in the preparation of: contingency response plans in accordance with Article 15 of the Protocol; waste management plans in accordance with Annex III of the Protocol; and marine pollution contingency plans in accordance with Annex IV of the Protocol.”

⁸⁹ *Id.* (A)(7), (8), (9), (10), (11) “7) Ensure that activities are fully self-sufficient and do not require assistance from Parties unless arrangements for it have been agreed in advance. 8) Ensure that they employ experienced and trained personnel, including a

assistance,⁹⁰ inform passengers of the relevant provisions of the Treaty and give copy of the recommendations and finally consider the purchase of insurance policy.⁹¹ While in the Antarctic Treaty Area, operators must obey the applicable rules,⁹² reconfirm arrangements,⁹³ keep visitors under supervision,⁹⁴ keep on monitoring the ongoing activities as well as to cooperate with other monitoring or inspection processes,⁹⁵ stick to stated procedures in operating means of transport,⁹⁶ comply with Annexes II and IV in managing the waste,⁹⁷ and maintain accurate records of the activities.⁹⁸ Within three months after the expedition, a report shall be forwarded to the appropriate national authority, including information about the vessel or aircraft, the crew and the passengers on board, the passengers, the sites visited and any other relevant observation.⁹⁹

sufficient number of guides. 9) Arrange to use equipment, vehicles, vessels, and aircraft appropriate to Antarctic operations. 10) Be fully conversant with applicable communications, navigation, air traffic control and emergency procedures. 11) Obtain the best available maps and hydrographic charts, recognising that many areas are not fully or accurately surveyed.”

⁹⁰ The United States [hereinafter U.S.] policy on private expeditions expressly states that the U.S. Antarctic Program does not offer any support to private expeditions but in emergency cases and on condition that assistance does not represent unacceptable risks for the personnel and the rescue can be achieved with the available means. In any case the U.S. reserves the right to recover all costs. *See* United States of America, *U.S. Policy on Private Expeditions to Antarctica and Current U.S. Framework for Regulation of Antarctic Tourism*, Doc. ATME/Paper 5, Attachment B, at 5 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

⁹¹ *See* Rec. XVIII-1, *supra* note 76, PROCEDURES TO BE FOLLOWED BY ORGANIZERS AND OPERATORS (A)(12)-(13)-(14) “12) “Consider the question of insurance (subject to requirements of national law). 13) Design and conduct information and education *programmes* to ensure that all personnel and visitors are aware of relevant provisions of the Antarctic Treaty system. 14) Provide visitors with a copy of the Guidance for Visitors to the Antarctic.” (emphasis added).

⁹² *Id.* (B)(1) “When in the Antarctic Treaty Area Organisers and operators should: 1) Comply with all requirements of the Antarctic Treaty system, and relevant national laws, and ensure that visitors are aware of requirements that are relevant to them.”

⁹³ *Id.* (B)(2) “Reconfirm arrangements to visit stations 24-72 hours before their arrival and ensure that visitors are aware of any conditions or restrictions established by the station.”

⁹⁴ *Id.* (B)(3) “Ensure that visitors are supervised by a sufficient number of guides who have adequate experience and training in Antarctic conditions and knowledge of the Antarctic Treaty system requirements.”

⁹⁵ *Id.* (B)(4)-(7)-(8) “4) Monitor environmental impacts of their activities, if appropriate, and advise the competent national authorities of the appropriate Party or Parties of any adverse or cumulative impacts resulting from an activity, but which were not foreseen by their environmental impact assessment 7) Co-operate fully with observers designated by Consultative Parties to conduct inspections of stations, ships, aircraft and equipment under Article VII of the Antarctic Treaty, and those to be designated under Article 14 of the Environmental Protocol. 8) Co-operate in monitoring programmes undertaken in accordance with Article 3(2)(d) of the Protocol.”

⁹⁶ *Id.* (B)(5) “Operate ships, yachts, small boats, aircraft, hovercraft, and all other means of transport safely and according to appropriate procedures, including those set out in the Antarctic Flight Information Manual (AFIM). Operate ships, yachts, small boats, aircraft, hovercraft, and all other means of transport safely and according to appropriate procedures, including those set out in the Antarctic Flight Information Manual (AFIM).”

⁹⁷ *Id.* (B)(6) “Dispose of Waste materials in accordance with Annex III and IV of the Protocol. These annexes prohibit, among other things, the discharge of plastics, oil and noxious substances into the Antarctic Treaty Area; regulate the discharge of sewage and food waste; and require the removal of most wastes from the area.”

⁹⁸ *Id.* (B)(9) “Maintain a careful and complete record of their activities conducted.”

⁹⁹ *Id.* (C) “On completion of the activities[:] Within three months of the end of the activity, organisers and operators should report on the conduct of it to the appropriate national authority in accordance with national laws and procedures. Reports should include the name, details and state of registration of each vessel or aircraft used and the name of their captain or commander; actual itinerary; the number of visitors engaged in the activity; places, dates and purposes of landings and the number of visitors landed

B. PURPOSE OF STUDY

Over time, tourism has been dealt with in diverse *fora*, notably ATCM; the Antarctic Treaty Meeting of Experts on Tourism and Non-Governmental Activities¹⁰⁰ [hereinafter ATME] held in *Trømsø*, Norway (2004);¹⁰¹ and a variety of other conferences and workshops.¹⁰² Most recently, further debate has taken place at the 29th ATCM in Edinburgh, Scotland.¹⁰³ To date, many proposals have been put forward as a result of these meetings and efforts.¹⁰⁴ At present, however, decisions must be made regarding which proposal should be put into effect first. This paper is intended to be a contribution to that aim. The method presented here consists of exposing the main problems tourist activity poses and suggested solutions, then collecting and analyzing the data, and finally identifying those measures that could probably work best to reconcile tourism with the principles and objectives of the ATS.¹⁰⁵

The first chapter addresses the history of Antarctic tourism and lays out its main features to provide background about the circumstances that led up to the challenges presently faced by the continent vis-à-vis international law and tourism. In addition, this chapter explores the current state of affairs of the industry, providing key information by description and comparison, before entering into the debate. The second chapter discusses the behavior of tourist industry in the environmental, scientific and political arenas, and analyzes specific concerns brought up over the successive Antarctic meetings. The third

on each occasion; any meteorological observations made, including those made as part of the World Meteorological Organization (WMO) Voluntary Observing Ships Scheme; any significant changes in activities and their impacts from those predicted before the visit was conducted; and action taken in case of emergency.”

¹⁰⁰ With respect to the issue of tourism, the 26th ATMC designated the following topics to be addressed at the ATME: 1) Monitoring, cumulative impact and environmental impact assessment; 2) Safety and self sufficiency, including search and rescue and insurance; 3) jurisdiction, industry self regulation and an analysis of the existing legal framework and identification of gaps; 4) Guidelines; 5) Adventure (extreme) tourism, and government sponsored tourism; and 6) Coordination amongst national operators. See 26th ATCM, Doc XXVI ATCM/Dec. 5, at <http://www-old.aad.gov.au/goingsouth/tourism/Research/TreatySys/ATCM/Year/1966ATCM4/ATCM4rec27.asp> (visited June 6, 2005).

¹⁰¹ ATME, *supra* note 77, <http://npolar.no/atme2004/> (last modified Feb.19, 2004).

¹⁰² For a list of consultative meetings, diplomatic conferences and meeting of experts, see <http://www.ats.aq/> (last visited June 10, 2006).

¹⁰³ 29th ATCM, *supra* note 6, <http://www.ats.aq/29atcm/> (last visited July 16, 2006).

¹⁰⁴ A working group on tourism and non-governmental activities has been operating since the 27th ATCM; see ASOC, *supra* note 6, at 3 (2006), available at http://www.ats.aq/Atcm/atcm29/ip/atcm29_ip120_e.doc (last visited June 19, 2006).

¹⁰⁵ With respect to sources of information, Antarctic meetings’ official documents, particularly informative papers, working papers [hereinafter WP], and final reports [hereinafter FR] count among the authorities primarily consulted. A number of books, scientific journals and law reviews have been used as a secondary though indispensable source. Additionally, numerous websites have been visited, whose uniform resource locator has insofar as possible been added to citations for the reader to easily access the material.

chapter looks at possible approaches to improve the management of the industry with respect to the three fields aforementioned. The fourth chapter examines the need for new rules on tourism as well as the legal instruments available. Lastly, remarks are set forth to the reader in the conclusions.

For the purposes of this paper, tourism includes all people visiting the area located south of 60° south latitude, who are neither associated with a National Antarctic Program [hereinafter NAP]¹⁰⁶ nor acting under any other official governmental capacity. Furthermore, figures presented herein do not comprise the staff and crew working aboard the vessels or aircrafts used to visit the continent, unless they are expressly included.

¹⁰⁶ The concept of National Antarctic Programs refers to the activities conducted by a country in Antarctica, which are therefore officially sponsored by such country. See <http://www.comnap.aq/> (last visited July 9, 2006).

CHAPTER II

HISTORY OF ANTARCTIC TOURISM

A. 1910 - 1956: THE PROMISE OF TOURISM

The exploration of the Antarctic Region begun in the eighteenth century when the French lieutenant Jean Baptiste Charles Bouvet de Lozier ventured to sail past the 50° south and discovered in 1739 the island that almost two centuries later Norway was to name after him.¹⁰⁷ The nineteenth century witnessed twenty-eight voyages/expeditions, among them Edward Brandfield's (1819-1820), Thaddeus Thaddevich Belinghaussen's (1819-1821), and Nathaniel Brown Palmer's (1819-1820),¹⁰⁸ on the basis of which England, Russia and the United States continue to dispute, through today, which country discovered the last continent. The past century served as a stage for heroic journeys such as Roald Amundsen's conquest of the pole in December 1911,¹⁰⁹ the tragedy of Robert Falcon Scott after having reached the pole in January 1912;¹¹⁰ and Ernest Shackleton's odyssey upon the breakdown of the *Endurance* in 1915.¹¹¹ It is certainly amazing that in the middle of the heroic age of explorations someone envisioned tourism as a feasible business in Antarctica. As a matter of fact, the first case of tourism in Antarctica goes as far back as November 4th 1910, when *The Press*, a newspaper from Christchurch, New Zealand, published the arrangements for a trip reportedly organized by the tourist agent Thomas Cook and sons. The trip would have departed from New Zealand towards the McMurdo Sound in the Ross Sea area, but it never actually left for its destination.¹¹²

¹⁰⁷ See University of Cambridge, Scott Polar Research Institute, at <http://www.spri.cam.ac.uk/resources/expeditions/> (last visited June 10, 2005).

¹⁰⁸ ROBERT K. HEADLAND, CHRONOLOGICAL LIST OF ANTARCTIC EXPEDITIONS AND RELATED HISTORICAL EVENTS 113-5 (1989).

¹⁰⁹ *Id.* at 249.

¹¹⁰ *Id.*

¹¹¹ *Id.* at 259.

¹¹² See Rosamunde J. Reich, *The Development of Antarctic Tourism*, 20 POLAR REC. 203, 205 (1980). [hereinafter Reich, *Development of Antarctic Tourism*] But see Robert K. Headland, *Historical Development of Antarctic Tourism*, 21 ANNALS OF TOURISM RESEARCH, 269, 290 (1994) (tourism in the Antarctic has over a century of history).

B. 1956 – 1965: THE DAWN OF COMMERCIAL TOURISM

Modern commercial tourism is said to have commenced on December 22nd 1956, when the Chilean airplane Douglas DC-6B of *Linea Aerea Nacional* (Chilean National Airlines) flew over the South Shetland Islands and the Trinity Peninsula in the Antarctic Peninsula with sixty-six passengers aboard.¹¹³

The first commercial flight that actually landed on Antarctica took place in October 15th 1957, when a Pan Am Boeing Stratocruiser departed from Christchurch to end up in McMurdo Sound.¹¹⁴ Shortly after, Argentina opened the ship-borne era of tourism in January 1958 with the vessel *Les Eclaireurs*, which carried 194 passengers in two journeys to the Peninsula. Throughout this decade, tourism activity was by and large undertaken by gov.1(097 32-)5.nf t

shot experience only.¹²⁰ On the other side, New Zealand's entrepreneurs attempted to arrange further trips to Mc Murdo, but the United States Antarctic Policy Group denied authorization to use the station.¹²¹

With respect to ship-borne tourism, the probable explication for the cease lies in the government-driven character of these undertakings.

Table 1: Sea-borne and air-borne tourism to Antarctica from 1956 through 1965.

Season	Sea-borne	Comments	Source	Air-borne	Comments	Source	Total
1956-57	0	No sail-trips	Reich, 1980, at 207; Enzenbacher, 1992, at 18.	66	First tourist flight, LAN Chile DC-6B to the Ant. Pen., Dec. 22, 1956.	Headland, 1989, at 363; Enzenbacher, 1992, at 18; Bauer, 2000, at 80.	66
1957-58	194	<i>Les Eclaireurs</i>	Reich, 1980, at 207; Enzenbacher, 1992, at 18.	160	Pan Am Stratocruiser flight landed at McMurdo with U.S. naval personnel and media, Oct. 15, 1957.	Reich, 1980, at 207-9; Enzenbacher, 1992, at 18.	354
1958-59	344	<i>Navarino, Yapeyu</i>	Reich, 1980, at 207; Enzenbacher, 1992, at 18.	0	No flights	Reich, 1980, at 211	344
1959-60	0	No sail-trips	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	0
1960-61	0	No sail-trips	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	0
1961-62	0	No sail-trips	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	0
1962-63	0	No sail-trips	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	0

¹²⁰ See THOMAS G. BAUER, TOURISM IN THE ANTARCTIC: OPPORTUNITIES, CONSTRAINTS, AND FUTURE PROSPECTS, 80 (2001) [hereinafter BAUER]; see also HEADLAND, *supra* note 108, at 363.

¹²¹ See Reich, *Development of Antarctic Tourism*, *supra* note 112, at 209.

1963-64	0	No sail-trips	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	0
1964-65	0	No sail-trips	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	0

C. 1966 – 1990: STEADY GROWTH OF TOURISM

While the period in between 1910 to 1956 may be regarded as the birth of the idea of Antarctic tourism, and 1956 to 1966 represents the first attempts to set up the industry, the phase from 1966 to 1990 can be deemed the beginning of tourism as permanent commercial activity in Antarctica. The year 1966 itself constitutes a watershed not only because tourism resumed,¹²² but also because the Antarctic Treaty System for the very first time addressed the issue explicitly through Recommendation IV-27 on “Effects of Antarctic Tourism”.¹²³ The approach taken by the consultative parties was nevertheless cautious, since they focused on the possible harmful effects this activity could bring about to environmental conservation and science.¹²⁴ Accordingly, the resolution set out measures to coordinate visits to scientific stations and to take assurances for compliance to Treaty provisions and recommendations.¹²⁵

The development of the market was achieved thanks to both governmental support and the participation of private companies. Regarding the former, state involvement in tourism was particularly important from 1966 to 1976, when Argentina owned four and Chile two of the eleven vessels that

¹²² See *infra* Table 2 p. 18.

¹²³ *Effects of Antarctic Tourism*, 4th ATCM Doc. IV ATCM/Rec. 27 (1966) [hereinafter Rec. IV-27] (draft submitted by Argentina and the United States became Rec. IV-27), available at [http://www-old.aad.gov.au/goingsouth/tourism/Research/TreatySys/ATCM/Year/1966 ATCM4/ ATCM4 rec27.asp](http://www-old.aad.gov.au/goingsouth/tourism/Research/TreatySys/ATCM/Year/1966%20ATCM4/ATCM4%20rec27.asp) (last visited May 8, 2005).

¹²⁴ *Id.* Preamble “... Recognizing that the effects of tourist activities may prejudice the conduct of scientific research, conservation of fauna and flora and the operation of Antarctic stations . . .”

¹²⁵ *Id.* 3 “Such permission [for the expedition] be withheld unless reasonable assurances are given of compliance with the provisions of the Treaty, the Recommendations then effective and the conditions applicable at stations to be visited.”

navigated to Antarctica.¹²⁶ In fact, 2284 (78%) out of the 3644 tourists during the peak season of 1974-1975 were carried aboard the Argentine ship *Libertad* in six successive trips to the Peninsula.¹²⁷

With respect to the involvement of private enterprises, several companies entered the market. The first one, *Lindblad Travel Inc.*, started out chartering *Lapataia* in 1966 and 1967,¹²⁸ and turned to the Chilean ship *Aquiles* during the 1968-1969 season.¹²⁹ Shortly after, in 1970 it begun running the *Lindblad Explorer*,¹³⁰ which served the company until its grounding near Wiencke Island on Christmas Eve 1979.¹³¹ For its part, the Spanish shipping company *Ybarra y Cia.* introduced the *Cabo San Roque* and *Cabo San Vicente* in 1974, both the largest vessels up to that time, each capable of carrying up to 800 passengers.¹³² As a result of increased fuel prices, governmental involvement decreased significantly after December 1976.¹³³ It was at this time that private companies became dominant in the market, particularly the American-based *Lindblad Travel Inc. Society Expeditions*, and *Travel Dynamics* along with the German-based *Neckermann und Raisen* (NUR) and *de Vries*.¹³⁴

In this stage, there arose what later on would be a major feature of Antarctic tourism, the concentration of sea-based trips in the Antarctic Peninsula. From the 1966-1967 to 1979-1980 seasons, sixty-eight trips reached the Peninsula, whereas only four went to the Ross Sea area, and three routes included both places.¹³⁵ On the other hand, the bulk of tourist flights that took place to Antarctica throughout the same period landed at the Ross Sea area, especially McMurdo Station, the South Pole, C.

¹²⁶ See Reich, *Development of Antarctic Tourism*, *supra* note 112, at 207. The author states that the Argentinean ships were *Lapataia*, *Libertad*, *Rio Tunuyan* and *Regina Prima*; whereas *Navarino* and *Aquiles* belonged to Chile.

¹²⁷ See *id.* at 208.

¹²⁸ See *id.* (*Lapataia* carried to Antarctica fifty-eight passengers in Jan–Feb. 1966; forty-eight in Jan. 1967, and forty six in Feb. 1967).

¹²⁹ See *id.* at 207 (*Aquiles* carried one hundred and twelve passengers in Jan. 1969).

¹³⁰ HEADLAND, *supra* note 108, at 459.

¹³¹ *Id.* at 525.

¹³² Reich, *Development of Antarctic Tourism*, *supra* note 112, at 207-8. For pictures of both *Cabo San Roque* and *Cabo San Vicente*, see Ybarra y Cia., <http://personales.mundivia.es/mantilla/038900in.htm> (last visited June 20, 2005).

¹³³ See *infra* Table 2 p. 18.

¹³⁴ See Reich, *Development of Antarctic Tourism*, *supra* note 112, at 207-8. For a detailed list of American companies, see also Enzenbacher, *Tourists in Antarctica: Numbers and Trends*, *supra* note 114, at 19.

¹³⁵ See Reich, *Development of Antarctic Tourism*, *supra* note 112, at 207-8. The author states that a fourth trip to the Peninsula region is believed to have been organized by “Lindblad Travel Inc.” during the 1974-1975 season, although no accurate information about the date, ship and passenger number is available.

Hallet, C. Hudson and Dumont d'Urville.¹³⁶ *Quantas* and *New Zealand Airlines* were the most important air-based tourism operators to Antarctica at this time, which arranged forty-four flights between 1977 and 1980. Unfortunately, this trend came to a tragic end on November 28th 1979, when an Air New Zealand DC-10 plane crashed into Mount Erebus on Ross Island resulting in 257 deaths (237 passengers and 20 crew members) dead with no survivors.¹³⁷ Shortly after this tragic event, tourist over-flights wholly stopped,¹³⁸ to resume only as of the 1983-1984 season when Chile began performing summer flights from Punta Arenas to King George Island, carrying forty passengers on average per trip.¹³⁹

The final consolidation of Antarctic tourism came with the birth of adventure-tourism with the inception of Adventure Network International [hereinafter ANI] in 1985.¹⁴⁰ In August 1991 ANI would become one of the seven founding members of the International Association of Antarctica Tour Operators [hereinafter IAATO],¹⁴¹ which has provided the framework and structure for today's ever-expanding tourism industry on the continent.¹⁴²

Table 2: Sea-borne and air-borne tourism to Antarctica from 1966 through 1990.

Season	Sea-borne	Comments	Source	Air-borne	Comments	Source	Total
1965-66	58	<i>Lapataia</i> , Lindblad Travel Inc. (LTI) USA.	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	58
1966-67	94	<i>Lapataia</i> , by LTI (2 trips to the peninsula)	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	94
1967-68	147	<i>Navarino</i> (peninsula); <i>Magga Dan</i> (Ross), two trips	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	147

¹³⁶ *See id.* at 211.

¹³⁷ For a detailed report on the accident, *see* the website of Christchurch City Libraries, <http://library.christchurch.org.nz/Childrens/NZDisasters/Erebus.asp> (last visited June 20, 2005); for sounds files, *see* the New Zealand history website, <http://www.nzhistory.net.nz/Gallery/police/sound-files.html> (last visited June 20, 2005).

¹³⁸ HEADLAND, *supra* note 108, at 519.

¹³⁹ Enzenbacher, *Tourists in Antarctica: Numbers and Trends*, *supra* note 114, at 18-9.

¹⁴⁰ *See id.* at 19 (1992); *see also* Adventure Network International, <http://www.adventure-network.com/> (stating 1985 as the year of inception and beginning of operations).

¹⁴¹ Enzenbacher, *Tourists in Antarctica: Numbers and Trends*, *supra* note 114, at 20-1.

¹⁴² *See* International Association of Antarctica Tour Operators [hereinafter IAATO], <http://www.iaato.org/> (last visited May 26, 2006).

		each; by LTI					
1968-69	1,312	<i>Aquiles</i> by LTI; and <i>Libertad</i> by Direccion Nacional del Turismo (DNT), and Empresa Lineas Maritimas Argentinas (ELMA)	Reich, 1980, at 207; Enzenbacher, 1992, at 18	75	1 flight, Convair 990 landed McMurdo, Nov. 22, 1968.	Reich, 1980, at 207-11	1,387
1969-70	972	<i>Rio Tunuyan</i> by DNT & EL MA; <i>Lindblad Explorer</i> by LTI ; 2 trips each to peninsula	Reich, 1980, at 207; Enzenbacher, 1992, at 18	3?	2 flights from New Zealand landed McMurdo, but pax. # not confirmed	Reich, 1980, at 211; Headland, 1989, at 458.	975
1970-71	943	<i>Rio Tunuyan</i> (peninsula), by DNT & ELMA; <i>L. Explorer</i> (Ross) by LTI; 2 trips each	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 211	943
1971-72	984	<i>Libertad</i> by DNT & ELMA; <i>L. Explorer</i> by LTI; 2 trips each to peninsula	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0?	1 flight Nov. 71, two more flights either 1971 or 1972	Reich, 1980, at 210-11	984
1972-73	1,175	<i>Libertad</i> by DNT & ELMA; <i>L. Explorer</i> by LTI; 2 and 4 trips to peninsula respectively	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0	No flights	Reich, 1980, at 210-11	1,175
1973-74	1,876	<i>L. Explorer</i> by LTI, and <i>Cabo San Roque</i> by Ybarra Spain (4 trips to peninsula; <i>L. Explorer</i> 1 trip to Pen. And Ross)	Reich, 1980, at 207; Enzenbacher, 1992, at 18	0?	1 flight, LAN Chile B 707 to Ant. Pen., Feb. 7-10, 1974, crossing the South Pole; pax. number n/a	Reich, 1980, at 211; Headland, 1989, at 483.	1,876
1974-75	3,644?	<i>Regina Prima</i> by DNT-ELMA (6 trips); and <i>Cabo San Roque</i> by Ybarra (1 trip) All trips to peninsula	Reich, 1980, at 207; Enzenbacher, 1992, at 18; Headland 1989, at 490.	0	No flights	Reich, 1980, at 211	3,644

1975-76	1,890?	<i>Regina Prima</i> by DNT-ELMA; 6 trips to peninsula.	Reich, 1980, at 207; Enzenbacher, 1992, at 18 Headland 1989, at 496.	0	No flights	Reich, 1980, at 211	1,890
1976-77	1,068	<i>L. Explorer</i> by LTI (4 trips to Pen); <i>Enrico C</i> by Costa Lines-Italy (1 trip to peninsula)	Reich, 1980, at 207; Enzenbacher, 1992, at 18	1,130?	5 flights by Quantas & Air New Zealand (NZ) Pax. # inferred from type of plane. B747=300; B707=100; DC10=215	Reich, 1980, at 210-11	2,198
1977-78	845	<i>L. Explorer</i> by LTI, <i>World Discoverer</i> by NUR, and <i>Bahia Buen Suceso</i> by Transportes Navales-Argentina	Reich, 1980, at 207; Enzenbacher, 1992, at 18	4,160?	17 flights, Quantas, Air NZ & Pan Am; pax # inferred from type of plane.	Reich, 1980, at 210-11	5,005
1978-79	1,048	<i>L. Explorer</i> by LTI, <i>World Discoverer</i> by NUR and Society Expeditions-USA	Reich, 1980, at 207; Enzenbacher, 1992, at 18	4,260?	16 flights, Quantas & Air NZ; pax. # inferred from type of plane.	Reich, 1980, at 210-11	5,308
1979-80	855	<i>L. Explorer</i> by LTI, <i>World Discoverer</i> by LTI and de Vries.	Reich, 1980, at 207; Enzenbacher, 1992, at 18	1,182?	16 flights, Quantas & Air NZ; pax. # inferred from type of plane. Tragedy of Mount Erebus	Reich, 1980, at 210-11	2,037
1980-81	855	<i>Lindblad Explorer & World Discoverer</i> , 4 cruises each. Yatch cruises	Enzenbacher, 1992, at 18; Headland, 1989, at 534-5.	0?	No flights confirmed	Enzenbacher, 1992, at 17-9	855
1981-82	1,441	<i>Lindblad Explorer & World Discoverer</i> , 2 and 4 cruises respectively. Yatch cruises	Enzenbacher, 1992, at 18; Headland, 1989, at 542-3.	0	Some pax airborne & sea borne; Aerolineas Argentinas overflights	Enzenbacher, 1992, at 17-9; Headland, 1989, at 535.	1,441
1982-83	719	<i>Lindblad Explorer, World Discoverer & Yatch</i> cruises	Enzenbacher, 1992, at 18; Headland, 1989, at 553.	2	Piper aircraft from P. Arenas to Rodolfo Marsh station	Enzenbacher, 1992, at 17-9; Headland, 1989, at 554.	721

1983-84	834	<i>Lindblad Explorer, World Discoverer & Yacht cruises</i>	Enzenbacher, 1992, at 18; Headland, 1989, at 562.	265	Two Chilean aerolines made six flights from P. Arenas to Rodolfo Marsh	Enzenbacher, 1992, at 17-9; Headland, 1989, at 563.	1,099
1984-85	544	Yacht cruises	Enzenbacher, 1992, at 18; Headland, 1989, at 570.	92 (over 200?)	Chilean and Argentinean tourist flights. Chilean plane crashed in King George Island	Enzenbacher, 1992, at 17-9; Headland, 1989, at 563, 570.	636
1985-86	631	<i>Society Explorer (ex-Lindblad), World Discoverer & Yacht cruises</i>	Enzenbacher, 1992, at 18; Headland, 1989, at 578-80.	151	Travel Corporation of America, flights from P Arenas to R. Marsh	Enzenbacher, 1992, at 17-9; Headland, 1989, at 578.	782
1986-87	1,797	<i>Society Explorer (ex-Lindblad), World Discoverer & Yacht cruises</i>	Enzenbacher, 1992, at 18; Headland, 1989, at 589-90.	30	Several companies operating from P Arenas to R. Marsh; Piper from Argentina to Marambio station	Enzenbacher, 1992, at 17-9; Headland, 1989, at 589-90.	1,827
1987-88	2,782	<i>Society Explorer (ex-Lindblad), World Discoverer, Yllyria & Rio Baker; Yacht cruises</i>	Enzenbacher, 1992, at 18; Headland, 1989, at 600.	244	Details not incorporated	Enzenbacher, 1992, at 17-9	3,026
1988-89	3,146	Details not incorporated	Enzenbacher, 1992, at 18	370	Details not incorporated	Enzenbacher, 1992, at 17-9	3,516
1989-90	2,460	Details not incorporated	Enzenbacher, 1992, at 18	121	Details not incorporated	Enzenbacher, 1992, at 17-9	2,581
1990-91	4,698	Details not incorporated	Enzenbacher, 1992, at 18	144	Details not incorporated	Enzenbacher, 1992, at 17-9	4,842

D. 1991 – 2005: DRAMATIC GROWTH OF TOURISM

The most recent stage of Antarctic tourism development opened on October 4th 1991 with the conclusion of PEPAT,¹⁴³ which constituted a response to the international pressure on the ATS for immediate

¹⁴³ PEPAT, *supra* note 12.

measures in order to anticipate potential impacts of human activity on the Antarctic environment.¹⁴⁴ Previously, in 1988, the parties had negotiated and concluded the Convention on the Regulation of Antarctic Mineral Resources Activities.¹⁴⁵ However, in January 1989, the breakdown of the Argentine vessel *Bahia Paraiso* brought about the first major oil spill in Antarctica.¹⁴⁶ During this ship wreck, 250,000 gallons of petroleum products were released a few miles off Palmer Station area.¹⁴⁷ Two smaller spills contemporaneously occurred within the treaty area: The grounding of the Peruvian ship BCI *Humboldt* near Fildes Bay,¹⁴⁸ and the U.S. South Pole Station.¹⁴⁹ Additionally, in March of the same year, the *Exxon Valdez* disaster took place in Alaska, thus re-enforcing demands for urgent action.¹⁵⁰

These scenarios built upon existing opposition from the scientific community and led several countries to reject CRAMRA. Australia and France spearheaded the opposition to the mineral regime, as they favored a convention for the comprehensive protection of the Antarctic environment.¹⁵¹ Chile, New Zealand, the United States, and Sweden joined them later at the 15th ATCM held in Paris in 1989.¹⁵² The Special Antarctic Treaty Consultative Meeting, held in Chile in 1990, witnessed the substantive discussion based on a paper presented by the Norwegian Ambassador,¹⁵³ which constituted the first draft of the Environment Protocol, which was adopted the subsequent year in Madrid.¹⁵⁴

¹⁴⁴ See Rajmah Hussain, *The Antarctic: Common Heritage of Mankind?*, in THE ANTARCTIC ENVIRONMENT AND INTERNATIONAL LAW 89, 90-2 (Joe Verhoeven et al. eds., 1992).

¹⁴⁵ CRAMRA, *supra* note 50. For a discussion of CRAMRA's main provisions, see Andrew N. Davis, Protecting Antarctica: Will a Minerals Agreement Guard the Door or Open the Door to Commercial Exploitation? 23 Geo. Wash. J. Int'l L & Econ. 733, 742 (1990) [hereinafter Davis, *Protecting Antarctica*].

¹⁴⁶ Angelini & Mansfield, *supra* note 19, at 177; For a photo gallery, see http://photos.orr.noaa.gov/gallery_4/incidents-10.htm (last visited July 16, 2006).

¹⁴⁷ See <http://www.eia.doe.gov/emeu/cabs/antarctica.html> (last visited May 15, 2005).

¹⁴⁸ Christopher C. Joyner, *The effectiveness of CRAMRA*, in GOVERNING THE ANTARCTIC: THE EFFECTIVENESS AND LEGITIMACY OF THE ANTARCTIC TREATY SYSTEM 152, 162-5 (Olav Schram Stokke & Davor Vidas eds., 1996).

¹⁴⁹ Francisco Orrego Vicuña, *The effectiveness of Protocol on Environmental Protection to the Antarctic Treaty*, in GOVERNING THE ANTARCTIC: THE EFFECTIVENESS AND LEGITIMACY OF THE ANTARCTIC TREATY SYSTEM 174, 175-6 (Olav Schram Stokke & Davor Vidas eds., 1996).

¹⁵⁰ Joyner, *supra* note 148.

¹⁵¹ Orrego, *supra* note 149, at 177.

¹⁵² *See id.*

¹⁵³ Blay, *supra* note 35, at 385.

¹⁵⁴ The first session of the Special Antarctic Treaty Consultative Meeting took place in Viña del Mar, Chile from Nov. 19 to Dec. 6, 1990; the second session was held in Madrid, Spain from Apr. 22, 1991 to Apr. 30, 1991; the final session was held in Madrid from Oct. 2, 1991 to Oct. 4, 1991. See Orrego, *supra* note 149, at 178.

With respect to statistics, 1991-1992 proved to be a turning point in the growing trend toward tourism, as for the first time, the total number of tourist visitors exceeded 5000 and outnumbered the scientists working within the 60°S area.¹⁵⁵ From that season on, the numbers of tourists kept growing and reached 27,662 visitors during the austral summer of 2003-2004.¹⁵⁶ In comparative terms, the former period of tourism development (1966-1990) accounted for only an average of 1886 tourists annually. The current period (1991-2005) amounted to an annual average of 11,197 visitors. Today, expeditions take place at a higher frequency,¹⁵⁷ with larger ships,¹⁵⁸ make landfall at a greater number of sites,¹⁵⁹ and operate during a longer season.¹⁶⁰ According to IAATO, over the 2003-2004 season nearly 80% of all sea-borne passengers disembarked.¹⁶¹

A number of factors caused tourism in the Antarctic to experience such rapid growth. Among them, the development of a worldwide trend towards nature-oriented tourism as opposed to “sun and sand”¹⁶² travels. In fact, the upgrade of economic and cultural standards, along with the progressive awareness of both the economic benefits and environmental impact of tourism, gave rise to the notion of *sustainable tourism*, which encompasses subcategories such as *eco-tourism*, *scientific-tourism*, and

¹⁵⁵ See Enzenbacher, *Tourists in Antarctica: Numbers and Trends*, *supra* note 114, at 19. The author holds that scientists were overtaken by tourists during the 1990/91 season (4000 estimated v. 4842 tourists registered respectively); *but see* Kees Bastmeijer & Ricardo Roura, *Regulating Antarctic Tourism and the Precautionary Principle*, 98 AM. J.

“adventure-tourism”.¹⁶³ Additionally, the end of Cold War and the ensuing decommissioning of Antarctic National Programs left available suitable infrastructure to mount large-scale tourist operations.¹⁶⁴ Plus, the industry has turned more attractive by means of product-diversification so that today it offers a complete suite of tailor-made packages to meet the expectations that potential consumers may have.¹⁶⁵

Table 3: Sea-borne and air-borne tourism to Antarctica from 1991 through 2005.¹⁶⁶

Season	Sea-borne	Comments	Source	Air-borne	Comments	Source	Total
1991-92	6,318	Includes ship and land-based passengers numbers	IAATO 1992-2005 Antarctic tourist trends	178	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	6,496
1992-93	6,704	Includes ship and land-based passengers numbers	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	6,704
1993-94	8,016	Includes ship and land-based passengers numbers	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	8,016
1994-95	8,120	Includes ship and land-based passengers numbers	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	8,120
1995-96	9,367	Includes ship and land-based passengers numbers	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	9,367
1996-97	7,413	Includes ship and land-based passengers numbers	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	7,413
1997-98	9,604	Includes ship and land-based passengers numbers + yacht commercial activity	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	9,604
1998-99	10,013	Includes ship and land-based passengers	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	10,013

¹⁶³ See World Ecotourism Summit, Quebec Declaration on Ecotourism (May 22, 2002), at <http://www.world-tourism.org/sustainable/TYE/quebec/anglais/quebec-eng.pdf> (last visited May 12, 2005).

¹⁶⁴ Francioni, *supra* note 8, at 8.

¹⁶⁵ United Kingdom, *supra* note 158, at 7.

¹⁶⁶ See IAATO, http://www.iaato.org/tourism_stats.html (last visited May 15, 2005).

		numbers + yatch commercial activity					
1999-00	14,762	Includes ship and land-based passengers numbers + yatch commercial activity	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	14,762
2000-01	12,248	Includes ship and land-based passengers numbers + yatch commercial activity	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	12,248
2001-02	11,588	Includes ship and land-based passengers numbers + yatch commercial activity	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	11,588
2002-03	13,571	Includes ship and land-based passengers numbers + yatch commercial activity	IAATO 1992-2005 Antarctic tourist trends	0	Details not incorporated	IAATO 1992-2005 Antarctic tourist trends	13,571
2003-04	24,318	19,369 landed + 4,949 non landed	IAATO I, Overview of Antarctic Tourism 2003-2004 Antarctic Season, Doc. XXVIATCM/IP 63, at 16	3,344	2,827overflights+ 517 air land based traditional tourism (ANI/DAP)	IAATO I, Overview of Antarctic Tourism 2003-2004 Antarctic Season, Doc. XXVIATCM/IP 63, at 16	27,662
2004-05	27,914	23414 landed + 4500 non landed	IAATO I, Overview of Antarctic Tourism 2003-2004 Antarctic Season, Doc. XXVIATCM/IP 63.	3,271	2745 overflights+ 526 air land based traditional tourism (ANI/DAP)	IAATO I, Overview of Antarctic Tourism 2003-2004 Season, Doc. XXVIATCM/IP 63.	31,185
Total	207,312			19,245			226,557

E. TOURISM TODAY

Antarctic tourism is expanding at a swift rate, but what does this growth exactly mean? In other words, what are the main features of the industry? Some of them are set forth as follows: First, despite having tripled since the Protocol was negotiated,¹⁶⁷ tourist activity remains modest when compared to other destinations.¹⁶⁸ For instance, the Norwegian archipelago of *Svaldbard* receives approximately 60,000 visitors per year.¹⁶⁹ Furthermore, the *Torres del Paine* [Towers of the Paine] National Park in Chilean Patagonia maintains an annual flow of nearly 100,000 people,¹⁷⁰ not to mention such tourism-oriented countries as Costa Rica, whose destinations in 2003 welcomed 1,238,692 tourists.¹⁷¹

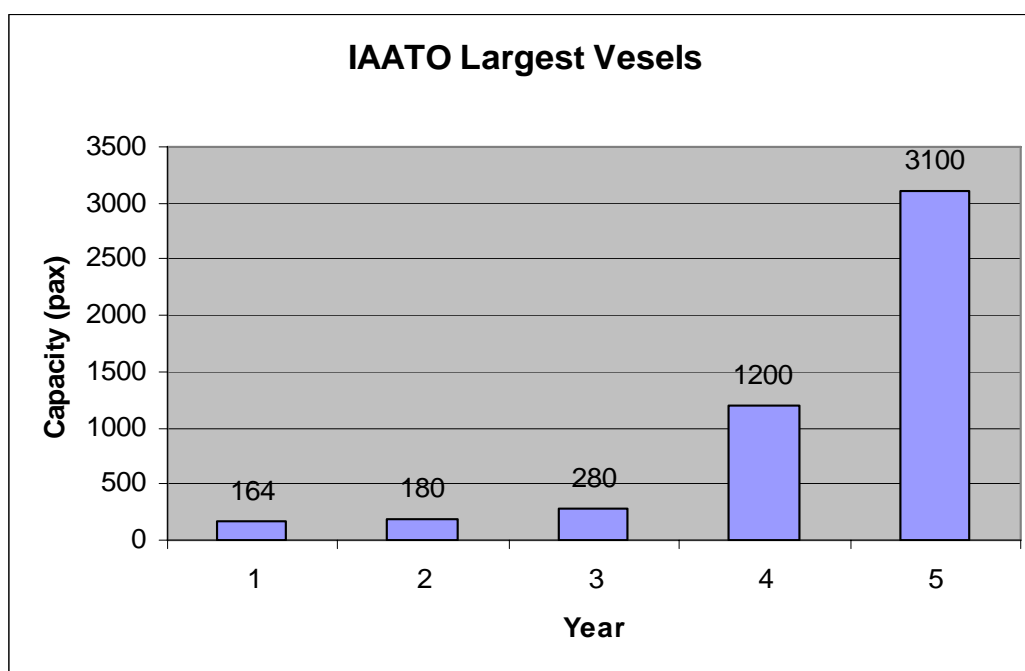


Figure 1: IAATO largest vessels.¹⁷²

¹⁶⁷ Argentina, *supra* note 159, at 1.

¹⁶⁸ Richard A. Herr, *The regulation of Antarctic tourism: a study in regime effectiveness*, in GOVERNING THE ANTARCTIC: THE EFFECTIVENESS AND LEGITIMACY OF THE ANTARCTIC TREATY SYSTEM 203, 205-6 (Olav Schram Stokke & Davor Vidas eds., 1996).

¹⁶⁹ New Zealand & United States of America, *Observations on Jon Johanson's South Pole Flight*, ATME Doc. ATME/Paper 26, at 4 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

¹⁷⁰ Servicio Nacional de Turismo [Chilean Agency for Tourism], *Estadísticas de Visitas a Areas Silvestres* [Statistics on Visits to Wildlife Protected Areas], at <http://www.sernatur.cl/scripts/sitio/industria03.php> (last visited May 15, 2005).

¹⁷¹ See <http://canatur.org/estadisticas/01.htm> (last visited March 11, 2005).

¹⁷² See <http://www.iaato.org:8181/IAATO/vessel/listVessels.jsp> (last visited March 11, 2005).

Secondly, ship-borne tourism, which is the most popular class of Antarctic tourism, has significantly increased its capacity to carry visitors over the last 15 years. Among IAATO members, (see figure 1) the largest vessel in 1990 was the *Bremen* (164 passengers), in 1995 it was the *Hanseatic* (180 passengers), in 2000 the *Vistamar* (280 passengers), while in 2005 the highest position was shared by the *Amsterdam* and the *Royal Princess*, able to bear up to 1,200 passengers each. Lastly, the *Golden Princess* is ready to start out the 2006-2007 season carrying aboard up to 3,100 passengers.¹⁷³

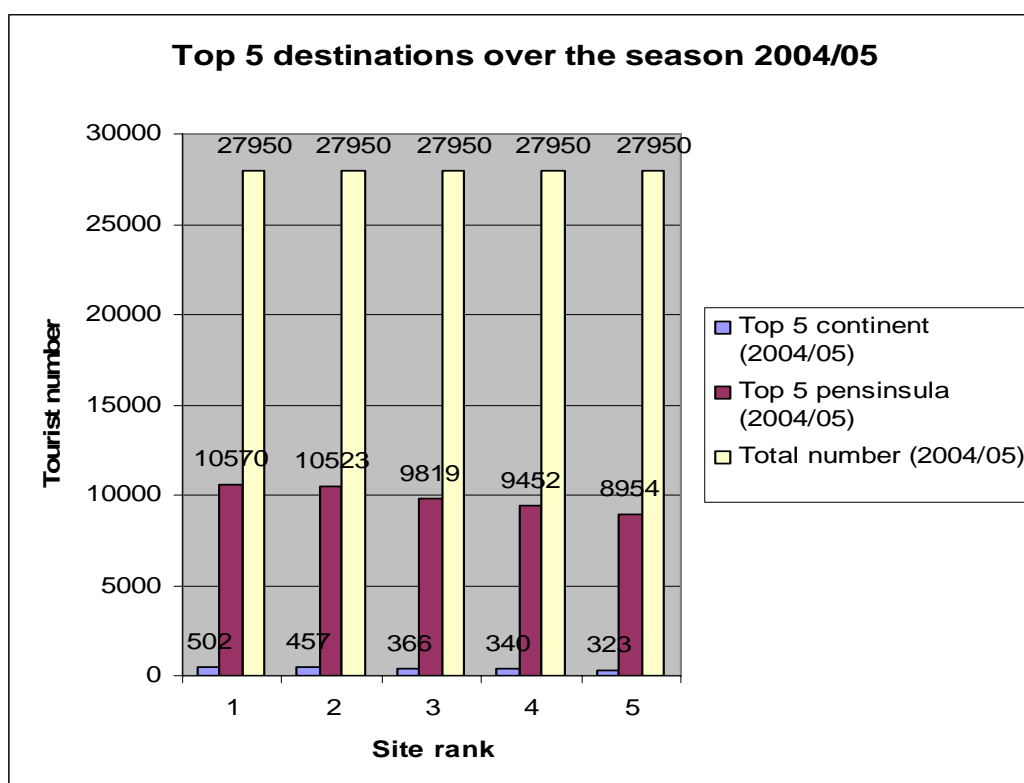


Figure 2: Top five destinations over the season 2004/2005.

Third, tourism concentrates its endeavors in the Peninsula and, to a lesser extent, in the Ross Sea/Continental area (see figure 2). Throughout the 2003-2004 season some 172 trips disembarked 14,902 passengers on the Peninsula, whereas only seven voyages let 489 passengers set foot on the rest of the continent.¹⁷⁴ The graphic below shows the relative significance of the top 5 destinations on both the

¹⁷³ See IAATO, <http://www.iaato.org/IAATO/vessel/listVessels.jsp?sortBy=shipA> (last visited June 8, 2006).

¹⁷⁴ IAATO, *supra* note 156, at 3-4.

continent (left column) and the peninsula (center column), as compared with the total number of tourist during the season 2004-2005.¹⁷⁵ The Peninsula is chosen as a favored destination owing to logistical factors, such as proximity to continental ports in southern South America and the abundance of scientific stations. It is a comparatively safe landing operation as well, due to pack-ice concentration less than in other regions. Finally, relatively greater comfort is afforded thanks to a milder climate and easier access to wildlife-inhabited sites.¹⁷⁶

Last, though not least, Antarctic tourism has diversified as it has developed quite novel products such as camping, skiing expeditions, snowboarding, mountaineering, marathons, kayaking, scuba diving,¹⁷⁷ flyovers,¹⁷⁸ and helicopter excursions.¹⁷⁹ Other innovative products are “fly – sail” or “fly – cruise” operations where, upon arrival to Antarctica on aircrafts, tourists are transferred onto vessels to avoid the unpleasant navigation across the Drake Passage.¹⁸⁰

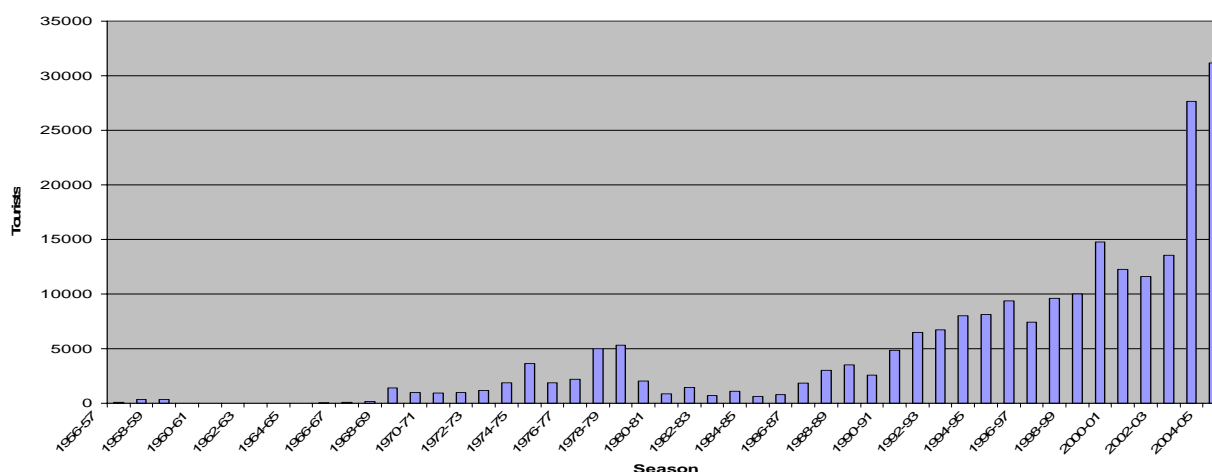


Figure 3: Tourists in Antarctica from seasons 1956 - 1957 through 2004 – 2005.

¹⁷⁵ See IAATO, http://www.iaato.org/tourism_stats.html (last visited May 15, 2005).

¹⁷⁶ Enzenbacher, *Tourists in Antarctica: Numbers and Trends*, *supra* note 114, at 19.

¹⁷⁷ Bastmeijer & Roura, *Regulating Antarctic Tourism*, *supra* note 155, at 765.

¹⁷⁸ See United Kingdom *supra* note 158, at 7. The author points out that overflights ceased after the tragedy of Mount Erebus and were resumed by Australia and later on by Chile. See also New Zealand, *An Analysis of the Existing Legal Framework for the Management of Tourism and Non-Governmental Activities in Antarctica: Issues, Some Proposals and Comments*, ATME Doc. ATME/Paper 7, at 3 (2004), at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

¹⁷⁹ See New Zealand, *supra* note 178, at 2. A sample of increasingly audacious undertakings is the recent south pole over flight carried out by a small home built aircraft,

¹⁸⁰ Antarctica XXI ("The First Air Cruise to Antarctica"), <http://www.antarcticaxxi.com/> (last visited June 20, 2005).

CHAPTER III

CHALLENGES ASSOCIATED WITH ANTARCTIC TOURISM

Just as with any human activity, tourism affects a variety of subjects. In the case of Antarctica a primary concern is the environment, given the fragility and pristine state of its ecosystems. Furthermore, the concerns of science also bear significant weight, since intense work of global importance is permanently carried out in the numerous Antarctic stations. Politically, the situation is also complicated since the continent is co-managed in a no-sovereign-state scheme. To define which problems are to be taken care of by regulating tourism it is critical to define its impacts over the three core values safeguarded by the ATS, which are the environment, science, and peace.¹⁸¹

A. ENVIRONMENTAL ISSUES

At this time, there is no indication that maritime tourism, the bulk of Antarctic tourism, has *per se* negative effects on the environment.¹⁸² However, the exact meaning of this assertion turns out to be highly controversial. In fact, while IAATO proclaims “In 35 years of Antarctic tourism there is very little discernible impact from tourist activities at any of the landing sites in the Antarctic”,¹⁸³ the Antarctic and Southern Ocean Coalition [hereinafter ASOC] replies, “the impact of routine tourism operations is not yet well known, despite the industry claims that there has been no impact from several decades of activity”,¹⁸⁴ making clear that lack of evidence does not necessarily means absence of an impact. This kind of dispute is by and large possible because environmental phenomena often have diverse and multiple causes, and also because it is easy to assume a connection between two successive events just because one took place right before the other. For instance, a decline in the overall number of breeding individuals within a penguin colony is frequently regarded as evidence of significant human disturbance; yet studies have

¹⁸¹ Herr, *supra* note 168, at 211-6.

¹⁸² See United Kingdom *supra* note 158, at 5.

¹⁸³ IAATO, *Overview Summarizing the Terms of Reference*, ATME Doc. ATME/Paper 12, at 4 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004). The author cites a gravel path at Deception Island and a trail at Penguin Island as only examples of impacts on the corresponding sites.

¹⁸⁴ ASOC, *supra* note 157, at 2.

concluded that this number significantly varies from season to season due to causes other than humans.¹⁸⁵

Notwithstanding the debate, a number of threats have been identified over the years regarding both regular operation of the industry, and emergency situations, whose analysis follows:

1. Introduction of Non-Native Species¹⁸⁶

The introduction of non-native species is said to be the most pressing ecological problem Antarctic tourism has given rise to thus far.¹⁸⁷ This is because, unlike many other types of impact (e.g., pollution), exotic species may have a continuous yet increasing effect on the environment. It is well known that invasive organisms may wipe out large parts of previously unexposed native populations, impair the natural balance of ecosystems as new competitors are added, and end up modifying entire landscapes.¹⁸⁸ Exotic species found in the white continent include domestic pets like dogs, cats, birds, and tropical fish; houseplants; accidentally introduced flies and mice; and a wide variety of viruses, bacteria, yeasts, fungi, and micro-algae.¹⁸⁹ Of particular concern is the poultry-related infectious *Bursal Disease Virus* detected in *Adelie* and Emperor penguins.¹⁹⁰

Because of the geographical and biological isolation of Antarctica, non-native organisms are unlikely to be introduced without a vehicle or human vector, which turns the spotlight to the possible pathways for exotics to reach Antarctica. Evidence implicates primarily ship and plane cargo, luggage, carry-on belongings; it is also suggested that marine microorganisms are being brought in on the hull of vessels.¹⁹¹

¹⁸⁵ Bernard Stonehouse and Kim Crosbie, *Tourist Impacts and the Management in the Antarctic Peninsula Area*, in POLAR TOURISM: TOURISM IN THE ARCTIC AND ANTARCTIC REGIONS 217, 227 (Collin Michael Hall & Margaret E. Johnston eds., 1995).

¹⁸⁶ For a detailed discussion of the subject, see New Zealand, "Non-native Species in the Antarctic" A Workshop, 29th ATCM Doc. XXIX ATCM/IP 46 (2006), available at http://www.ats.aq/Atcm/atcm29/ip/atcm29_ip031_e.doc (last visited June 16, 2006).

¹⁸⁷ Australia, *An Analysis of Potential Threats and Opportunities Offered by Antarctic Tourism*, ATME Doc. ATME/Paper 17, at 1 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

¹⁸⁸ Marjorie Wonham, *Species Invasions*, in PRINCIPLES OF CONSERVATION BIOLOGY, 293, 295 (Martha J. Groom et al., eds., 3rd ed., 2005).

¹⁸⁹ See The World Conservation Union [hereinafter IUCN], *Introduction of Non-Native Species in the Antarctic Treaty Area: An Increasing Problem*, 22nd ATCM Doc. XXII ATCM/IP 53, at 1 (1998), available at http://www.cep.aq/%5CMediaLibrary%5Casset%5CMediaItems%5Cml_381035167013889_IP%2053E.doc (last visited June 17, 2005).

¹⁹⁰ See *id.*

¹⁹¹ See Australia, *Establishment of Effective Antarctic Quarantine Controls for Tourism and Non-Governmental Activities*, ATME Doc. ATME/Paper 14, at 2 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004). A

Two areas need to be addressed in dealing with this issue: Preventive action and removal of existing non-native species. The first area has been dealt with through several types of norms including the Protocol, recommendations, and guidelines, all of which provide suitable regulations to the ships operating within the Antarctic area. Table 4 below provides a summary of the evolution of ATS rules over time and the chief obligations to prevent introduction of alien organisms.

Table 4: Regulations for non-native species

Instrument	Obligation
1) Recommendation I-VIII (Canberra, 1961): General rules of conduct for preservation and conservation of living resources in Antarctica	No alien species are to be deliberately introduced in Antarctica, save controlled exceptions.
1) Agreed Measures for the Conservation of Antarctic Flora and Fauna, art. IX (Brussels, 1964).	1) Not to bring non-native species into the Antarctic area unless permit is granted 2) Prevent introduction of invasive microorganisms into the treaty area (especial rules for living birds and non-sterile soil in appendix C. 3) Dogs must be vaccinated before brought into the Antarctic area.
Recommendation X-VIII (Washington, 1979), Statement of Accepted Practices, Conservation of Wildlife (v), and guidance for visitors (4).	1) Not to introduce exotic animals and plants, unless permit is granted. 2) Take precaution to avoid accidental introduction of parasites and diseases.
PEPAT, Annex II art. 4: Introduction of non-native species, parasites and diseases (Madrid, 1991).	1) Not to introduce exotic flora or fauna into the treaty area, unless permit is granted. 2) Prevent introduction of invasive microorganisms into the treaty area (especial rules for living birds and non-sterile soil in appendix C. 3) No dogs allowed into the Antarctic area.
Recommendation XVIII-1 (Kyoto, 1994), Guidance for visitors (A)(5).	1) Do not bring non-native plants or animals into the Antarctic.

Perhaps the only matter ATS has paid not attention to remains quarantine, which has prompted Australia to call for amendment of Recommendation XVIII-1¹⁹² in order to incorporate quarantine-specific rules.¹⁹³

systematic inspection of all Australian Antarctic division cargo and luggage being sent to the sub-Antarctic has documented the plant propagules found on clothing, equipment and supplies. Nearly thousand plant propagules representing 94 angiosperms were found on the clothing and bags of 70 per cent of the visitors that were checked.

¹⁹² Rec. XVIII-1, *supra* note 76.

¹⁹³ See Australia, *supra* note 191, at 3. The author regards quarantine control as especially significant for tourism since visitors usually bring their own clothing to Antarctica right after having visited other locations; see also Australia, *Principles underpinning Australia's approach to Antarctic quarantine management*, 29th ATCM Doc. XXIX ATCM/IP 44 (2006), available at http://www.ats.aq/Atcm/atcm29/ip/atcm29_ip044_e.doc (last visited June 16, 2006).

The issue of removal turns out to be somewhat more difficult as it sets out a regime of permits for introduction. The pertinent provision of the Antarctic Protocol reads:

“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*”(emphasis added).¹⁹⁴

The first problem is the failure of the Protocol to establish a duty to remove invasive plants and animals introduced before it became effective. Indeed, the phrase “Any other plant or animal introduced”¹⁹⁵ seems to comprise only those species brought in without any permit after January 14th 1998, although some opinions advocate that in the spirit of the Protocol, parties should be held accountable for all invasive organisms, whenever they have been introduced.¹⁹⁶ The second problem arises from the final clause (“unless ... fauna”),¹⁹⁷ whose unfortunate wording neglects the fact that even biologically harmless organisms can negatively affect other objectives of the ATS i.e., enhancing scientific research and preserving the Antarctic wilderness pristine.¹⁹⁸

2. Development of Permanent Facilities¹⁹⁹

Presently, there is no significant land-based tourism infrastructure in Antarctica because most companies cater to tourists aboard ships and, in the case of overnight stays on the continent, either appropriate arrangements with a national station are made or camping equipment is utilized.²⁰⁰ Moreover, the comparatively high costs of building have had a deterrent effect on private companies wishing to establish permanent structures on the continent. Nevertheless, as long as tourists are willing to spend considerable amounts of money for having a sight of the Antarctic wilderness, operators are likely to seek

¹⁹⁴ Annex II, *supra* note 59, art. 4(4).

¹⁹⁵ *Id.*

¹⁹⁶ See IUCN, *supra* note 189, at 3.

¹⁹⁷ Annex II, *supra* note 59, art. 4(4).

¹⁹⁸ See IUCN, *supra* note 189, at 3.

¹⁹⁹ For an overview of the key elements of the discussion of land-based tourism, see New Zealand & Australia, *Regulation of Land-based infrastructure to Support Tourism in Antarctica*, 29th ATCM Doc. XXIX ATCM/WP 15 rev. 1 (2006), available at http://www.ats.aq/Atcm/atcm29/wp/atcm29_ip015_e.doc (last visited June 16, 2006).

²⁰⁰ BAUER, *supra* note 120, at 80-83. The only tourist facilities within the Antarctic Treaty Area are the Chilean hotel “Estrella Polar” in King George Island, and the camp of Adventure Network International [hereinafter ANI] in the interior of the continent.

authorization to build facilities on land.²⁰¹ The international debate over land-based tourism runs along two elements. First, possible impacts on the environment;²⁰² and second, potential effects on the *modus vivendi* achieved under the ATS, given its clear implications for jurisdictional and sovereignty issues.²⁰³ This latter aspect will be discussed later in this chapter.²⁰⁴

The crucial question regarding the environment is whether the existence of permanent facilities would be compatible with the principles of the Protocol.²⁰⁵ The leading provision in this regard is article 3 of that legal body which reads: “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”.”²⁰⁶ This article makes clear that environmental protection, peace and science are paramount values, equal in hierarchy, and are meant to play out simultaneously. So, ATS Members need to find a balance among the three values so that none of them is suppressed in favor of the others. Thus, parties are entitled to conduct science even if in doing so the natural reserve condition of Antarctica is, in some reasonable degree, impaired; scientific activities may be reduced in order to safeguard friendly relationships among the member states, and so forth. This is not the situation of tourism, which, explicitly relegated to a secondary position in this ladder of values,²⁰⁷ can only be justified as a peaceful use of Antarctica,²⁰⁸ but not as an activity the ice continent is devoted to.²⁰⁹ In the view of countries opposing durable facilities, acceptance of land-based tourism would *de facto* raise this commercial undertaking to the same privileged condition as scientific research and would also jeopardize the intrinsic values of Antarctica in overt violation of the *scientific priority*²¹⁰ and the *consistency*

²⁰¹ See France, *Tourism and Non-Governmental Activities in Antarctica: Deficiencies in the Current Legal Framework*, ATME Doc. ATME/Paper 23, at 11 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

²⁰² See Australia, *Protection of Antarctica’s Intrinsic Values: Policy on Non-Government Activities*, 28th ATCM Doc. XXVIII ATCM/WP 38, at 1-2 (2005), available at http://www.ats.aq/Atcm/atcm28/wp/atcm28_wp038_e.doc (last visited June 6, 2006).

²⁰³ See New Zealand, “*Land-Based*” *Tourism in Antarctica*, 28th ATCM Doc. XXVIII ATCM/WP12, at 2, (2005), available at http://www.ats.aq/Atcm/atcm28/wp/atcm28_wp012_e.doc (last visited June 6, 2006).

²⁰⁴ See *infra* Part II.C.2

²⁰⁵ PEPAT, *supra* note 12, art. 3.

²⁰⁶ *Id.* art. 2.

²⁰⁷ New Zealand & Australia, *supra* note 199, at 4.

²⁰⁸ See Australia, *supra* note 202, at 1-2.

²⁰⁹ PEPAT, *supra* note 12, art. 3(4).

²¹⁰ *Id.* art. 3(3).

*requirement*²¹¹ mandated by the Protocol.²¹² Detractors claim as a corollary that article 3 expresses the parties' will to keep Antarctica free from inhabitants other than scientists.²¹³

Although fully coherent from a dogmatic standpoint, this approach suffers from excessive rigidity as it assumes that any kind of durable installations, no matter where they are erected, would harm the wilderness and the aesthetic values of Antarctica. Indeed, anyone might question this assertion by asking if a tourist building on King George Island, home of numerous scientific stations and recognized as one of the most polluted places on the whole continent would in any degree diminish the overall pristine condition of the last continent. It is also arguable whether this approach is realistic in the long run because pressure for durable facilities comes not only from private companies but also from small countries that see in tourism a way to bail out their underfunded national programs. Additionally, a total ban on permanent and even semi-permanent facilities would keep the whole system from obtaining significant advantages, in particular, the relief of scientific stations from constant disturbance by seasonal visitors.

Beyond legal interpretations, the current state of affairs indirectly favors the position against land-based tourism as a majority of countries favor maintaining tourism within the category of activities having no more than a minor or transitory impact on the Antarctic environment. This means that activities having more than such impact,²¹⁴ as is the case of permanent facilities, could not take place without prior comprehensive environmental evaluation.²¹⁵ Moreover, IAATO recently modified its by-laws to embrace this notion,²¹⁶ while Australia called for a regulatory approach to make clear that permanent or semi-permanent facilities for tourism and other non-governmental activities are inconsistent

²¹¹ *Id.* art. 3(4)(a).

²¹² See Germany, *The admissibility of land-based tourism in Antarctica under international law*, 28th ATCM Doc. XXVIII ATCM/IP 20, at 5-6 (2005), available at http://www.ats.aq/Atcm/atcm28/ip/atcm28_ip020_e.doc (last visited June 6, 2006).

²¹³ See New Zealand, *supra* note 203, at 2.

²¹⁴ PEPAT, *supra* note 12, art. 8(1)(b).

²¹⁵ Annex I, *supra* note 57, art. 3(1).

²¹⁶ See IAATO, *Land-based and the Development of Land-based Tourism Infrastructure in Antarctica: An IAATO Perspective*, 29th ATCM Doc. XXIX ATCM/IP 85, at 3 (2006), available at http://www.ats.aq/Atcm/atcm29/ip/atcm29_ip85_e.doc (last visited June 16, 2006).

with the principles of the Protocol and submitted a draft recommendation for consideration at the 28th consultative meeting.²¹⁷

3. Cumulative Impact of Antarctic Activities

This matter refers to “the impact of the past, present and reasonable foreseeable future activities”²¹⁸ over the same place. As pointed out by the World Conservation Union [hereinafter IUCN], cumulative effects may be “additive, interactive, synergistic, and antagonist or a result of bio-magnification;”²¹⁹ as they may develop from similar or diverse types of activities.²²⁰ Another feature of this notion is that even when such activities usually have an adverse impact on the environment (i.e. causing the breeding rate of endemic species to decrease), positive effects are also likely to arise from them, i.e. prompting preservation of historical sites.²²¹

Within the context of tourism in Antarctica, cumulative impacts go hand-in-hand with territorial and temporal concentration of industry since, as previously stated,²²² visits tend to come together at a few sites on the Peninsula and over a relatively short season,²²³ which boils down to greater pressure on highly visited places. Table 5 shows top five popular sites and the number of visitors received over the 2004-2005 season:²²⁴

Table 5: Top five popular sites in the Antarctic Peninsula.

Site name	Number of visitors (total)	Number of Visitors (disembarked)	% of Passengers that disembarked
<i>Whalers Bay</i>	10,570	10,403	98.42 %
<i>Cuerverville Island</i>	10,523	8,815	83.77 %

²¹⁷ See Australia, *supra* note 202, at 1-2.

²¹⁸ Bastmeijer & Roura, *Regulating Antarctic Tourism*, *supra* note 155, at 766.

²¹⁹ *Id.*

²²⁰ IAATO, *supra* note 183, at 3 (making reference to the workshop on cumulative impact in Antarctic held in Washington D.C., 1996).

²²¹ BAUER, *supra* note 120, at 121.

²²² See *supra* Chapter I.E

²²³ In fact, sites outside of the Peninsula are much less visited, e.g. the Ross Sea region maintains around 5% of Pass96 1 Tf3.913.0041

<i>Half Moon Island</i>	9,819	9,651	98.29%
<i>Neko Harbor</i>	9,452	9,326	98.67%
<i>Goudier Island</i>	8,954	8,892	99.31 %

Since the total number for the season amounted to 27,950 people²²⁵ and each visitor may land at several sites, it comes as a conclusion that the listed sites have individually received the impact of roughly one third of the total tourist flow.²²⁶ Therefore, these places are more likely to see their scientific, biologic, aesthetic or historic value diminished due to interference in research programs, disturbance of colonies of native species, damage to historical sites, or pollution of coastal areas.²²⁷

As mentioned before,²²⁸ the Protocol sets forth the process for the evaluation of environmental impact of every activity carried out within the Antarctic Treaty area. Article 8 makes a triple distinction among activities having less, equal or more than a minor or transitory impact.²²⁹ With respect to the evaluation of cumulative impacts, article 3 mandates this kind of impacts to be fully taken into consideration, including both the activity individually considered, and in connection with other undertakings carried out in the Antarctic Treaty area.²³⁰ In turn, article 6 calls on parties to consult with each other regarding their activities in Antarctica, so as to avoid cumulative impacts flowing from the excessive territorial concentration of stations and other facilities.²³¹ Annex I²³² further develops the Protocol's three-fold scheme and defines the suitable instrument for environmental assessment in each case, as follows:

²²⁵ See IAATO, at <http://image.zenn.net/REPLACE/CLIENT/1000037/1000116/application/vnd.ms-excel/NationalitiesbyVessel.xls> (last visited June 01, 2006).

²²⁶ The numbers only cover passengers who arrived on vessels to the peninsula. See IAATO, at http://image.zenn.net/REPLACE/CLIENT/1000037/1000116/application/vnd.ms-xcel/visitorsitevisitct_byvessel_pen.xls (visited Feb. 16, 2005).

²²⁷ Bastmeijer & Roura, *Regulating Antarctic Tourism*, *supra* note 155, at 766.

²²⁸ See *supra* Chapter I.A.2

²²⁹ PEPAT, *supra* note 12, art. 8(1)(a).

²³⁰ *Id.* art. 3(2)(c)(ii).

²³¹ *Id.* art. 6(1)(d).

²³² Annex I, *supra* note 57.

a) Activities having less than a minor or transitory impact:²³³ Article 1 of the Annex requires parties to conduct a preliminary assessment in order to identify activities having an impact less than minor or transitory, which are exempted from evaluation.²³⁴ As a result, cumulative impacts need not be appraised should the proposed activity fall into this category.

b) Activities having a minor or transitory impact:²³⁵ In this case, a rather simple statement called Initial Environmental Evaluation [hereinafter IEE] applies, which basically requires a description of the proposed activity, consideration of any impacts (cumulative included), and consideration of alternative activities.²³⁶

c) Activities having more than a minor or transitory impact:²³⁷ If from the IEE appears that the impact of the proposed activity exceeds the level of minor or transitory, a more stringent process called Comprehensive Environmental Evaluation [hereinafter CEE] is required.²³⁸ Cumulative impacts need to be taken into account, and additional requirements imposed on this category such as the mandatory consideration of no-action alternative,²³⁹ definition of a baseline for predicted changes to be compared with,²⁴⁰ identification of uncertainties,²⁴¹ and description of mitigation measures including monitoring programs.²⁴²

Even though cumulative impacts are readily comprehensible and their perils hardly deniable, the issue becomes fairly complex when assessment is put into practice. The first hurdle consists of finding out whether a causal link exists between the activity being assessed and the alleged cumulative impacts. Sometimes the connection may be proximate and certain, which is the case with the causal effect of high intensity tourism at Deception Island on the high concentrations of hydrocarbon detected at several tested

²³³ PEPAT, *supra* note 12, art. 8(1)(a).

²³⁴ Annex I, *supra* note 57, art. 1(2).

²³⁵ PEPAT, *supra* note 12, art. 8(1)(b).

²³⁶ Annex I, *supra* note 57, art. 2.

²³⁷ PEPAT, *supra* note 12, art. 8(1)(b).

²³⁸ Annex I, *supra* note 57, art. 3(1).

²³⁹ *Id.* art. (3)(2)(a).

²⁴⁰ *Id.* art. (3)(2)(b).

²⁴¹ *Id.* art. (3)(2)(j).

²⁴² *Id.* art. (3)(2)(g).

sites.²⁴³ In other cases, the connection turns out to be distant and yet disproved by the available evidence, as is the case with the suspected link between human activity near penguin colonies and the decrease in the population size. For instance, evidence from data collected around Palmer Station shows the opposite: the number of breeding birds has fallen by 43% from 1975 to 1992 at a tourist-free zone (Specially Protected Area), while at a nearby tourist-allowed zone the drop has been only 19%.²⁴⁴

Yet having solved the causation problem, a second obstacle in assessing cumulative impacts refers to the methodological need of isolating the effects of tourism from the effects of other activities taking place at the same time and space. For example, provided that tourists are visiting some stations continuously, how can tourist-driven wildlife disturbance be separated from that of scientists or supporting armed forces? It is worth noting that while tourism continues to increase, tourists probably cause less significant impacts than scientists and supporting staff because these two latter categories stay much longer in the area.²⁴⁵ In this context, IAATO has rightly contended that the alleged cause-effect linkage between tourism and cumulative impact is difficult to discern, arguing that mere increase or decrease of passengers does not inevitably lead to greater or lesser impact.²⁴⁶ Quite the contrary, it seems necessary to bring under analysis factors other than raw numbers, such as the sensitivity of the place to human activities, sub-categories of tourism (e.g. landing, only cruising and over-flying), topography and singularity of the landscape, proximity to other sites, conditions for anchoring, and meteorological information.²⁴⁷

A third problem lies in the capability of the Environmental Impact Assessment scheme to effectively prevent cumulative impacts from occurring. The first shortcoming is that the Protocol neither

²⁴³ See ASOC, *Coastal Sediment Pollution at Sites Frequently Visited by Tourism Operations*, 26th ATCM Doc. XXVI ATCM/Information Paper 117, at 3 (2003), at [http://www.aeci.es/26atcmadrid/docs/26IP117E%20\(ASOC%20CEP%204f\).doc](http://www.aeci.es/26atcmadrid/docs/26IP117E%20(ASOC%20CEP%204f).doc) (last visited May 30, 2006) (Preliminary results of hydrocarbon concentration in sediment samples).

²⁴⁴ Fraser, W.R. & Patterson, D.L., *Human disturbance and long term change in Adelie Penguin populations: a natural experiment at Palmer Station, Antarctic Peninsula*, in FINAL REPORT FROM THE INTERSESSIONAL CONTACT GROUP ON CUMULATIVE ENVIRONMENTAL IMPACTS, 26TH ATCM Doc. XXVI ATCM/Working Paper 6, at 42 (2003), at [http://www.aeci.es/26atcmadrid/docs/26WP006E%20\(US%20CEP%204c\).doc](http://www.aeci.es/26atcmadrid/docs/26WP006E%20(US%20CEP%204c).doc) (last visited May 30, 2006) (abstract of the project).

²⁴⁵ Herr, *supra* note 168, at 205-6.

²⁴⁶ IAATO, *supra* note 183, at 3.

²⁴⁷ *Id.* at 3-4.

defines nor offers examples of what constitutes a minor or transitory impact.²⁴⁸ Instead, the classification of any undertaking into one of those three categories is completely entrusted to domestic legislation,²⁴⁹ which gives rise to a wide array of national approaches in enacting implementing legislation, i.e. the United States makes the term "having more than a minor or transitory impact"²⁵⁰ of the Antarctic Conservation Act²⁵¹ a synonym of the sentence "significantly affecting the quality of the human environment" of its National Environmental Policy Act.²⁵² To solve the dilemma, guidance may be found in the measures adopted at the ATCMs for the implementation of the Protocol,²⁵³ the recommendations formulated by the Committee for Environmental Protection [hereinafter CEP] in performing its advisory functions,²⁵⁴ and the guidelines developed by the Council of Managers of National Antarctic Programs [hereinafter COMNAP].²⁵⁵ For instance, in accordance with the "Guidelines for Environmental Impact Assessment in Antarctica"²⁵⁶ the analysis of impacts demands, in the first place, identification of those components of the environment that will probably be affected by the proposed activity;²⁵⁷ (i.e. flora, fauna, freshwater, seawater, soil, air, etc.) secondly, the expected impacts of the activity need to be described by their nature,²⁵⁸ (i.e. landscape alteration, water pollution, increase of noise levels, impair of air quality, etc.) the territorial scope where environmental changes are likely to occur,²⁵⁹ (i.e. Antarctic Peninsula, King George Island, Fildes Bay, etc.) intensity of the impacts expressed in some quantitative measure,²⁶⁰ (i.e. one point increase in the concentration of hydrocarbons, 30% decrease in the breeding

²⁴⁸ GOVERNING THE ANTARCTIC: THE EFFECTIVENESS AND LEGITIMACY OF THE ANTARCTIC TREATY SYSTEM 191-92 (Olav Schram Stokke & Davor Vidas eds., 1996).

²⁴⁹ Annex I, *supra* note 57, art. 1(1).

²⁵⁰ 16 U.S.C.A. § 2403(a).

²⁵¹ *Id.*

²⁵² 42 U.S.C. 4321 et seq.

²⁵³ PEPAT, *supra* note 12, art. 10(1)(b).

²⁵⁴ *Id.* art. 12(1)(d).

²⁵⁵ See Council of Managers of National Antarctic Programs Council of Managers of National Antarctic Programs [hereinafter COMNAP], <http://www.comnap.aq/publications/guidelines> (last visited July 9, 2006).

²⁵⁶ *Amended Guidelines for Environmental Impact Assessment*, 28th ATCM Doc. XXVIII ATCM/Res. 4 (June 17, 2004), available at http://www.ats.aq/Atcm/RecAtt/Att266_e.pdf (last visited July 18, 2006).

²⁵⁷ *Id.* at 3.3.1.

²⁵⁸ *Id.* at 3.3.2.

²⁵⁹ *Id.*

²⁶⁰ *Id.*

rate, etc.) temporal scope,²⁶¹ (i.e. the tourist trips are intended to take place over ten seasons starting next) reversibility,²⁶² (i.e. even though the walking of visitors is expected to shape a number of paths over the site at issue, they will be fully removed by the operators at the end of each summer season) and estimation of lag time.²⁶³ (i.e. number of petrels is expected to decrease only after the third tourist season) Third, impacts need to be characterized as direct, indirect or cumulative, which respectively depends on whether the changes in the environment result immediately from the activity, (i.e. introduction of invasive species due to tourist landing) or from the subsequent interaction between the environment and those impacts, (i.e. reduction in the population of native species out-competed by the aliens) or finally from the combination of multiple activities and their impacts over a period of time.²⁶⁴ That done, sufficient information will have been gathered to appraise the significance of the proposed activity and determine which of the three categories it would fall within.²⁶⁵

The second weakness of the system is given by its reliance on intensity and duration of individual activities to define how fleeting the impact would be. This scheme makes possible that low-risk activities (if considered one at a time) may take place without comprehensive environmental evaluation even when long term impacts are much greater.²⁶⁶ Finally, the EIA provisions have been criticized on the ground that they accord the same treatment to both scientists and tourists despite their different capability or willingness to achieve outright fulfillment of their obligations. Detractors have remarked that as far as ongoing activities are concerned, scientists possess knowledge, experience, and equipment to take on the monitoring task; whereas tourism expeditions frequently lack these resources or are less willing to use them.²⁶⁷

²⁶¹ *Id.*

²⁶² *Id.*

²⁶³ *Id.*

²⁶⁴ *Id.*

²⁶⁵ *Id.* at 3.4.

²⁶⁶ See Bastmeijer & Roura, *Regulating Antarctic Tourism*, *supra* note 155, at 770.

²⁶⁷ *See Id.*

Part of the explanation for the problems previously discussed derives from the fact that when the Protocol was negotiated, scientific investigation was the dominant activity in the Antarctic whereas tourism was deemed as having only “certain magnitude”²⁶⁸ in comparison with national programs. Consequently, the procedure for Environmental Impact Assessment was tailor-made to fit national operators’ activities. However, scientific research and tourism constitute polar opposites in many respects. For instance, national programs tend to focus on one site whereas tourism routes usually cover several points. Likewise, national programs seldom have their work areas overlapped while tourist expeditions tend to converge in the same places.²⁶⁹

4. Accidents Involving Large Ships

New Zealand has summarized the existing concern of ship wrecks, stating that:

“the odds suggest regrettably it is only a matter of time before an inappropriately constructed vessel founders on rock or against ice, or collides with another vessel in the increasingly congested seas in certain areas during the brief Antarctic summer, with the release of thousands of gallons of heavy fuel oil into the Antarctic environment”.²⁷⁰

In view of the hazards attached to Antarctic navigation, ship breakdown has become a likely scenario in the near future and, if feared misadventures came true, the consequences would be catastrophic. Indeed, handling an accident within the Antarctic area becomes exceedingly tough due to the area’s remoteness from any continental entity capable of timely aid.²⁷¹ Yet having done arrangements for assistance, adverse climatic conditions may delay or even render impossible any Search and Rescue [hereinafter SAR] operation, thus resulting in loss of life and health damage. On top of that, in the event of a large vessel collapse, the spillage of large amounts of oil would ensure long-lasting pollution.²⁷² Risk factors mainly deal with the following aspects:

²⁶⁸ See Argentina, *supra* note 159, at 1.

²⁶⁹ Alan D. Hemmings & Ricardo Roura, *A square peg in a round hole, fitting impact assessment under the Antarctic Environmental Protocol to Antarctic Tourism*, 21 IMPACT ASSESSMENT PROJECT APPRAISAL 13 (2004), at <http://www.asoc.org/Documents/Tourism/IAPAm03Hemmings.pdf> (last visited June 15, 2005).

²⁷⁰ See New Zealand, *supra* note 178, at 3.

²⁷¹ See *id.*, at 2.

²⁷² Italy, *Some Remarks and Proposals on the Antarctic Tourism Issue*, ATME Doc. ATME/Paper 19, at 2 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

- a) Ship-construction and equipment: A concern is that current vessels cruising austral waters, particularly the largest ones, are neither ice-strengthened²⁷³ nor adapted for operating in ice-covered waters.²⁷⁴ In contrast, the guidelines adopted by the International Maritime Organization [hereinafter IMO] for navigation in the Arctic ice-covered waters include provisions on resistance to ice loads, use of suitable materials, and prevention of accelerated structural degradation.²⁷⁵
- b) Ship-powering:²⁷⁶ The use of heavy fuel oil [hereinafter HFO]²⁷⁷ has become popular among large vessels because of its relatively low cost. However, its special properties make it a comparatively slow-degrading product which, once released into the ocean, is likely to reach the beach and stay there for a long time.²⁷⁸ According to recent experiences, the removal of oil from coastal zones poses a complex task that comes at a very high cost.²⁷⁹
- c) Ship-manning: Vessels often sail around polar areas without qualified crew for navigation of ice-covered waters, and it is uncertain whether emergency environmental plans have been developed to face a disaster.²⁸⁰ One must not forget that given the high degree of isolation, self sufficiency becomes a critical skill should anything go wrong while within the Antarctic Treaty Area. In accordance the IMO guidelines for Arctic Navigation,²⁸¹ ships ought to have an ice navigator²⁸² on board to direct the maneuvers,²⁸³ while the crew should be properly trained in such matters as

²⁷³ See IAATO, *supra* note 183, at 15.

²⁷⁴ United Kingdom, *supra* note 158, at 13.

²⁷⁵ International Maritime Organization [hereinafter IMO], *Guidelines for Ships operating in Arctic Ice-Covered Waters* [hereinafter IMO Guidelines], Doc. IMO/MSC/Circ.1056-MEPC/Circ.399, Part A, Chapter 2 (Dec. 23, 2002), available at http://www.imo.org/includes/blastDataOnly.asp/data_id%3D6629/1056-MEPC-Circ399.pdf (last visited June 4, 2006).

²⁷⁶ For a detailed discussion of the subject, see COMNAP & IAATO, *The Use of Heavy Fuel Oil in Antarctic Waters*, 28th ATCM Doc. XXVIII ATCM/IP 67 (2005), available at http://www.ats.aq/Atcm/atcm28/ip/atcm28_ip067_e.doc (last visited June 4, 2006).

²⁷⁷ See MARPOL 73/78, *supra* note 67 (Through 2007 amendments, it defines heavy grade oil as fuel oils having either a density at 15°C higher than 900 kg/m³ or a kinematic viscosity at 50°C higher than 180 mm²/s.)

²⁷⁸ See, Norway, *Proposal to submit a proposal to IMO to ban the presence of Heavy Fuel Oil (HFO) on board ships south of 60° South*, 28th ATCM Doc. XXVIII ATCM/WP 41, at 1 (2005), available at http://www.ats.aq/Atcm/atcm28/wp/atcm28_wp041_e.doc (last visited June 4, 2006).

²⁷⁹ *Id.*

²⁸⁰ Italy, *supra* note 272, at 2.

²⁸¹ IMO Guidelines, *supra* note 275.

²⁸² *Id.* G-3.10.

²⁸³ *Id.* 14.1.2 and 14.2.

ship operation in ice covered waters,²⁸⁴ cold weather survival,²⁸⁵ use of firearms,²⁸⁶ and operation of low frequency radio.²⁸⁷

- d) Ship-routing: The lack of charts,²⁸⁸ and the ensuing need for improving the INT cartographic scheme for Antarctic waters through the publication of new charts, has been long recognized as a concern by the Antarctic Treaty System.²⁸⁹ The problem derives, on one side, from the high cost of conducting hydrographic survey programs and producing charts and,²⁹⁰ on the other, from the fact that this task is undertaken by national agencies individually. As a result, countries produce charts when it serves their own interest (i.e. to operate research stations) rather than global objectives. This lack of international mapping endeavors leads to duplication of efforts, uneven technical standards, diverse nomenclature, and other flaws that ultimately render the whole system inefficient.²⁹¹

IAATO has attempted to prevent accidents by keeping ships able to hold over 500 passengers upwards from making on-shore visits, as well as by establishing restrictions for vessels bearing over 200 passengers. Apart from this *binding*²⁹² provision, best practices have been put forward to encourage ships to exchange information on their itineraries, and to avoid making landings at a place at one time.²⁹³ Regrettably, those regulations suffer from enforcement limitations.²⁹⁴ In fact, during the 2003-2004

²⁸⁴ *Id.* 14.1.4.

²⁸⁵ *Id.* 14.1.3.

²⁸⁶ *Id.* 14.3.1.

²⁸⁷ *Id.* 14.3.2.

²⁸⁸ ASOC, *supra* note 157, at 2.

²⁸⁹ IAATO, *supra* note 183, at 16.

²⁹⁰ See International Hydrographic Organization [hereinafter IHO], *Status of Hydrography and Nautical Cartography in Antarctic and Proposals for its Improvement*, 28th ATCM Doc. XXVIII ATCM/IP 76, at 3 (2003), available at [http://www.aeci.es/26atcmadrid/docs/26IP076E%20\(IHO%20ATCM%205\).doc](http://www.aeci.es/26atcmadrid/docs/26IP076E%20(IHO%20ATCM%205).doc) (last visited June 04, 2006).

²⁹¹ *See id.*

²⁹² The word “binding” in this context does not refer to the compliance with regulations demanded by the public authority, but to the mandatory character of private relationships such as that existing between an association and its members. *See* IAATO by-laws, at <http://www.iaato.org/bylaws.html> (last visited June 25, 2006) (Art. III section H prescribes reprimand, change of status or expulsion for members that fail to comply with bylaws).

²⁹³ IAATO, *supra* note 183, at 10-11.

²⁹⁴ *See* United Kingdom, *supra* note 158, at 6; *see also* IAATO, *supra* note 183, at 10.

season two non-affiliated ships are known to have conducted passenger-landings disregarding the cut-off number, and to have failed to consistently communicate with the other vessels in the area.²⁹⁵

B. ISSUES RELATED TO SCIENCE

This chapter looks into the question of how tourism impacts scientific work, the circumstances that link tourism to science, and the most significant discords that crop up between the two undertakings. In this regard, COMNAP has highlighted that “in the collective view of national operators, ship-borne tourism does not create particular problems for science *programmes* or the operation of national Antarctic stations”.²⁹⁶ (emphasis added) In contrast, scientific communities have often deviated from the official position of their supporting countries to complain about tourism, in some cases characterizing it as “intolerable”.²⁹⁷ However, a closer look at this issue leads to the conclusion that by and large unease arises from practical matters like inadequate coordination rather than substantial or inherent incompatibility.

1. Regular Tourism

An enduring complaint reveals that even in small numbers and for short stays, visitors tend to concentrate on a few stations, thus resulting in disturbance to scientific research. It is quite possible that numerous and possibly uninstructed visitors strolling around will significantly disrupt the base’s daily routine,²⁹⁸ perhaps trample on study sites and spoil experiments.²⁹⁹ In any case, a handy tool for gauging the actual impacts of tourism on science is provided by COMNAP assessment of the degree of interaction between the National Antarctic Programs [hereinafter NAPs] and non-governmental operators, through annual surveys conducted since the summer 1998-1999.³⁰⁰ Some conclusions and supporting data are presented as follows:

²⁹⁵ IAATO, *supra* note 183, at 11.

²⁹⁶ See United Kingdom, *supra* note 158, at 6.

²⁹⁷ Francioni, *supra* note 8, at 8-9.

²⁹⁸ See United Kingdom, *supra* note 158, at 7.

²⁹⁹ BAUER, *supra* note 120, at 124.

³⁰⁰ See COMNAP, *The Interaction between National Operators, Tourists and Tourism Operators*, 25th ATCM Doc. XXV ATCM/IP 27 (2002); see also COMNAP, *The Interaction between National Operators, Tourists and Tourism Operators*, 26th ATCM Doc. XXVI ATCM/IP 37 (2003); see also COMNAP *Information Paper on the Interaction between National Antarctic*

- a) There is a strong interaction between private activities and science as 76% (16 out of 21) of NAPs allow visitors to their scientific stations. The way each nation addresses the issue is highly dissimilar, however.³⁰¹ One fourth of them impose no restrictions or limitations on visits, while the remaining states encompass a wide host of uneven measures, including quantitative limitations, spatial restrictions, and procedural or performance standards, among others.³⁰²
- b) Governments actively support tourist operations since 41% (9 out of 22) of respondents have provided some kind of aid to non-governmental activities, including travel to, from, or within Antarctica by ship or aircraft, accommodations for visitors and fuel storage.³⁰³ Furthermore, 29% (6 out of 21) stations have become involved in emergency response action offering tourist and Non Governmental Organizations [hereinafter NGOs] medical care, ship and air support, and mechanical assistance.³⁰⁴
- c) Private activities actively support NAPs as 43% (9 out of 21) have benefited from either NGOs or tourist operations which provided travel to, from, or within Antarctica by ship, aircraft or other vehicles and accommodations for personnel. Notably, over 70% of NAPs that benefited from NGO or tourist operators by being reimbursed the expenses at fair market value.³⁰⁵

2. Extreme Tourism

Despite its widespread use by the industry, the term “adventure tourism” appears quite imprecise, since within the Antarctic context, any tourism is; in some sense, adventurous. Hence, the expression “extreme tourism” is preferred among specialists. However one labels it, the notion refers to activities carried out within Antarctica that are usually small-sized, whose focal motivation responds to the desire

Programs and Non-Government and Tourism Operations, ATME Doc. ATME/Paper 25 (2004); and *see also* COMNAP, *Interaction between National Antarctic Programs and Non-Government and Tourism Operations*, 27th ATCM Doc. XXVII ATCM/IP 14 (2004).

³⁰¹ COMNAP, *Information Paper on the Interaction between National Antarctic Programs and Non-Government and Tourism Operations*, 27th ATCM XXVII ATCM/IP 14, at 3-4 (2004), available at <http://www.ats.aq/27atcm/e/login/IP/27IP014E.DOC> (last modified Feb. 19, 2004) (Survey applied to all 29 COMNAP members, 23 of whom responded).

³⁰² *Id.*

³⁰³ *Id.* at 6-7.

³⁰⁴ *Id.* at 4.

³⁰⁵ *Id.* at 8-9.

for achieving risky, challenging, or landmark experiences, and which are not supported in the field by a national operator or a recognized tourism provider.³⁰⁶

As these undertakings often are not self-sufficient, they present a serious possibility that scientific stations will get involved in any misadventure from the expedition. Negative consequences range from significant disruption of scientific programs, to the imposition of huge costs on already modest budgets (which are unlikely to be recovered or otherwise compensated). In some cases, extreme tourism may even expose staff to unforeseen dangers.³⁰⁷ In this regard, Chile has pointed out that over the last years SAR operations have become more frequent due to the steady growth of tourism, including so-called adventure tourism.³⁰⁸ Chile cites as example an accident involving two Australian mountain hikers in January 2001, which resulted in search, rescue and medical attention by the *Presidente Frei* Air Force Base at a cost of nearly 20,000 dollars.³⁰⁹ Further examples of inadequately prepared expeditions, authorized by governments, which have caused problems and could have resulted in potential life-threatening situations include the Poly Vacher's,³¹⁰ Jon Johanson's³¹¹ and Gus McLeod's expeditions,³¹² the helicopter incident in the Drake passage (2003),³¹³ and the Norwegian skiers and kayakers in 2002-2003.³¹⁴ Despite the potential risks freestanding adventures embody, fair description requires mentioning that a good number of activities are conducted by dependable operators, which provide full back-up and help in case of emergency, and which have several times come to the aid of troubled scientific stations.³¹⁵

³⁰⁶ United Kingdom, *The Regulation of Adventure Tourism*, ATME Doc. ATME/Paper 8, at 3 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

³⁰⁷ See United Kingdom *supra* note 158, at 10.

³⁰⁸ See Chile, *Efectos Economicos en las Operaciones de Rescate [Economic Effects of Rescue Operations]*, 26th ATCM Doc. XXVI ATCM/IP 30, at 1 (2003), available at [http://www.aeci.es/26atcmadrid/docs/26IP030S%20\(CL%20ATCM%2013\).doc](http://www.aeci.es/26atcmadrid/docs/26IP030S%20(CL%20ATCM%2013).doc) (last visited June 05, 2006).

³⁰⁹ See *id.* at 7-8.

³¹⁰ See IAATO, *supra* note 183, at 24.

³¹¹ *Id.*

³¹² *Id.*

³¹³ IAATO, *supra* note 183, at 7-8.

³¹⁴ *Id.*

³¹⁵ See IAATO, *supra* note 183, at 12.

C. POLITICAL ISSUES

1. Role of the Antarctic Treaty System

Throughout the nineties, the debate on tourism concentrated on whether it had achieved enough size to be brought under regulation or not. As one accomplished scholar articulated, a legitimate question had arisen as to whether tourism had “impacted on identifiable regime interests and thus [had been] able to provoke a regime response”.³¹⁶ Such a debate now seems to be over as general opinion regards the industry to be in need of regulation. Now the question is how extensive a role the ATS ought to be charged with playing. Alternatives are to take a proactive approach in the hope of minimizing the impacts tourism may cause, or to refrain from regulating tourism and pass the task on to private industry for self-regulation, or finally to opt for something in between.

From a private corporation standpoint, their greatest pluses are their organization through IAATO, their expertise in Antarctic issues, and their ability to react promptly to new matters.³¹⁷ In fact, the association has led private operators’ activities for almost fifteen years, a period in which it has developed a number of guidelines and by-laws³¹⁸ intended to ameliorate immediate human environmental impact.³¹⁹ Additionally, IAATO regularly attends ATCMs under the status of expert, and it also works in partnership with the National Science Foundation [hereinafter NSF] to provide extensive statistical information as well as a number of operational procedures regarding advance notifications and post-visit reports. The contrast between IAATO’s agility and ATS’ bureaucracy is highlighted by the fact that as soon as the former came into existence in 1991, it enacted the *Visitor Guidelines*, which served as model

³¹⁶ Herr, *supra* note 168, at 207.

³¹⁷ United Kingdom, *Tourism and Self-Regulation: A commentary on IAATO*, ATME Doc. ATME/Paper 4, at 3 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004). The author points out that the association has certainly anticipated the ATS in regulating such emerging activities as scuba diving or helicopter expeditions.

³¹⁸ See IAATO, www.iaato.org (last visited June 8, 2006). Some guidelines are “*Marin Wildlife Watching Guidelines*,” “*Helicopter Operation guidelines*,” “*Zodiac or RIB Operation Guidelines*,” “*Underwater Remotely Operated Vehicle Guidelines*,” “*Specialized Adventure Activities*,” (developed by companies offering those services) “*Argo Amphibious Vehicle Operations*,” “*Boot And Clothing Decontamination Procedures*,” “*IAATO Guidelines On Prevention Of The Translocation Of Alien Species*,” “*Site Selection Criteria Guidelines*,” “*Site-Specific Guidelines*,” “*Pre-Season Checklist*,” “*Annual Instructions*,” “*Emergency Medical Evacuation Response-EMER*,” “*Emergency Contingency Plan*,” and “*Ship Scheduling And Exchange Of Itinerary Information*.”

³¹⁹ IAATO, *supra* note 183, at 4.

for Recommendation XVIII-1³²⁰ adopted three years later at the 18th ATCM held in Kyoto. Another advantage is the association's far-reaching scope of binding authority³²¹ as it includes nearly 70 tourist companies (certainly the largest ones) which altogether carry around the 94% of visitors to the ice continent. Moreover, IAATO's guidelines are much more specific than recommendations. For instance, while Recommendation XVIII-1 asks visitors not to approach wildlife "in a way that may cause behavioral alteration",³²² IAATO guidelines set down specific distances to be kept between visitors and wildlife (i.e. 15 feet from nesting birds and crawling seals, 15 - 30 feet from seals, etc.³²³). All this makes IAATO a pragmatic means of regulating tourism, absent a sovereign-based jurisdictional scheme.³²⁴

On the other side, a number of weak points render this soft-law scheme far from the ideal. In the first place, IAATO's effectiveness has been rightly called into question on grounds that the high degree of compliance it shows is more likely to have resulted from Member's power to influence IAATO's law-making process than from actual influence on Members' behavior. This assertion finds support in the history of the association because, while Antarctic tourism was offered as a luxury product, regulations authorizing the operation of vessels no larger than 400 passenger capacity remained unchallenged; but as soon as tourist companies started targeting the mass market, they pushed for the rule to be amended in order to allow larger ships to participate. Facing the risk of losing leadership, in 2001 IAATO amended its by-law to incorporate a new membership scheme comprising seven categories of members and vessels of all sizes.³²⁵ All the same, some have seen this change as a realistic maneuver to retain control over the new trends and ultimately over the largest ships of the industry; whereas others have denounced it as weakening IAATO's potential to effectively govern tourism in Antarctica. Secondly, it has been observed that companies that own large vessels oppose both passenger-based fees and the ban on landings

³²⁰ Rec. XVIII-1, *supra* note 76.

³²¹ *See supra* note 265.

³²² Rec. XVIII-1, *supra* note 76, Part (A)(2).

³²³ IAATO, *Marine Wildlife Watching Guidelines for Vessels & Zodiac Operations*, http://www.iaato.org/docs/wildlife_guide_03.pdf (last visited June 10, 2006).

³²⁴ United Kingdom, *supra* note 317, at 1.

³²⁵ IAATO, <http://www.iaato.org/bylaws.html> (last visited June 10, 2006).

ashore. Such disagreement is leading them, increasingly, to opt for off-association operations, which gives rise to more expeditions outside of any regulating framework.³²⁶ Should this trend continue, IAATO's role would be called into question, particularly its status as regulator and representative of the tourism industry.³²⁷

From the ATS point-of-view, a crucial issue is the impact that self-regulation would have on ATS' international image. To put it bluntly, anybody might ask: What does this international body work on when the most popular activity in the Antarctic rests entirely in the hands of private organizations?³²⁸ In this vein, New Zealand has warned that “[f]ailure to take the necessary action may well in the not too distant future generate doubts about the capability of the ATS to manage appropriately all activities in Antarctica and hence raise doubts about its long-term effectiveness and legitimacy”.³²⁹ The fact of the matter is that ATS cannot manage tourism directly as it lacks the knowledge and experience that IAATO has gathered after years of operation. However, one must not forget that this is a commercial association, formed by companies, affected by their tensions and permanently under their influence. No wonder that at the end of the day IAATO speaks for private interests, which are not always the interests of the Antarctic Treaty System or the international community.

2. The Question of Sovereignty

During the thirties and early forties, seven countries asserted sovereign rights to Antarctic territory.³³⁰ These claims, which generally speaking are not recognized by the international community, could have sparked off a major international incident, even an armed conflict.³³¹ In the late fifties, the countries involved in Antarctic matters,³³² determined to forestall imminent international discord,³³³

³²⁶ United Kingdom, *supra* note 317, at 6.

³²⁷ *Id.*

³²⁸ New Zealand, *supra* note 178, at 2.

³²⁹ *See id.* at 6.

³³⁰ *See* Van der Essen, *supra* note 15, at 18-25.

³³¹ *See* Beeby, *supra* note 16, at 4-7.

³³² The negotiating countries were Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, United Kingdom, South Africa, The Soviet Union and The United States. *See* Van der Essen, *supra* note 15, at 18-25.

³³³ *See id.* at 18-9.

negotiated the Antarctic Treaty,³³⁴ article IV(1) of which sets out a novel mechanism to put these claims on hold. It states:

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 right 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.³³⁵

The ATS comprises delicate mechanisms to maintain peaceful relationships among the parties. Indeed, underlying the efforts to avoid potentially negative environmental impacts, loss of human lives or disturbance to scientific research, there is a duty to ensure that tourism is conducted in a way that is in line with the balance achieved through the Treaty. Even though the ATS has plainly succeeded in keeping conflict from arising,³³⁶ the forum has long been divided among claimant and non-claimant states, which has created a problem regarding the actual application that parties have made of article IV in discussing proposals to regulate tourism. Although this provision is intended to let parties take action with respect to Antarctic matters, countries have often been paralyzed with fear due to the possibility of undesired effects on the question of sovereignty. In a way, the actual practice of ATS Members has turned an action-allowing rule into an action-restraining rule.

A specific aspect of the problem of sovereignty has to do with the issue of private property. In order to avoid tensions between claimant and non-claimant countries, neither the Treaty nor the Protocol addressed the issue, while consensus on this point has meant that property rights on the continent may extend only to national program facilities. The arrival of private enterprises has changed the scheme because investors demand a certain level of legal protection, such as a property title affords, from the

³³⁴ Antarctic Treaty, *supra* note 11.

³³⁵ *Id.* art. IV.

³³⁶ Lee, *supra* note 21, at 75.

receiving authorities. The question then arises as to how any state can grant a title when the state itself does not own land. Furthermore, does the ATS even allow any property regime?

3. The Question of Jurisdiction

As long as tourism was virtually insignificant in 1959, the Treaty approached the jurisdictional theme by offering a solution for the bulk of people intended to stay in the Antarctic area, the scientists. As its first phrase indicates, article VIII built on the inspiration of putting conflictive scenarios aside to let scientists work. Hence, the first paragraph laid down the principle of exclusive nationality jurisdiction with regard to observers, scientists, and their staff. Otherwise, jurisdictional issues would fall into the second paragraph which calls on parties to reach an agreement to settle the dispute. The entire provision reads as follows:

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 subparagraph 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 subparagraph 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.³³⁷

Due to its expansion and diversification, tourism and non-governmental activities are now more likely to challenge the equilibrium achieved in Antarctica without sovereignty rights.³³⁸ In fact, the prospect of increasing the number of seasonal visitors in addition to permanent staff at hotels and airfields immediately leads to the possibility of conflicts over jurisdiction.³³⁹ Moreover, national legislation differs from one country to another in terms of the bases for asserting jurisdiction, and questions arise over the capability of self-regulation to help fill existing jurisdictional gaps. Indeed, while most visitors patronize

³³⁷ Antarctic Treaty, *supra* note 11, art VIII.

³³⁸ Non governmental activities embraces a whole set of undertakings such as off-duty national program personnel, fishing crew when not fishing, individual yacht or aircrafts owners, environmental NGO expeditions, commercial filming, private bio-prospecting expeditions, among others. *See* ASOC, *supra* note 157, at 2.

³³⁹ New Zealand has expressed deep concern on the jurisdictional and environmental risks of tourism and has developed its *Policy Statement on Tourism and other Non-Governmental Activities* opposing any expansion of permanent and semi permanent land-based tourism in Antarctica, especially in the Ross Dependency. *See* New Zealand, *supra* note 178 at 6-7.

IAATO-members, half the vessels operating within the Antarctic Treaty area are flagged with non-party countries such as Liberia, Panama or the Bahamas.³⁴⁰

The word jurisdiction is often circumscribed to the study of those cases in which a court may exert its power to resolve a dispute, that is, the study of the basis of jurisdiction under international law.³⁴¹ This notion, though right, is not only what this study refers to. The present discussion has been organized along a broader concept that encompasses three different types of jurisdiction: prescriptive, enforcement, and adjudicative.³⁴²

a. Prescriptive Jurisdiction

Prescriptive jurisdiction is defined as “the power to establish a general rule of law”;³⁴³ that is the capability of states to subject a determinate behavior to its own regulatory system. Therefore, the question arising out of this theme is who enacts the norms and for whom. Applied to Antarctica, this concept refers to the identification of existing rules and their possible interaction. Four categories result from the combination of territoriality and binding character. First, international binding regulations: Embodied primarily by the Antarctic Treaty System, the associated instruments, and the recommendations adopted inside consultative meetings.³⁴⁴ Other international entities may also adopt binding rules having an effect on Antarctic tourism, notably conventions adopted under the auspices of IMO.³⁴⁵ The upside of these norms is their mandatory character; the downside is they are applicable only among parties of the respective convention unless such rules are held as international customary law. Second, international soft law, which encompasses IAATO guidelines, resolutions and decisions adopted within the Antarctic Treaty

³⁴⁰ United Kingdom, *supra* note 158, at 6.

³⁴¹ JORDAN. J. PAUST, INTERNATIONAL LAW AS LAW OF THE UNITED STATES, 387 (Carolina Academic Press Publishers, 1996)

³⁴² OSCAR SCHACHTER, INTERNATIONAL LAW IN THEORY AND PRACTICE, 253-7 (Martinus Nijhoff Publishers, 1991).

³⁴³ DANIEL BODANSKY, THE CONSENSUAL VIEW OF INTERNATIONAL LAW, IN INTERNATIONAL LEGAL PROCESS (Supplemental Readings and Documents) 5, 8 (2004) available at http://www.law.uga.edu/~bodansky/courses/International_Law/class04.html (last visited May 10, 2005).

³⁴⁴ *Measures, Decisions and Resolutions*, *supra* note 75.

³⁴⁵ See IMO, <http://www.imo.org/home.asp> (last visited June 11, 2006).

System, as well as guidelines and codes of conduct issued by IMO.³⁴⁶ These norms, albeit voluntary, present helpful features as they reach the largest part of tourist expeditions and some enjoy great levels of precision. Third, national binding regulations, legislation ATS parties have enacted in fulfillment of their international obligations under the Treaty and associated conventions. The chief problem here is lacking adequate regulation on Antarctic tourism. As revealed by the COMNAP's survey, two Member states have no procedures to authorize non-governmental activities in Antarctica, and 67% of countries having such procedures had no responsibility for undertaking compliance checks.³⁴⁷ Finally, even though soft law is by and large international, domestic non-binding regulations have been developed by several countries. For instance, the British Antarctic Survey has adopted guidelines concerning its stations while the United States, Poland, and Argentine have likewise developed codes for tourists visiting stations at Palmer, McMurdo, the South Pole, Arctowsky and Esperanza.

Table 6: Regulatory scheme

	Binding	Soft-law
International	Antarctic Treaty, Environmental Protocol, ATS recommendations, SOLAS, MARPOL 73/78, etc.	IAATO guidelines, ATS resolutions and decisions, IMO codes and recommendations, etc.
National	U.S. Antarctic Protection Act, British Antarctic Act, Australian Antarctic Treaty Act, etc.	- Guidelines for scientific stations?

A key step in assessing the effectiveness of this jurisdictional regime is the identification of gaps. To that end, available data collected by the National Science Foundation over the last seasons enable

³⁴⁶ *Id.*

³⁴⁷ COMNAP, *Information Paper on the Interaction between National Antarctic Programs and Non-Government and Tourism Operations*, ATME Doc. ATME/Paper 25, at 4 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004)

appreciation of breaches from three diverse perspectives, namely nationality-centered, soft law-centered, and flag-centered.

From a perspective of nationality, table 7 shows the composition of tourism arranged by nationality. It lays out the total number of tourists, including sea-borne, air-borne and land-based expeditions and works out the ratio of national of treaty parties versus nationals of non treaty parties expressed in both raw numbers and percentage.

Table 7 : Tourist composition by nationality³⁴⁸

	2000/01		2001/2002		2002/03		2003/04		2004/05	
	#	%	#	%	#	%	#	%	#	%
Parties	11733	95.8	10999	94.9	12839	94.6	18899	95.5	27250	97.5
Non-parties	246	2.0	284	2.5	267	2.0	291	1.5	694	2.5
Unknown	269	2.2	305	2.6	465	3.4	588	3.0	6	0.0
Total	12248	100	11588	100	13571	100	19778	100	27950	100

From a soft law perspective, table 8 sums up the tourists who have traveled through IAATO-Member companies versus those having patronized non-IAATO Member companies. Notice that in this case, Antarctic over-flights are not comprised as data from non-IAATO expeditions were incomplete.

Table 8: Tourist by IAATO member-vessel³⁴⁹

	2000/01		2001/2002		2002/03		2003/04		2004/05	
	#	%	#	%	#	%	#	%	#	%
Member	9240	75.4	10582	77.7	13196	82.5	20665	83.2	22321	79.1
Non-member	3008	24.6	3035	22.3	2799	17.5	4180	16.8	5881	20.9
Total	12248	100	13617	100	15995	100	24845	100	28202	100

³⁴⁸ See IAATO, http://www.iaato.org/tourism_stats.html (last visited June 20, 2006).

³⁴⁹ *Id.*

Lastly, from a flag state perspective table 9 breaks down the number of tourists into those having sailed aboard a treaty-flagged vessel, those having done it aboard a non-treaty-flagged vessel, and those whose registration was unknown (mostly sailing vessels which are not-IAATO Members).

Table 9: Tourist composition by vessel flag.³⁵⁰

	2000/01		2001/2002		2002/03		2003/04		2004/05	
	#	%	#	%	#	%	#	%	#	%
Parties	3987	33.2	5529	41.5	8381	52.8	11907	64.1	11804	42.5
Non-parties	7054	58.8	7787	58.5	7329	46.2	6475	34.9	15957	57.5
Unknown	956	8.0	0	0	157	1.0	185	1.0	0	0
Total	11997	100	13316	100	15867	100	18567	100	27761	100

Pursuant to this data, nationality appears as the strongest basis for jurisdiction. During the five seasons under analysis, the rate of nationals of ATS countries remained over ninety percent (see highlighted numbers in table 7) which means that just about every tourist in Antarctica was a national of a Treaty party. Soft law comes off as the intermediate factor with an IAATO-member ratio ranging from 75.4 through 83.2% which reveals that despite the existence of a gap, IAATO regulations still bind on the bulk of tourists. Finally, flag-state jurisdiction turns out to be the weakest factor whose rate more often than not goes below 50%.

It is important to bear in mind that this prescription-focused analysis only measures the binding scope of a specific base for jurisdiction, which makes up one but not the only driver of the overall effectiveness of the jurisdictional scheme. Thus, while according to this data nationality is the strongest factor, it may be very weak from an enforcement standpoint if those countries the majority of tourists come from have failed to implement or enforce the corresponding rules.

³⁵⁰ *Id.*

b. Enforcement jurisdiction

Enforcement jurisdiction is “the authority of a state to use the resources of government to induce or compel compliance with its law”;³⁵¹ it has to do with how a state goes about getting actors to conform their behavior to the norm. Regrettably, statistic data concerning enforcement actions are hard to find so quantitative estimation as to which factor is stronger and which is weaker becomes virtually impossible. Indeed, neither the Antarctic Treaty Secretariat nor IAATO, nor ASOC or any of the national programs websites provide statistics about enforcement in order for the researcher to measure the effort that parties are undertaking. Nevertheless, some objective facts are laid out in order to evaluate this matter.

First, visitors to Antarctica have witnessed rampant violations of guidelines and codes of conduct by tourist without operators’ staff attempting to bring the behavior into compliance. Consider the following testimony: “I was watching gentoo penguins from a distance – it was magical. But then a teenage boy lumbered after them with his camcorder. You could see the birds were anxious but the guides didn’t seem bothered...”³⁵² Second, the rule-making procedure inside the Antarctic treaty system requires double unanimity for any recommendation, which is tantamount to say that all parties have veto power over measures, and therefore it is considerably more difficult for them to achieve binding character. Perhaps an example of this is embodied by Recommendation XVIII-1,³⁵³ which in spite of its wide support and application has not yet become effective. Third, as long as Antarctica makes up a common administered land, each country’s interest in enforcing rules is less than the interest in protecting its own sovereign territories. Indeed, the concurrence of international elements is likely to bring about tensions that countries, at least initially, would rather avoid. Fourth, some provisions of the Antarctic Treaty, the Protocol, as well as ATS recommendations have been drafted using such a hortatory wording that compliance is solely up to the parties’ will. Some of the frequently used clauses are “as far as

³⁵¹ LORI FISLER DAMROSH ET AL., INTERNATIONAL LAW: CASES AND MATERIALS 1088 (4th ed. 2001).

³⁵² ASOC, *Tourism threatens Antarctica*, at http://www.asoc.org/Documents/Tourism%20Threatens%20Antarctic_021106-Telegraph.doc (last visited June 8, 2006).

³⁵³ Rec. XVIII-1, *supra* note 76.

practicable,”³⁵⁴ “to the maximum extent practicable and others.”³⁵⁵ Fifth, the enforcement of some obligations, i.e. the prohibition of garbage disposal within the Antarctic Treaty area, demands on-the-spot surveillance, which turns out to be exceedingly expensive. Lastly, even when this is conceptually a matter of prescriptive jurisdiction, the existence of convenience flags echoes in the enforcement aspect of rules because Treaty norms generally cannot be enforced against those states which are not part of the respective convention. Moreover, convenience states typically have no capacity whatsoever to carry out inspection on the vessels registered in their own territory and, even if they had, those vessels seldom come back to the ports of the flag so the inspection turns virtually impossible.

c. Adjudicative jurisdiction

The Antarctic Treaty lays down the foundations of a four-factored jurisdictional scheme, which allows countries to sit in judgment of expeditions provided that: 1) The ships are flying that particular state’s flag; 2) Its nationals participate in the expedition; 3) The expedition was organized in that particular state’s territory; and 4) The expedition made its departure from that particular state’s port.³⁵⁶

One of the important difficulties in implementing this provision is the uneven interpretation countries have made of it in enacting domestic legislation. For instance, the United Kingdom only asserts jurisdiction over “British expeditions”³⁵⁷ which are defined as those that either have been organized or have last departed to Antarctica from British territory, and which do not have written authorization from another Treaty party. New Zealand relies on a similar scheme as it considers under national jurisdiction all expeditions that either have been organized within its territory or have made their final departure to

³⁵⁴ Annex III, *supra* note 64, art. 1(1).

³⁵⁵ *Id.* art. 1(4).

³⁵⁶ Antarctic Treaty, *supra* note 11, art.VII (5)(b).

³⁵⁷ Antarctic Act 1994 Chapter 15, UK St 1994 c 15 Pt II § 3, “Permits required for British expeditions to Antarctica. (1) No person who is on a British expedition may enter or remain in Antarctica except in accordance with a permit granted under this section. (2) Subsection (1) does not apply: (a) to a person traveling through, on or above the high seas to an immediate destination outside Antarctica, or (b) to a person entering or remaining in Antarctica for the sole purpose of fishing for profit. (3) Subject to subsection (4), for the purposes of this section an expedition is a British expedition if: (a) it was organized in the United Kingdom, or (b) the place of final departure for Antarctica of the persons on the expedition was in the United Kingdom. (4) An expedition organized in and authorized in writing by another Contracting Party shall not be regarded as a British expedition.”

Antarctica from a New Zealand port or airport.³⁵⁸ Quite differently, the United States asserts jurisdiction over vessels under the concepts of "vessel of the United States",³⁵⁹ which encompasses ships registered in the United States or owned totally or partially by U.S. entities, and vessels "subject to the jurisdiction of the United States",³⁶⁰ which refers to anomalous situations such as ships without nationality. So, despite the fact that the Antarctic Treaty provides for jurisdiction over nationals, an expedition entirely formed of British people would not be brought before the United Kingdom's courts because it was organized in and obtained written permission from Chile, or because after departing from Port Lockroy in the Falkland Islands, the ship docked at Ushuaia, Argentina for fuel and continued its trip to Antarctica. Likewise, the U.S. courts may consider themselves lacking jurisdiction over an expedition organized in the United States, which departed from that country but took place aboard a non-U.S. flagged vessel.

4. Limiting Factors for Activities in Antarctica

The three major values enshrined in the ATS -peace, environment, and science- work out as unambiguous limiting factors for activities in Antarctica. Thus, by virtue of the Treaty's Article 1, belligerent operations are expressly excluded.³⁶¹ In turn, Article 8 of the Protocol requires expeditions to undertake prior environmental assessment; and article 3(3) accords priority to scientific research, and even requires that activities be suspended or cancelled if they result or threaten to result in adverse effects over the environment.³⁶² The question arising out of this scheme is whether any undertaking may be carried out as long as it is consistent with those values or if, quite to the contrary, some initiatives should be deemed implicitly banned whatever their impact on peace, science and the environment. For instance, would it be possible to organize a rock concert in Antarctica? Similarly, it has been mentioned that after

³⁵⁸ See Antarctica (Environmental Protection) Act 1994, title 1, part 1, number 2: "Except as otherwise provided in this Act, this Act shall apply: (c) To any person who is for the time being a member of, or responsible for organizing, any expedition to Antarctica which is organized in New Zealand or which proceeds from New Zealand as its final point of departure for Antarctica, available at http://www.legislation.govt.nz/browse_vw.asp?content-set=pal_statutes (visited July 17, 2005).

³⁵⁹ 16 U.S.C.A. § 2402 "Definitions ... For purposes of this chapter ... (23) the term "vessel subject to the jurisdiction of the United States" includes any "vessel of the United States" and any "vessel subject to the jurisdiction of the United States" as those terms are defined in [section 2432](#) of this title."

³⁶⁰ *Id.*

³⁶¹ Antarctic Treaty, *supra* note 1, art. I.

³⁶² See PEPAT, *supra* note 12, art. 8(2)(c), art. 8(3), art. 8(4)(b).

the golf tournament organized in Greenland, another one might take place in Antarctica.³⁶³ Would that be a permissible plan? Yet further, should private operators be allowed to build a casino for tourists? So far, most actors involved in Antarctic tourism would say no.³⁶⁴ Notice that this analysis entails an assumption that facilities are *prima facie* legally consistent as well as environmentally viable, so it focuses on what types of activities should be allowed or excluded, and which zones might be designated as appropriate for construction in order to preserve the wilderness, the pristine condition and the other intrinsic values of the Antarctic.

A second question stems from the interpretation of the concept of “intrinsic values”³⁶⁵ that constitutes part of the Protocol’s environmental principles, particularly the aesthetic and wilderness values of Antarctica. At a first glance, these concepts would surely help in outlawing activities such as rock concerts and golf tournaments, and facilities such as casinos; as these normally would result in negative impacts on the pristine condition of Antarctica or the magnificent landscapes it offers to visitors. It is quite persuasive that any untouched place can hardly retain its pureness after a rock concert, and that any landscape may no longer said to be wild after being decorated with a shiny casino. Nevertheless, a closer look at the pertinent norms may lead to an entirely different conclusion. Even though from the heading of Article 3 both qualities are regarded as “fundamental considerations in the planning and conduct of all activities in the Antarctic treaty area,”³⁶⁶ thus creating the impression of general values inherent to Antarctica as a whole, a few lines below the same provision refers to “degradation of, or substantial risk to, areas of biological, scientific, historic, aesthetic or wilderness significance...,” suggesting that not all parts of Antarctica have such significance. Instead, according to this provision, protection would be afforded only to some specific areas that possess those values.³⁶⁷ The same

³⁶³ See Bastmeijer & Roura, *Regulating Antarctic Tourism*, *supra* note 155, at 766; see also <http://www.greenland-guide.gl/icegolf/> (last visited July 22, 2004).

³⁶⁴ See Mercopress, *Hotels and casinos in Antarctica?* (Dec. 15, 2004), at <http://www.asoc.org/Press/Tourism/2004/12.16.04.Mercopress.tourism.htm> (last visited May 12, 2005).

³⁶⁵ PEPAT, *supra* note 12, art. 3(1).

³⁶⁶ *Id.*

³⁶⁷ *Id.* art. 8(2)(vi).

restrictive concept is further developed in Annex V,³⁶⁸ where aesthetic and wilderness are legal arguments for a zone to be designated as a Specialty Protected Area [hereinafter SPA], which precludes any person from entrance, unless a permit has been previously issued.³⁶⁹ As a result, any place outside the SPA constitutes a potential stage for one of those previously mentioned activities and, arguably, application for authorization could not be turned down on the grounds of representing “degradation to, or substantial risk to, areas of... ..aesthetic or wilderness significance.”³⁷⁰

One possible approach to resolve the tension between these two concepts may arise from the idea of *natural reserve*, since Antarctica was designated as such by Article 2 of the Protocol.³⁷¹ This status, put forward by New Zealand as early as 1975, is linked to its origins in protection of the “aesthetic value of the Antarctic continent...”³⁷² and “[t]he value of the wild region of the Antarctic”,³⁷³ and therefore it can be used to address undertakings beyond a purely environmental perspective. Moreover, the notion of natural reserve is attached to the entire ice continent, instead of covering specific areas of it, which represents an advantage over the values formerly discussed, although its content remains somewhat vague absent agreements on the subject or definition otherwise recognized by international law. Even so, the ATS may fill this gap, exercising the power to recommend measures regarding the use of Antarctica, thus drawing a line between activities consistent and inconsistent with the objectives and principles of the ATS. One way or another, in view of the increasing pressure for developing new activities in the austral polar region, the parties should start working on defining a policy to address these issues.³⁷⁴

³⁶⁸ Annex V, *supra* note 55.

³⁶⁹ *Id.* art. 3.

³⁷⁰ See <http://www.antarctica.org/UK/Envirn/dia/parcmondial UK.htm> (last visited July 10, 2005).

³⁷¹ PEPAT, *supra* note 12, art.2.

³⁷² *Id.*

³⁷³ *Id.*

³⁷⁴ See Mercopress, , *supra* note 364.

CHAPTER IV

POSSIBLE APPROACHES

Proposals to improve tourism are as plentiful and diverse as there are actors involved in the subject. Consider the following example: While IAATO believes that treaty parties' pressure on non-affiliated companies to become members would help bring all operators into compliance,³⁷⁵ ASOC urges a strategic agreement among Antarctic Treaty parties to enact legislation instead of yielding to self-regulation of the industry, and criticizes Great Britain's commitment to IAATO.³⁷⁶ What does it mean to improve tourism, then? Broadly speaking, it requires making it consistent with the basic principles of the Antarctic Treaty System, namely the peaceful of Antarctica, its role for science, and the importance of protecting the Antarctic environment, so that all measures are to be aligned with those values.

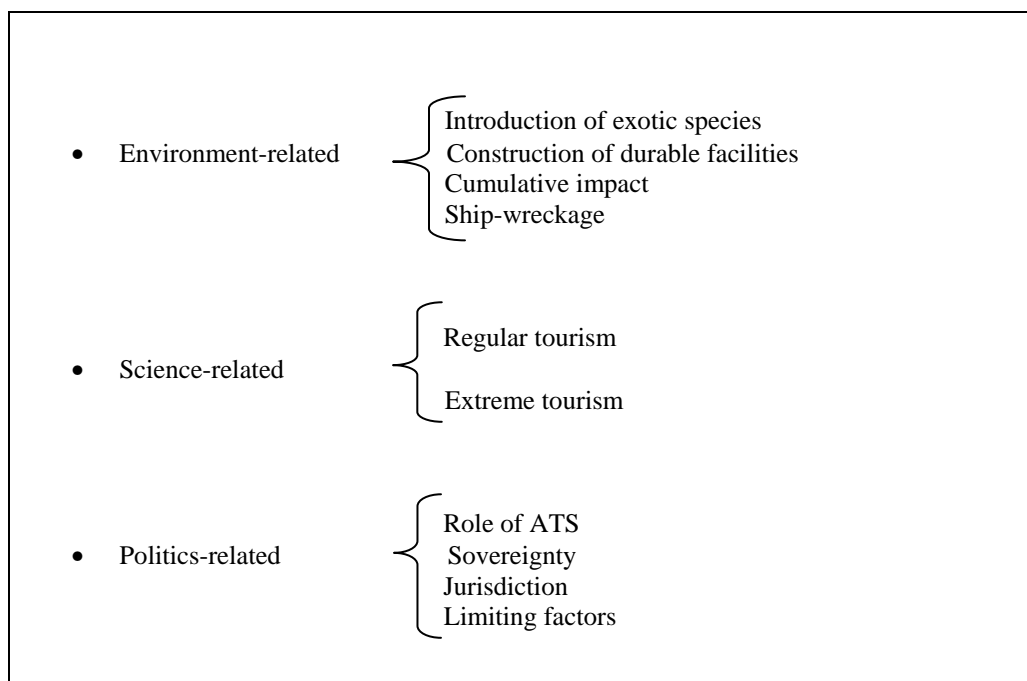


Figure 4: Summary of challenges associated with Antarctic tourism

³⁷⁵ IAATO, *6 year Survey of the Dominant Tourist Activities an Trends since the Ratification of the Environmental Protocol and a Five Year Estimated Forecast of Upcoming Activities*, ATME Doc. ATME/Paper 11, at 4 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

³⁷⁶ ASOC, *What does Regulation of Commercial Tourism mean?*, ATME Doc. ATME/Paper 21, at 1 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

A. REGULATION OF SHIPPING: A MEASURE OF IMMEDIATE ADOPTION

Accidents involving large ships loom on the horizon and preventive measures arise as the most pressing problem to deal with immediately. Unlike other problems previously laid out, oil spillage may happen the first day of the next season, leave an ecological catastrophe behind, impose countless labor hours and immense costs on scientific programs, and fatally harm ATS' image of diligent manager for the white continent.³⁷⁷ The international community would surely wonder what the point would be in having gone through exhaustive negotiations to get a prohibition on oil-drilling³⁷⁸ if a few years down the road large amounts of oil were carried and spilled over the supposedly protected area. Alarm has been sounded each time a paper on the feared disaster has been submitted to Antarctic meetings, and yet, like straws in the wind, incidents are reported at the end of nearly each season.³⁷⁹ So, in the event that a major accident becomes real, the ATS' failure to have taken action would hardly be understood by the international community.

1. Limit on the Overall Number of Vessels per Season

As discussed before,³⁸⁰ there is sufficient evidence to conclude that Antarctica, and particularly the Peninsula, has become quite crowded.³⁸¹ In order to minimize the chances of ship wreckages, a limit on the overall number of vessels per season needs to be imposed, which would make not only for safer navigation but would also favor the conservation of the other values of Antarctica. So long as the rationale underlying this limitation is primarily safety, the implementation requires, first, figuring out the overall number of ships able to sail around Antarctica without increasing the chances of accident beyond a reasonable threshold. In this process, the territorial concentration of tourist destinations plays a very

³⁷⁷ New Zealand, *supra* note 178, at 2.

³⁷⁸ PEPAT, *supra* note 12, art.7.

³⁷⁹ IAATO periodically reports to the Committee of Environmental Protection on environmental emergencies. *See e.g.*, IAATO, *An Assessment of Environmental Emergencies Arising from Activities in Antarctica*, 25th ATCM Doc. XXV ATCM/IP 39, at 2-3 (2002) (Reporting on a minor oil spill by the tourist vessel *MV Vista Mar*) available at <http://www.ats.aq/25atcm/25atcmIP.htm> (last visited June 12, 2006); *see also* IAATO, *An Assessment of Environmental Emergencies Arising from Activities in Antarctica 2002-2003 season*, 26th ATCM Doc. XXVI ATCM/IP 70, at 3 (2003) (Reporting on the grounding of tourist vessels *Clipper Adventurer* and *Marco Polo*), available at [http://www.aeci.es/26atcmadrid/docs/26IP070E%20\(AAATO%20CEP%20VI%207\).doc](http://www.aeci.es/26atcmadrid/docs/26IP070E%20(AAATO%20CEP%20VI%207).doc) (last visited June 5, 2006).

³⁸⁰ *See supra* Chapter I.D.

³⁸¹ *See supra* Chapter I.E.

important role in order to achieve an accurate estimation, since dividing the total surface of the Antarctic Area by the number of vessels operating or the number of trips over the last season would surely show a quite low density rate for vessels, while focusing on the places where tourism is actually taking place, reality shows that ship traffic turns out to be fairly high in the Antarctic Peninsula, and to a lesser degree in the Ross sea region.³⁸² Actually, the ten most visited places are spread over an area in the Peninsula whose size looks minuscule when compared with the entire continent.³⁸³ Second, the overall number needs allocating among the tourist operators. A good model to look at is the *Glacier Bay National Park* in the United States, where permits are awarded to companies on a best-bid-against-prospectus basis, so that operators offering the highest standards on items like reduced pollution, tourist education, and safety, are preferred in the permit-granting process.³⁸⁴ In the case of Antarctica, the permit regime should be administered by the ATS. Moreover, a number of tourist companies operating in Antarctica are already familiar with the Glacier Bay scheme since they operate there as well,³⁸⁵ so implementation should not encounter much resistance among them.³⁸⁶ Finally, the regime must apply differently to small and large vessels, with large vessels representing the chief target since they embody a greater threat to security. In this regard, the categories set down by IAATO may provide the necessary guidance over technical aspects. The association contemplates the following categories: a) sailing vessels able to carry less than 12 passengers, b) ships able to carry less than 200 passengers, c) vessels whose capacity is between 200 and 500 passengers, and d) ships carrying over 500 passengers.³⁸⁷

³⁸² The limitation may well be implemented along the four tourist areas the Peninsula has been broken into, namely South Shetland, Peninsula, Gerlache and Lemaire. See Argentina, *Tourism development in the Antarctic Peninsula: a regional approach*, 29th ATCM Doc. XXIX/IP 31, at 2-6 (2006), available at http://www.ats.aq/Atcm/atcm29/ip/atcm29_ip031_e.doc (last visited June 16, 2006).

³⁸³ ASOC & UNEP, *Antarctic Tourism Graphics: An overview of tourism activities in the Antarctic Treaty Area*, 28th ATCM Doc. XXVIII/IP 119, at 6 (2005) (see Map 2 as appendix at the end of the paper), available at http://www.ats.aq/Atcm/atcm28/ip/atcm28_ip119_e.doc (last visited June 16, 2006).

³⁸⁴ U.S. Department of Interior, <http://doi.gov/news/archives/990218a.html> (last visited Feb. 15, 2005).

³⁸⁵ E.g. *Crystal, Holland America, Princess, and World Explorer*, see <http://doi.gov/news/archives/990218a.html> (last visited Feb. 15, 2005).

³⁸⁶ IAATO Membership Directory 2006-2007, <http://www.iaato.org/IAATO/directory/> (last visited June 18, 2006).

³⁸⁷ IAATO bylaws, Art. III(A), at <http://www.iaato.org/bylaws.html/> (last visited June 25, 2006).

2. Safety Standards for Vessel Operation

This proposal consists of a series of requirements for all ship-based expeditions to Antarctica, which would help prevent ship breakdowns or ameliorate their immediate harmful effects. The following outline groups the main areas and possible requirements:

- a) Ship construction and equipment: All large ships should have appropriate ice classification (ICE-1C or equivalent);³⁸⁸ low-positioned radar antenna at the bows to detect icebergs and growlers;³⁸⁹ and double hull or spare empty tank to keep as much fuel as possible contained, which would simultaneously limit the pollution and provide the vessel a chance to get out of the Antarctic area.³⁹⁰
- b) Ship-powering: Every vessel should refrain from using heavy fuel oil [hereinafter HFO] while in the Antarctic Treaty area. When it comes to tourist vessels, the prohibition makes up a rather preventive measure since studies conducted by COMNAP show that the bulk of tourist vessels operating in the area sail on combustibles lighter than HFO.³⁹¹ However, as long as the ban applies to vessels regardless their activity, this would have an immediate impact on large ships fishing within the treaty area, most of which sail on HFO.³⁹² Based on a proposal by Norway aiming at the prohibition of HFO,³⁹³ the 28th Antarctic Treaty Meeting adopted a relatively mild decision asking the International Maritime Organization to “examine mechanisms to restrict the use of” such fuel.³⁹⁴ Notice that this measure would bind vessels registered in non-treaty parties that are IMO Members.³⁹⁵

³⁸⁸ New Zealand, *supra* note 178, at 3.

³⁸⁹ Italy, *supra* note 272, at 3.

³⁹⁰ Italy, *Some Comments and Proposals on Antarctic Tourism*, 27th ATCM Doc. XXVII ATCM/IP 39 (2004), available at http://www.ats.aq/27atcm/e_login/IP/27IP039E.DOC (last visited June 08, 2006).

³⁹¹ COMNAP & IAATO, *supra* note 276, at 1-2.

³⁹² Norway, *supra* note 278, at 1.

³⁹³ *Id.* at 1-2.

³⁹⁴ *Use of Heavy Fuel Oil (HFO) in Antarctica*, XXVIII ATCM Doc. XXVIII ATCM/Decision 08 (June 17, 2005), available at <http://www.ats.aq/> (last visited June 08, 2006).

³⁹⁵ IMO member states with year of join, <http://www.imo.org/home.asp> (last visited June 19, 2006).

- c) Ship-manning: The crew should incorporate an expert environmental officer on board, empowered to give out instructions in emergency cases;³⁹⁶ plus an ice navigator and experienced staff for the Antarctic leg of the expedition.³⁹⁷ Per to date, the only requirements in this regard come from Recommendation XVIII-1,³⁹⁸ which calls on organizers and operators to make certain they hire experienced and trained personnel, and from Resolution XXVII-4³⁹⁹ which insists that participants of activities in Antarctica have appropriate polar experience. Finally, IAATO recommends that 75% of officers and crew have prior experience in Antarctic waters.⁴⁰⁰
- d) Ship-routing: As discussed in the previous chapter, the problem at issue is primarily the high cost of producing navigation charts. In this respect, the ATS has taken the right approach by encouraging cooperation among parties and assisting them in coordinating efforts. As a matter of fact, the 26th ATCM issued a resolution⁴⁰¹ calling on consultative parties with hydrographic surveying and charting capabilities to coordinate their activities and contribute to the ongoing development of the INT chart scheme for Antarctic waters through the International Hydrographic Organization,⁴⁰² [hereinafter IHO] an intergovernmental organization established to take on advisory and technical functions.⁴⁰³ Even though considerable progress has been achieved,⁴⁰⁴ this is a lengthy process. So, in the mean time, the ATS ought to urge parties to

³⁹⁶ Italy, *supra* note 272, at 9.

³⁹⁷ *Id.*

³⁹⁸ Rec. XVIII-1, *supra* note 76.

³⁹⁹ *Guidelines on Contingency Planning, Insurance and other matters for Tourist and other Non-Governmental Activities in the Antarctic Treaty Area*, 27th ATCM Doc. XXVIII ATCM/Res. 4 (June 04, 2004), available at <http://www.ats.aq/> (last visited June 08, 2006).

⁴⁰⁰ Italy, *supra* note 272, at 3.

⁴⁰¹ *Hydrographic Surveying and Charting Activities*, 26th ATCM Doc. XXVI ATCM/Res. 3 (2003), available at <http://www.ats.aq/> (last visited June 8, 2006).

⁴⁰² International Hydrographic Organization <http://www.iho.shom.fr/iho.html> (last visited July 18, 2006).

⁴⁰³ IAATO, *supra* note 183, at 16.

⁴⁰⁴ A recent report by IHO highlights the increase the production of INT charts, the establishment of criteria to identify priority areas for surveying, the elaboration of a scheme for a main corridor round the Antarctic Peninsula, (Proposed Maritime Shipping Routes) and the development of guidelines for the collection of hydrographic information by tour vessels. See IHO, *Report by the International Hydrographic Organization (IHO) on "Cooperation in Hydrographic Surveying and Charting of Antarctic Waters"* 28th ATCM Doc. XXVIII ATCM/IP 18 (2005), available at http://www.ats.aq/Atcm/atcm28/ip/atcm28_ip18_e.doc (last visited June 16, 2006).

define navigation routes upon adequate and up-to-date charts,⁴⁰⁵ and to abide by the prohibition of access to some places according to the type of vessel.

With respect to the legal basis to adopt and implement such measures, it must be noticed that article 10 of annex IV of the Protocol provides: “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”.⁴⁰⁶ Some countries have seen enough ground here for parties to pass national legislation requiring companies to meet the standards aforementioned,⁴⁰⁷ whereas others rightly point out that such a regulation would reach beyond the scope of Annex IV, which does not deal in general with safety of navigation but only with waste management and garbage disposal.⁴⁰⁸ Furthermore, annex VI⁴⁰⁹ vests parties with jurisdiction to adopt preventative measures regarding the design, construction, operation and manning of means of transportation, but this instrument has been only adopted at the 28th Consultative Meeting and has yet to come into force.⁴¹⁰

The approach suggested by the United Kingdom seems to be the most suitable way out. The strategy would consist of three steps intended to combine short-term and long-term measures. First, the Antarctic Treaty parties would immediately adopt a recommendation to make the IMO-adopted “Guidelines for Ships Operating in Arctic Ice-covered Waters”⁴¹¹ applicable to Antarctic navigation, and to call on IAATO to endorse this measure.⁴¹² The COMNAP is known to have expressed the view that, except for slight adjustments, the regulations may be applied on the Antarctic Treaty Area.⁴¹³ This step would fill the gap existing currently by providing a normative foundation to bind on tourism expeditions

⁴⁰⁵ Italy, *supra* note 272, at 2.

⁴⁰⁶ Annex IV, *supra* note 66, art.10.

⁴⁰⁷ See United Kingdom, *supra* note 158, at 13-14.

⁴⁰⁸ New Zealand, *supra* note 178, at 3.

⁴⁰⁹ Annex VI, *supra* note 69.

⁴¹⁰ *Id.* art. 3.

⁴¹¹ IMO Guidelines, *supra* note 275.

⁴¹² Adopted by IMO at the 76th session of its Maritime Safety Committee and 48th session of the Marine Environment Protection Committee. See United Kingdom, *Antarctic Shipping Guidelines*, XXVI ATCM Doc. XXVI ATCM/WP 4, at 1 (2002), available at [http://www.aeci.es/26atcmadrid/documentos/..%5Cdocs%5C26WP004E%20\(UK%20ATCM%208\).doc](http://www.aeci.es/26atcmadrid/documentos/..%5Cdocs%5C26WP004E%20(UK%20ATCM%208).doc) (last visited July 26, 2005).

⁴¹³ CONMAP, *Information Paper on the Proposed Antarctic Shipping Guidelines*, 25th ATCM Doc. XXVATCM/IP 40, at 2 (2002) available at <http://www.ats.org.ar/25atcmIP.htm> (visited July 1, 2005).

operating under the umbrella of either the Antarctic Treaty System or IAATO. The second step would be the elaboration by ATS of an adapted version of the IMO guidelines for Antarctic navigation, for subsequent submittal to the International Maritime Organization for approval. This process might take some time due to the IMO internal procedures, but would be crucial to bring into compliance third-party flagged ships, and in particular, those operated by non IAATO-affiliated companies.⁴¹⁴ Lastly, the ATS recommendation should be repealed as soon as IMO guidelines enter into force, with a view to avoiding duplication or eventual inconsistencies between both legal bodies.⁴¹⁵ Even when this last part makes good sense, an important downside needs careful consideration as, unlike ATS recommendations, IMO guidelines are voluntary instruments, so the switch would mean a step back in the binding power of the norm.⁴¹⁶

B. UPGRADING ANTARCTIC TOURISM

Tourism is a legitimate use of Antarctica under the concept of peaceful activities, but it is not a priority within the ATS in the manner that peace, science and environment plainly are.⁴¹⁷ Therefore, tourism's legitimacy must be consistent with those goals and subordinate to their realization.⁴¹⁸ The proposal for a redefinition intends to set forth specific conditions for Antarctic tourism to be considered a legitimate activity. To that end, this activity must remain:

- a) Committed to science: Just as ecotourism is based on the involvement of local communities, Antarctic tourism has to get involved with the scientific community, who are the natural inhabitants of Antarctica. The commitment to science demands developing a cooperative and supportive relationship primarily with national programs, which may also extend to academic and research institutions.

⁴¹⁴ United Kingdom, *Tourism: Guidelines Related to Shipping. Provisions for non-Treaty Flagged Vessels*, Doc. ATME/Paper 3, at 4 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004). The paper includes in annex 1 a drafted a resolution urging voluntary adherence to be considered by XXVII ATCM in case guidelines on Antarctic shipping are adopted.

⁴¹⁵ See United Kingdom, *supra* note 158, at 14.

⁴¹⁶ IMO, <http://www.imo.org/home.asp> (last visited June 19, 2006).

⁴¹⁷ Antarctic Treaty, *supra* note 11, art. II.

⁴¹⁸ ASOC, *supra* note 157, at 1.

- b) Environmentally responsible: That is, carried out in accordance with the Protocol and all measures issued pursuant to it.⁴¹⁹ The industry must be committed to the conservation of the Antarctic environment and therefore it should provide assurances to prevent harmful impacts and remain liable if such impacts happen.
- c) Economically sustainable: Tourism is a commercial activity and as such it is allowed to operate on a reasonable profit margin, equally distributed among all actors involved. The industry must be encouraged to adopt a certification scheme to prove to potential customers its commitment to sustainability.⁴²⁰

The re-definition of Antarctic tourism would have a number of concrete implications for the problems associated with tourism; particularly, the interaction between tourism and science, the regulation of adventure tourism, and the role of the Antarctic Treaty System.

1. Tourism and Science

The Antarctic Treaty System has developed numerous measures that actually improve the state of affairs as they bypass specific pitfalls and make tourism less disturbing. However, the ATS has so far refused to address a greater challenge, which is the promotion of institutional partnership between tourism and science. History demonstrates that both activities tend to concur rather than diverge. Indeed, national programs have served as instruments for interested governments to get the tourist industry off the ground,⁴²¹ and even today significant common interests remain between the two. As noted in chapter II,⁴²² there is a stronger link between tourism and science since they depend on each other to succeed in a harsh environment where cooperation becomes the golden rule. On one hand, the industry counts on national scientific programs to maintain stations in good condition for tourist to visit, and quite often stations provide accommodations and other facilities for land-based operations.⁴²³ On the other hand,

⁴¹⁹ Australia, *supra* note 187, at 4 (2004).

⁴²⁰ *Id.*

⁴²¹ *See supra* Chapter I.B.

⁴²² *See supra* Chapter II.B.1.

⁴²³ COMNAP, *supra* note 323, at 2-3.

tourist ships and aircrafts provide a valuable means to have supplies and equipment delivered as well as to assist in personnel traveling or medical evacuations.⁴²⁴ Besides, tourism provides a vehicle for the scientific community to broaden its worldwide awareness campaign about Antarctica and get its chief themes to the public.

For several reasons, this relation needs strengthening through financial contribution from tourist operators to national Antarctic programs. First, national programs give rise to benefits that companies take advantage of (i.e. visitation of scientific stations or some historical sites), so it appears reasonable to expect them to bear a fair part of the costs. Second, while developed countries like the United States and Great Britain are perfectly able to operate their programs on their national budgets exclusively, less wealthy nations see tourism as an opportunity to achieve a competitive level of funding for science, and they should certainly be allowed to. Third, companies have been giving financial support to science for some time through either voluntary contributions to scientific stations or directly funding projects. The institutionalization of the funding scheme within the ATS frame would add a great deal of transparency since all parties would be made aware of the contributions, and would also participate in the investment-decision process. In turn, greater transparency and coordination would surely do away with the opposition that the voluntary contributions trigger in some treaty parties. Finally, the system would even pay off for companies should a certification scheme be established to let contributing companies distinguish themselves from competitors.

2. Adventure Tourism

Prospective approaches to address extreme tourism are to do nothing, to adopt a general prohibition, and to reconcile it with science under a new regulatory framework. On one extreme, to refrain from taking action seems a sensible decision if we focus on the relatively small size of extreme tourism. However, if the priority given to science by the ATS is considered, episodes like those described

⁴²⁴ France, *supra* note 201, at 7.

earlier ought to be kept from continuing to happen.⁴²⁵ At the other extreme, although the option of prohibiting extreme tourism shows a great deal of thoroughness in protecting science, it lacks a legal basis since this unmistakably falls into the description of peaceful use of Antarctica also included in the ATS.⁴²⁶ Hence, any attempt to have extreme tourism outlawed would require redefinition of the founding values of the ATS for legitimacy. Should the ATS take on this task, the weakest point of adventure expeditions is its blurred connection with Antarctica itself, as companies only take advantage of the white continent only as the stage where a sort of “epic accomplishment” is going to happen.⁴²⁷ On the other hand, the strongest point favoring the adventurers is the relatively diligent management that big companies supporting them have demonstrated after attaining twenty years of continuous and incident-free operation.⁴²⁸ As a result, the in between alternative is recommended, whose endeavors for harmonization shall be aimed at the following objectives:

- a) Strengthen safety aspects: At the 26th ATCM the United Kingdom recommended the “adoption of stringent guidelines to control unsupervised adventure tourism activities.”⁴²⁹ Meanwhile, Australia put forward “guidelines for private adventure expeditions to assist them in the planning and conduct of their activities”⁴³⁰ and drafted a resolution calling on organizers to use a check list to duly cover the aspects of safety, contingency management, and liability duly covered.⁴³¹ The United Kingdom then went one step further and urged every request to be turned down unless organizers had positive proof that they were fully capable of complying with the checklist.⁴³²

⁴²⁵ *Supra* Chapter II.B.2.

⁴²⁶ Antarctic Treaty, *supra* note 11, art. II.

⁴²⁷ New Zealand, *supra* note 178, at 4.

⁴²⁸ Norway, *Polar Tourism: Experience Gained and Lessons Learned from Svaldbard*, ATME Doc. ATME/Paper 24, at 6 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

⁴²⁹ See United Kingdom, *supra* note 158, at 3. *But cf.* ASOC, *supra* note 349, at 2. The author criticizes UK’s proposal on three grounds: a) The term “adventure tourism” is inadequate because it barely helps to discriminate activities carried out in Antarctica; b) “unsupervised” might be understood as non-IAATO members’ activities; and c) “stringent guidelines” constitutes an oxymoron because guidelines are voluntary.

⁴³⁰ Australia, *Management of Antarctic Non-Government Activities*, 26th ATCM Doc. XXVI ATCM/WP 13, at 2, available at [http://www.aeci.es/26atcmadrid/docs/26WP013E%20\(AU%20ATCM%2010\).doc](http://www.aeci.es/26atcmadrid/docs/26WP013E%20(AU%20ATCM%2010).doc). (visited Feb. 19, 2004).

⁴³¹ For a drafted resolution required contingency plan, SAR services, insurance to cover liabilities, environmental impact assessment, trained, experienced and proficient expedition members in health conditions adequate to undertake the expedition, first aid fully available, and complete equipment for Antarctic operation; *see id.* at 2.

⁴³² United Kingdom, *supra* note 306, Annex 1, at 6.

- b) Insurance coverage: In order to deal with budgetary issues, Australia endorses a financial security scheme comprising insurance, bond, or other means for national programs to get reimbursed for costs incurred in providing assistance in case of accident or emergency response.⁴³³ For its part, New Zealand argued for a common approach among parties embodied in a measure to be agreed on the XXVII ATCM

“[R]equiring all natural and legal persons under their jurisdiction or control who are responsible for a proposed tourist or non-governmental activity in Antarctica to provide evidence that they have obtained sufficient insurance to meet the costs of search and rescue and medical care and evacuation from Antarctica before the proposed activity may proceed.”⁴³⁴

- c) Improve coordination among parties: Proposals have stressed the need for consultation and cooperation among countries to avoid being played off against each other by tourism enterprises seeking authorization.⁴³⁵ The United Kingdom advised that all countries prospectively having jurisdiction over adventure expeditions are made aware in a timely fashion of assurances that domestic legislation has been complied with before issuing a permit. The mechanism put forward to secure this goal consists of a website for all parties to input details of expeditions notified to them and receive the information entered by others.⁴³⁶ This would be enhanced with an up-to-date list of national contacts administered by the Antarctic Treaty Secretariat,⁴³⁷ so that as soon as the expedition is proposed, all parties involved are in touch and may readily cooperate with one another.⁴³⁸

Upon advice from the ATME,⁴³⁹ a measure was adopted at the 27th ATCM to get parties to require non-governmental expeditions under their jurisdiction to demonstrate that proper arrangements for

⁴³³ Australia, *supra* note 187, at 2.

⁴³⁴ New Zealand, *supra* note 178, at 4.

⁴³⁵ United Kingdom, *Managing Adventure Tourism: The Need for Enhanced Cooperation among Parties*, ATME Doc. ATME/Paper 9, at 1 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

⁴³⁶ *Id.* at 3.

⁴³⁷ See *supra* note 33.

⁴³⁸ United Kingdom, *supra* note 435, at 3. Draft resolution: “adventure tourism: enhanced cooperation amongst parties” Furthermore, the United Kingdom drew-up a recommendation requiring parties to nominate a single point of contact for adventure tourism to exchange information and especially to contact all the other parties involved in the expedition before deciding on authorization.

⁴³⁹ FINAL REPORT OF THE ANTARCTIC TREATY MEETING OF EXPERTS ON TOURISM AND NON-GOVERNMENTAL ACTIVITIES [hereinafter ATME FINAL REPORT], para. 2, available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

back-up and contingency support had been made, and that associated costs were insured or otherwise allowed.⁴⁴⁰ Moreover, noting the importance of liaison activities and cooperation among parties, the ATME commissioned the United Kingdom to draw-up a list of requirements that must be met before obtaining authorization.⁴⁴¹ The draft submitted led to the adoption, at the 27th ATCM, of Resolution 4 (2004) on “Guidelines on Contingency Planning, Insurance and other matters for Tourist and other Non-Governmental Activities in the Antarctic Treaty Area”.⁴⁴²

3. Role of the Antarctic Treaty System

The matter concerns the type of relationship the ATS ought to maintain with respect to IAATO, for which possible models range between two extremes. At one extreme, the major value sought to be protected would be the interest of all contracting parties to maintain the ATS as the appropriate forum for Antarctic affairs. Accordingly, norms should always be enacted by the ATS so that IAATO participates only at the technical level.⁴⁴³ In the second case, the normative role would center around the association, whose capability to control companies is strengthened thanks to support from the ATS along with active discrimination against non-IAATO Members.⁴⁴⁴ It is a difficult situation though, since on one hand, tourism has openly become a significant activity so the ATS cannot disregard it and let the private industry lead the way; and even if it did so, failure of the self-regulation model would convey the task back to the ATS demanding considerable efforts from the parties, including huge financial resources. On the other hand, the ATS cannot do without such a significant actor. None of these radical models seem to constitute a suitable solution, but alternatives in between may provide an answer. The prototypes to look at are basically two: joint application of rules and integration of actors in the rule-making process. In the first case, both the ATS and the industry set out their regulations independently though securing due

⁴⁴⁰ See *Insurance and Contingency Planning for Tourism and Non-Governmental Activities in the Antarctic Treaty Area*, 27th ATCM Doc. XXVII ATCM/Measure 1 (2004), available at <http://www.ats.org.ar/27atcm/e/index.htm> (visited June 10, 2005).

⁴⁴¹ ATME FINAL REPORT, *supra* note 439, para. 3.

⁴⁴² See Resolution 4 (2004) of the XXVII ATCM, FINAL REPORT OF THE TWENTY-SEVENTH ANTARCTIC TREATY CONSULTATIVE MEETING, Annex C, 227 (2004), available at <http://www.ats.org.ar/27atcm/e/index.htm> (visited June 10, 2005).

⁴⁴³ Australia, *supra* note 187, at 3.

⁴⁴⁴ See United Kingdom, *supra* note 158, at 19.

coordination among them. Recommendation XVIII-1⁴⁴⁵ is a good example of this case, which was adopted by the ATS and subsequently endorsed and incorporated by IAATO as one of its own guidelines.⁴⁴⁶ Thus, the same rule reaches a greater number of expeditions because it is applied by treaty parties as ATS recommendation and by the tourism industry as IAATO guideline. In the second case, the integration model entails the integration of the tourist industry within the rule-making process so that the ATS defines the leading criteria for tourism management while IAATO is entrusted the implementation function. For instance, the ATS issue a recommendation calling on parties to require vessels to avoid converging on tourist sites in a way inconsistent with safe navigation. Then, IAATO is tasked with defining, at the beginning of each season, the maximum number of ships coming in and out of the most popular tourist sites. This integration-based model recognizes the different nature of ATS rules vis-à-vis self regulation by the industry and, at the same time, it keeps the best of each one by taking advantage of the legitimacy and trustworthiness of the ATS as a manager of Antarctic affairs, and by overcoming the ATS lack of technical expertise and cumbersome procedures. Also, it vests IAATO with confidence and power, yet it enables the ATS to retain control over the policy-making and gives it a great degree of leverage over the tourist industry. Finally, it must be highlighted that joint application and integration, are fully compatible since both methods look at different aspects of the regulatory scheme.

C. THE PRECAUTIONARY PRINCIPLE

From a conceptual perspective, precaution embodies one step ahead of prevention, in the sense that this latter allows for certain risks and threats, whereas the former obliges care to be taken regarding uncertain risks and threats from human activities as well. As mentioned earlier in discussing cumulative impacts on the Antarctic environment,⁴⁴⁷ general opinion considers available information to be unable to prove cause-and-effect connection between tourism and environmental phenomena.⁴⁴⁸ Indeed, there are so many factors impacting the Antarctic environment that it is almost impossible to set aside those

⁴⁴⁵ Rec. XVIII-1, *supra* note 76.

⁴⁴⁶ See IAATO, <http://www.iaato.org/bylaws.html> (last visited June 10, 2006).

⁴⁴⁷ See *supra* Chapter II.A.3.

⁴⁴⁸ IAATO, *supra* note 183, at 20.

exclusively attributable to tourism.⁴⁴⁹ Facing this dilemma, the initial question is whether uncertainty provides enough reason to stop or to continue. Diligent management of Antarctica weighs in favor of using the precautionary principle as the appropriate mode by which environmental protection policy should be developed. As applied to Antarctica, the precautionary principle would not lead to a prohibition on tourism, but it would entail significant implications.

1. Limits on Tourism

The question concerning tourism limitations often emerge as a dilemma of general versus specific limits. The choice of a general pathway involves restrictions that either cover the whole continent or are permanent in time, as it would be to set a tourist quota per season or exclude some forms of extreme tourism.⁴⁵⁰ On the other side, the specific pathway allows limitations to be placed based on individual characteristics of sites, particularly their environmental sensitivity and tourist attractiveness. Perhaps a sound strategy would involve both kinds of limitations playing out at different levels, as described in the following steps. First, creation of areas of tourist interest which would be intended to freeze the number of tourist sites, thus avoiding limitations imposed on specific sites being evaded by expanding the number of tourist destinations.⁴⁵¹ The number of tourist sites should be reviewed from time to time in order to assure appropriate balancing of diverse interests. Second, designation of areas of special protection, which is basically the approach followed by the Protocol through annex V⁴⁵² that creates the Antarctic Specialty Managed Areas as well as the Antarctic Specialty Protected Areas. Third, site-specific limitations incorporated into management plans, particularly as to the number of landings per day, the number of tourists per landing, and the activities that tourist expeditions may carry out (i.e. helicopter

⁴⁴⁹ Bastmeijer & Roura, *Regulating Antarctic Tourism*, *supra* note 155.

⁴⁵⁰ The Norwegian government decided to limit the number of tourists (60,000 per year), with a focus on the type of activities and places. *See* Norway, *supra* note 428, at 7.

⁴⁵¹ *See generally* Francia, *Creation of Areas of Special Tourist Interest*, 28th ATCM Doc., XXVIII ATCM/IP 12 (2005), available at http://www.ats.aq/Atcm/atcm28/ip/atcm28_ip12_e.doc (last visited June 16, 2006).

⁴⁵² Annex V, *supra* note 55.

flights over birds colonies are known to be highly disturbing). It is also necessary to establish a rest period as well as alternate season sites in order to allow enough time for recovery.⁴⁵³

2. Cumulative Impact of Tourist Activities

At the present point it has become clear that the application of the EIA process as set out by the Protocol is hardly suitable to evaluate the cumulative impacts that tourism may bring. The solution for this problem requires two simultaneous lines of attack. The first method has to do with the improvement of existing EIA through the incorporation of new tools for cumulative impact evaluation and monitoring; among them, the proposal by Argentina for an Intersessional Contact Group to undertake the elaboration of specific guidelines for EIA of tourist activities,⁴⁵⁴ the Ukrainian proposal to get the assistance of IAATO Members for the creation of a database out of the pictures taken by staff and passengers to sites, thus creating a continuous flow of information for future assessment and monitoring of environmental impacts (MONITOUR project).⁴⁵⁵ Also, the proposal for harmonization of national legislation with respect to environmental impact assessment, in particular definition of activities that are not subject to impact evaluation. Cumulative impact is especially important in the Fildes Peninsula, King George Island, given the explosive development of infrastructure and the impressive number of new projects under consideration so as to avoid repeating and magnifying the mistakes made in past experiences.⁴⁵⁶

The second line of attack, having a clear precautionary root, has been put forward by ASOC under the name of strategic environmental assessment, which basically calls for definition of long-term conservation objectives for the Antarctic region as a whole.⁴⁵⁷ The starting point of ASOC's proposal is

⁴⁵³ See Argentina et al., *Policy Issues Arising from On-site Review of Guidelines for Visitor Sites in the Antarctic Peninsula*, 29th ATCM Doc., XXIX ATCM/WP 2 (2006), available at http://www.ats.aq/Atcm/atcm29/wp/atcm29_wp002_e.doc (last visited June 19, 2006); see also France, *supra* note 201, at 5.

⁴⁵⁴ Argentina, *supra* note 159, at 2.

⁴⁵⁵ Ukraine, *Possibilities for Environmental Changes Monitoring with the Assistance of tourist Ship Cruises Staff/Passenger Photography in Antarctic Peninsula Region*, 28th ATCM Doc., XXVIII ATCM/IP 100, at 1-2 (2004), available at http://www.ats.aq/Atcm/atcm28/ip/atcm28_ip100_e.doc (last visited June 12, 2006)

⁴⁵⁶ ASOC, *Report of the Antarctic and Southern Ocean Coalition (ASOC)*, 29th ATCM Doc., XXIX ATCM/IP 107, at 5 (2006), available at http://www.ats.aq/Atcm/atcm29/wp/atcm29_ip107_e.doc (last visited June 19, 2006).

⁴⁵⁷ See generally ASOC, *Strategic Environmental Assessment in Antarctica: A Stepping Stone to Madrid Protocol Objectives*, 25th ATCM Doc. XXV ATCM/IP 82 (2002), available at http://www.ats.aq/Atcm/atcm25/IP/25IP082_E.doc (last visited June 12, 2006).

the assertion that co-management by countries is aimed at keeping Antarctica “better than now and certainly not worse than now,”⁴⁵⁸ so “how do we want Antarctica to look environmentally in ten years, and in twenty years”⁴⁵⁹ makes the critical question from which the definition of permitted activities that are in line with those objectives would flow. The undertakings deemed as consistent would in due course be assessed through the EIA process. This is a top-down approach in the sense that it goes from overall goals down to specific activities, whereas EIA runs bottom-up, from specific activities up to overall goals.⁴⁶⁰

3. Construction of durable facilities

From a theoretical point of view, there are four options to deal with durable installations in Antarctica. The first approach would be a total ban in order to keep tourism from developing to a large scale. From this stand, Australia argues that for tourism to be legitimate it must remain in the category of activities having no more than a minor or transitory impact,⁴⁶¹ which would preclude any chance of long-lasting facilities.⁴⁶² Germany deems tourist accommodations completely inconsistent with the objectives and principles of the ATS,⁴⁶³ while France goes well beyond and supports an explicit prohibition of “durable installation of people in Antarctica”.⁴⁶⁴ The second approach consists of wide authorization for private operators to build permanent facilities in Antarctica under a regime of land ownership similar to those established by domestic legal systems. Although conceivable in theory, this alternative could not be implemented without the treaty parties agreeing on a permanent allocation of Antarctic land among countries under a sovereignty scheme, which would be inconsistent with the Antarctic Treaty provisions, so this alternative is not feasible under the current legal regime. The third approach is embodied by an ATS-granted permit, which means the power to authorize the construction of permanent or semi-

⁴⁵⁸ ASOC, *supra* note 456, at 4.

⁴⁵⁹ *Id.*

⁴⁶⁰ *See generally* ASOC, *supra* note 457, at.

⁴⁶¹ Australia, *supra* note 187, at 2.

⁴⁶² *Id.* at 4.

⁴⁶³ Germany, *Tourism in Antarctica*, ATME Doc. ATME/Paper 18, at 2 (2004), available at <http://www.npolar.no/atme2004/> (last modified Feb. 19, 2004).

⁴⁶⁴ France, *supra* note 201, at 11.

permanent facilities by a private operator would be vested upon the Antarctic Treaty System exclusively. In a way, this would be the most efficient solution for land based tourism because Antarctic is subject to a common management mechanism, and it makes sense that any kind of title should be issued by the institutions of the co-management. This proposal would naturally be opposed by claimant states since it would threaten their position about sovereignty. Finally, there is the possibility of a State-granted regime of property, whereby the construction is carried out by a private operator under the sponsorship of the treaty party “in whose territory the actual control, management and use of the resources is located”⁴⁶⁵ Such a regime would certainly be controversial from a sovereignty point of view and, it would surely increase the tension inside the Antarctic Treaty parties as some countries would see the sponsoring-state role as a way to strengthening their territorial claims. However, proper application of article IV⁴⁶⁶ of the Antarctic Treaty should prevent any attempt for enhancement of sovereignty rights. Moreover, the system has a significant upside in the creation of a clear link between one grantor-state and the private company that holds the property title, which would build toward a clearer regime of liability. In this regard, Chile has made a case for permanent facilities under state-sponsorship pointing out that no rule within the ATS forbids the building of facilities, and that according to Chilean domestic laws governmental facilities could be leased or made over as a concession to a tour operator.⁴⁶⁷ Also, this position meshes well with private companies. For example, IAATO claims that Adventure Network International has operated in Antarctica for over twenty years and should be allowed to carry on.

4. Exotics

As discussed in chapter II,⁴⁶⁸ the issue of invasive species encompasses two facets, prevention and removal. Preventing the introduction of foreign organisms is more cost-effective than eradication programs, though it faces the problem of increasing openness of pathways for invasive species to come in.

⁴⁶⁵ Davis, *Protecting Antarctica*, *supra* note 136, at 761 (describing the sponsoring-state role in the context of CRAMRA).

⁴⁶⁶ Antarctic Treaty, *supra* note 11, art. IV.

⁴⁶⁷ ATME FINAL REPORT, *supra* note 439, para 11.

⁴⁶⁸ See *supra* Chapter II.A.1.

So the approach in this case basically demands tightening the control measures currently in place.⁴⁶⁹ For this to be achieved, some proposals follow:

a) Parties need to continue to identify and assess possible pathways so as to develop pathway-specific pre-departure procedures of decontamination.⁴⁷⁰ Among the pathways deserving thorough examination are visitor's personal belongings such as clothing and baggage, vehicles introduced in the Antarctic area, supplies, in particular, food, and maritime-related pathways such as rubber boats, the hull of ships, anchor chains, and ballast water.⁴⁷¹

b) Further, a quarantine procedure needs to be developed for appropriate cases,⁴⁷² while a focus on tourist education would significantly reduce the costs of exotics surveillance.⁴⁷³ Finally, adaptive management practices based on continuous monitoring should provide the necessary feedback to keep evaluating and improving the system.

c) Site specific measures need to be adopted because the vulnerability to alien invasion varies from one site to another. Actually, South Georgia is known to be one of the most vulnerable areas since it is impacted by climate change in general, its glaciers are retreating, and the number of tourists is high and still increasing.⁴⁷⁴

With respect to the second facet, invasive species are especially harmful within the Antarctic context because they adversely impact a wide array of values including the environment, but also extending to the pristineness, wilderness and ultimately the existence value of the ice continent.⁴⁷⁵ Hence, the removal of exotics remains imperative as all countries are obliged to protect the values

⁴⁶⁹ New Zealand, *Non-native Species in the Antarctic: Report of a Workshop*, 29th ATCM Doc. XXIX ATCM/WP13, at 13 (2006) available at http://www.ats.aq/Atcm/atcm29/wp/atcm29_wp013_e.doc (last visited June 12, 2006).

⁴⁷⁰ Australia, *Measures to address the unintentional introduction and spread of non-native biota and disease to the Antarctic Treaty Area*, 28th ATCM Doc. XXVIII ATCM/WP28, at 2 (2005) available at http://www.ats.aq/Atcm/atcm28/wp/atcm28_wp028_e.doc (last visited June 12, 2006).

⁴⁷¹ Scientific Committee on Antarctic Research, *Biodiversity in the Antarctic*, 29th ATCM Doc. XIX ATCM/WP 37, at 5 (2006), available at http://www.ats.aq/Atcm/atcm29/wp/atcm29_wp037_e.doc (last visited June 12, 2006).

⁴⁷² *Id.*

⁴⁷³ New Zealand, *supra* note 469, at 13.

⁴⁷⁴ ASOC, *supra* note 6, at 6.

⁴⁷⁵ IUCN, *Introduction of Non-native Species, Parasites and Diseases*, XXVIII ATCM Doc. XXVIII ATCM/IP63, at 2 (2005), available at http://www.ats.aq/Atcm/atcm28/wp/atcm28_wp028_e.doc (last visited June 11, 2006).

aforementioned. Therefore, despite the fact that the Protocol requires parties only to take back out those invasive species introduced since it entered into force, the ATS should call on parties to remove those carried in even before that date or, should eradication prove unfeasible, to adopt confinement measures.⁴⁷⁶

D. EXPANSION OF JURISDICTIONAL SCHEME

1. Prescriptive Jurisdiction: Bridging the Gaps

It flows from the analysis in the second chapter that efforts need to focus on flag-state jurisdiction,⁴⁷⁷ with a view to bringing as many expeditions as possible under regulation. Attempts to solve the problem may result from two alternative policies. First, the ATS might use policy instruments to encourage those vessels to switch flags to party countries, such as rewarding those vessels operating under party state flags or punishing those operating otherwise, i.e. calling on parties to allow visitation of scientific stations by tourists traveling under a party state-flagged vessel only. However, according to IAATO, the reason why companies have opted for convenience flags is to be able to utilize multinational crews, not to find a way around tourism regulations, so forcing them to re-flag would entail them giving up important benefits. In order to overcome this hurdle, the ATS would have to encourage companies to switch to those countries that are parties of the ATS and whose legislation allows companies to hire multinational crews, so that companies may register their vessels in those countries without bearing additional costs. Additionally, the ATS might encourage countries to amend their legislation in order to allow for companies to hire multinational crews, although this would surely involve complex internal issues. Second, the ATS might attempt to reach those vessels by enhancing collaborative action with other legal bodies. For instance, by acting together with IMO, the ATS could reach important non state-flagged vessels, as it is the case with Bahamas, Liberia, Panama, and Vanuatu.

⁴⁷⁶ New Zealand, *supra* note 469, at 13.

⁴⁷⁷ *See supra* Chapter II.C.3.a.

2. Enforcement Jurisdiction: Enhancement of Port-State Control⁴⁷⁸

The main reason for adopting such a model is the recognition of the need to enhance the enforcement mechanisms, since that is precisely the weakest point of the regulatory scheme. Port-state control would consist of regular inspections before clearing a ship for departure.⁴⁷⁹ Questions of jurisdiction regarding Antarctica, and particularly legal arguments for the set-up of a gateway state's jurisdictional scheme will be discussed in the next chapter. In the interim, it suffices here to enumerate the reasons underlying this proposal.

First, at this point it has become evident that flags of convenience are often unable, if at all interested, to insist on compliance with internationally recognized maritime rules.⁴⁸⁰ For example, it is very unlikely that the Bahamas-flagged *M/N Bremen* has been inspected by The Bahamas when starting last season's operation in Antarctica and, even if it had, the Bahamas are not an ATS member, and consequently Antarctic rules cannot be enforced against it. Second, port states represent the widest possible scope for a norm because wherever ships may come from, they must stop at a gateway-country prior to sailing on toward Antarctica. Third, some of these countries have expressed a clear commitment to the Antarctic environment and have enacted stringent legislation, so they represent quite reliable points of control. Fourth, it is increasingly necessary to harmonize standards of operation among port states to discourage companies from shopping around to find the most lenient legislations. Finally, standardization would tend to preclude gateway states from promoting tourism by lowering safety and environmental standards as a commercial strategy to support their port-facilities and national industry.

The proposal to bring expeditions under compliance consists of a control regime outside the Antarctic Treaty area, which would empower departure states to inspect all expeditions (including

⁴⁷⁸ For a exhaustive analysis of the subject, see ASOC, *Port State Control: An Update on International Law Approaches to Regulate Vessels Engaged In Antarctic Non-governmental Activities*, 26th ATCM Doc. XXVI ATCM/IP 44 (2003), available at <http://www.ats.aq/> (last visited July 8, 2006).

⁴⁷⁹ See United Kingdom, *supra* note 158, at 4.

⁴⁸⁰ See ASOC, *supra* note 478, at 2-3.

tourism) leaving their ports.⁴⁸¹ This mechanism would build upon a double assumption: first, that all expeditions depart from a gateway country's port, and second, that inspections achieved at distant points may not assess the same condition of ships as they would have when sailing across the line of 60° south. The closer to the Antarctic Treaty area, the better controls can be carried out.

As for the legal basis, such a regime would be consistent with the Treaty itself given the parties' obligation of requiring advanced notice of "all expeditions to Antarctica organized in or proceeding from its territory."⁴⁸² It is worth noting that this provision does not restrict the check-out process only to nationals of the supervising state. The Protocol provides legal ground as well since it does not just require all activities (explicitly including tourism) to be notified, but also to be carried out "in a manner consistent with the principles in this article"⁴⁸³ so that each and every expedition may be controlled by a departing state.⁴⁸⁴ Comparative analysis also supports port-state control as it is widely recognized as an international law rule that a ship voluntarily entering a foreign port accepts the jurisdiction of that foreign state.⁴⁸⁵ Among the chief conventions that have adopted this scheme are the International Convention on Load Lines (article 21);⁴⁸⁶ the International Convention for the Safety of Life at Sea (Chapter I, Regulation 19, 1974);⁴⁸⁷ the International Convention for the Prevention of Pollution from Ships;⁴⁸⁸ the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (Article X),⁴⁸⁹ and the United Nations Law of the Sea Convention.⁴⁹⁰ In addition, several regional agreements on

⁴⁸¹ See ASOC, *supra* note 478, at 9-17 (Draft Antarctic Memorandum of Understanding on Port State Control Measures).

⁴⁸² Antarctic Treaty, *supra* note 11, art.VIII(5)(a).

⁴⁸³ PEPAT, *supra* note 12, art.3(4).

⁴⁸⁴ *Id.*

⁴⁸⁵ See ASOC, *Port State Jurisdiction: An Appropriate International Law Mechanism To Regulate Vessels Engaged In Antarctic Tourism*, 25th ATCM Doc. XXV ATCM/IP 63, at 2, available at <http://www.ats.org.ar/25atcmIP.htm> (last visited May 25, 2005).

⁴⁸⁶ International Convention on Load Lines, Apr. 5, 1966, 18 U.S.T. 1857, 640 U.N.S.T. 133, T.I.A.S. 6331, available at <http://www.austlii.edu.au/au/other/dfat/treaties/1968/23.html> (last visited July 9, 2006).

⁴⁸⁷ International Convention for the Safety of Life at Sea, Nov. 1, 1974, 32 U.S.T. 47, 1184 U.N.T.S. 278, available at <http://www.austlii.edu.au/au/other/dfat/treaties/1983/22.html> (last visited July 9, 2006).

⁴⁸⁸ MARPOL 73/78, *supra* note 67.

⁴⁸⁹ International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, July 7, 1978, Senate Treaty Doc. No 96-31, 1361 U.N.T.S. 133, available at <http://www.admiraltylawguide.com/conven/stcw1978.html> (last visited July 9, 2006).

⁴⁹⁰ United Nations Law of the Sea Convention, Dec. 10, 1982, 1833 U.N.T.S. 3, 21 I.L.M. 1261, available at http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm (last visited July 9, 2006). Articles

port state jurisdiction have been concluded through memoranda of understanding [hereinafter MOU].⁴⁹¹ Lastly, national legislation has also embraced this principle. For instance, the Governor of *Svalbard* (Norway) is empowered to inspect passenger ships in order to ensure that they bear the certificates required by home countries and that they are constructed and equipped for navigation over ice-covered waters among other matters.⁴⁹² With respect to air-borne tourism, the Convention on International Civil Aviation⁴⁹³ lends support to the (air)port-state jurisdiction as article 12 enables contracting parties to enforce their rules and regulations not only against aircrafts registered in its territory no matter where such aircraft may be, but also against aircrafts registered in other countries while they are flying over or maneuvering within the territory of the enforcing state.

One of the great benefits of this system would be to broaden the scope of inspections to include fulfillment of safety requirements whose supervision may hardly be justified under the sole umbrella of the Protocol. It has been previously noted that there is a need for regulation for extreme tourism, which has little or no environmental impact but does pose a high risk for human life in case of accident.⁴⁹⁴

The main obstacle to adoption of port-state jurisdiction would be opposition from some consultative parts due to the probable effects of the scheme on the territorial claims. An especially sensitive situation concerns the Antarctic Peninsula, since on one side it concentrates most visits and, on the other, territorial claims of three states partially overlap on that territory. As a result, it is likely that the United Kingdom would see in this initiative an attempt by Chile and Argentina to improve their

218, 219, and 226(1)(c) of 1982. Article 218, accepted as customary international law, provides the most far-reaching application of port state jurisdiction and control over marine pollution standards by providing port states with the authority to investigate pollution violations wherever they occur.

⁴⁹¹ Paris MOU on Port State Control, 1982; Viña del Mar Agreement, 1992 (Latin American Agreement on Port State Control); Tokyo MOU, 1993 (Asia-Pacific MOU on Port State Control in the Asia-Pacific Region); Caribbean MOU, 1996 (MOU on Port State Control in the Caribbean Region); Mediterranean MOU, 1997 (MOU on Port State Control for the Mediterranean Region); Indian Ocean MOU, 1998; and West and Central African MOU, 1998. See ASOC, *supra* note 478, at 4.

⁴⁹² Norway, *supra* note 428, at 6.

⁴⁹³ Convention on International Civil Aviation, Dec. 7, 1944, 61 Stat. 1180, T.I.A.S. 1591, 15 U.N.S.T. 295.

⁴⁹⁴ United Kingdom, *supra* note 306, at 1.

relative positions as claimant states, which would explain the English preference for a "comprehensive"⁴⁹⁵ regime involving all consultative parties in port state control, regardless of their geographic location.⁴⁹⁶

The option for avoiding natural tensions among consultative parties could lead to a progressive transference of normative and enforcement functions from the ATS to self-regulation, particularly IAATO, a process that ultimately would erode the effectiveness of the ATS. In facing the dilemma of internal tensions versus effectiveness, the ATS should go for effectiveness. History teaches that since the Treaty of Washington was concluded in 1959, the ATS has deal with diverse attacks like the attempts to transfer the Antarctic subject to the United Nations, the characterization of consultative parties as "the Antarctic club",⁴⁹⁷ and the failed convention for mineral exploration and operation. The ATS has successfully overcome these stumbling blocks thanks to its proven flexibility, its capability to anticipate facts, and to the effectiveness exhibited in the handling of the Antarctic subjects.

3. Adjudicative Jurisdiction

To some extent, the issues of jurisdiction constitute the cost of securing peace. Indeed, it is precisely the claim-freezing strategy followed by the treaty parties that renders impossible the exertion of jurisdiction on the grounds of territorial sovereignty over Antarctic land.⁴⁹⁸ Therefore, alternative grounds are required. To solve this problem, the Antarctic Treaty opted for keeping the jurisdictional interrogation open by committing parties to consult with each other and make the necessary efforts to reach a mutually acceptable solution,⁴⁹⁹ while at the same time it provided guidance through a four-factored scheme of basis for jurisdiction: country of expedition's organization, nationality of its members, state of the flag under which the expedition travels, and state of the port of departure.⁵⁰⁰

In order to reduce the probability of loopholes, the ATS parties need to harmonize the criteria enshrined in their domestic legislation and provide for adjudication on the four grounds previously

⁴⁹⁵ See United Kingdom, *supra* note 158, at 16.

⁴⁹⁶ *Id.*

⁴⁹⁷ See Beeby, *supra* note 16, at 8.

⁴⁹⁸ Lee, *supra* note 21, at 75-6.

⁴⁹⁹ Antarctic Treaty, *supra* note 11, art. XI.

⁵⁰⁰ *Id.* Art. VII(5)(a).

mentioned, so that expeditions breaking the Antarctic Treaty provisions on tourism are less likely to get away with it. Nevertheless, question arises as to whether this model would increase the chances of conflict over jurisdiction as it enlarges the list of potential States attempting to sit in judgment of the same expedition. One possible way-out might be an order of precedence so that one factor would apply only if the other failed. For example, in facing a problem of concurrent jurisdiction the following rules might be applied: a) Pursuant to the general principles of the Law of the Sea Convention, the first country entitled to exert jurisdiction would be the state of the flag; b) Should this rule prove ineffective due to lack of ability or willingness by the flag state, the next country in the order of precedence would be that in whose territory the expedition was organized because this is the state that issued the permit for the expedition to proceed. If the expedition requested permission from that state, there are grounds to presume such expedition to have accepted the authority of such state; c) In third place, the state from whose port the expedition departed ought to be allowed to adjudicate because a clear connection exists between the state and the expedition; and d) Lastly, the nationality of the expedition should operate as a default basis for adjudication.

CHAPTER V

IMPLEMENTATION

A. NECESSITY OF RULES

The initial side in the analysis regards whether legal deficiencies result directly from the conventions that form the ATS, or they rather reflect the lack of performance parties have incurred with respect to their international obligations. In the first case, amendments or new instruments need to be created or concluded; in the second, review of existing municipal rules, enactment of domestic legislation and further implementation by the treaty parties would be the answer. The prime reason favoring the first alternative is that the Protocol on Environmental Protection to the Antarctic Treaty⁵⁰¹ cannot effectively cover significant aspects of tourism. Indeed, despite the adoption of Recommendation XVIII-1,⁵⁰² which provides guidance to those visiting Antarctica and to those organizing and conducting tourism and non-governmental activities⁵⁰³ countries like France have continually called for new rules and regulations on Antarctic tourism.⁵⁰⁴ Opposing this position, the United States has expressed the view: “[T]he Antarctic Treaty and its Protocol on Environmental Protection Provides a comprehensive basis for regulating Antarctic tourist activities, the United States supports strong and effective domestic implementation of the Parties.”⁵⁰⁵ This stance seems to have missed the point as it fails to take into account that however comprehensive the Protocol may be, it remains limited to environmental affairs, while current tourism poses clear and significant concerns for non-environmental matters such as safety and self-sufficiency.⁵⁰⁶ In addition, trends developed over time show an increase in the number of countries endorsing the

⁵⁰¹ PEPAT, *supra* note 11.

⁵⁰² Rec. XVIII-1, *supra* note 76.

⁵⁰³ FINAL REPORT OF THE EIGHTEENTH ANTARCTIC TREATY CONSULTATIVE MEETING, para. 59, (1994).

⁵⁰⁴ See generally France, *Usefulness of an Annex VII to the Madrid Protocol regarding the regulation of tourist and non-governmental activities in the Antarctic Treaty area*, 25th ATCM Doc. XXV ATCM/WP 2 (2002), available at http://www.ats.aq/Atcm/atcm25/WP/25WP002_E.doc (last visited May 25, 2005).

⁵⁰⁵ United States of America, *supra* note 46, at 5.

⁵⁰⁶ France, *supra* note 201, at 9.

adoption of distinctive rules for tourism.⁵⁰⁷ Among them, New Zealand, whose position in 1992 was “all that needed to be done was to read the words *activities* throughout the protocol as *tourism* and this would provide for adequate regulation,”⁵⁰⁸ and which was replaced in 2004 by “[T]here is an urgent need for the Consultative Parties to agree a range of Measures such as those proposed above in order to construct a more comprehensive response to, and establish the necessary responsibility for the management of tourism and non-governmental activities in Antarctica.”⁵⁰⁹

B. AVAILABLE INSTRUMENTS

Success in handling Antarctic tourism depends not only on adopting the most suitable measures, but also on picking the right instruments to have such measures implemented. Taking the widest possible range into consideration, which includes both binding and voluntary norms, public and private standards, as well as international and municipal ones, the available alternatives consider modification of the Antarctic Treaty, conclusion of a new Annex to the Protocol, adoption of further ATS measures, development of IAATO guidelines, and enactment of domestic legislation. The first alternative has not been the subject of debate within the ATS. Consequently, it does not appear as a probable outcome. Rather, countries seem to be in agreement that tourism raises no question regarding the principles that inspired the Treaty, and yet in this case, modification would be quite a complex process, wherein consensus would not be easily achievable, and the likelihood of provoking unnecessary internal tensions would make it a sensible idea to seek another alternative. As expressed in the 26th ATCM, the options for regulation at the international level are a new protocol on tourism, a new annex to the existing protocol, the adoption of specific measures, and/or the use and review of existing guidelines on tourism.

1. Amendment to the Protocol on Environmental Protection to the Antarctic Treaty

The amendment of the Protocol could be undertaken to incorporate rules whose scope of application is intended to go beyond the particular subjects addressed by each annex. Thus, problems of

⁵⁰⁷ ATME FINAL REPORT, *supra* note 439, para. 10.

⁵⁰⁸ New Zealand, *supra* note 178, at 1.

⁵⁰⁹ *Id.* at 6.

legal construction such as the one concerning the usefulness of article 10 of annex IV as a legal basis for setting out standards for navigations would be avoided.⁵¹⁰ In this direction, the Protocol should be amended to deal with such issues as the explicit legal recognition to the principle of precaution, which has not expressly been recognized yet, despite the fact that it lies at the heart and practice of the ATS and provides the basis for significant provisions, such as the ban on mineral exploitation.⁵¹¹ Another matter capable of being addressed through Protocol amendment would be the land property regime, either to cast a general prohibition aimed to foreclose any possible chance of property rights in private hands, or to develop a scheme providing for the conditions under which private operators might exercise some sort of land ownership.⁵¹²

2. Annex on Tourism⁵¹³

Generally speaking, different instruments represent different depth in the degree of intervention of tourism, the higher the hierarchy, the deeper the degree of intervention. Hence, a new convention would well serve the purpose of developing institutional machinery, or setting forth principles and objectives of the ATS policy. On the other side, new measures are of great help to deal with specific issues, such as establishing a requirement of hiring trained and experienced personnel for Antarctic navigation. From this perspective, the adoption of a new annex on tourism might be intended to put into writing and hopefully into action the major decisions adopted by the ATS on this particular industry,⁵¹⁴ such as those concerning the definition of Antarctic tourism, the principles of Antarctic tourism as environmentally responsible, economically sustainable and committed to supporting science. A significant contribution would be to promote and provide adequate means for tourist operations to financially support national scientific programs. Issues for an annex on tourism are all those involving

⁵¹⁰ See *supra* Chapter III.A.2.

⁵¹¹ PEPAT, *supra* note 12, art.7.

⁵¹² See *supra* Chapter III.A.2.

⁵¹³ The adoption of a new annex needs to be done through the issuance of a measure by the ATCM. See PEPAT, *supra* note 12, art. 9(2) "Annexes, additional to Annexes I-IV, may be adopted and become effective in accordance with Article IX of the Antarctic Treaty."

⁵¹⁴ See generally France, *supra* note 464.

strategic considerations about the management of the industry, i.e. definition of acceptable overall levels and acceptable growth rates of tourism, determination of prohibited and permitted tourist activities.⁵¹⁵ Also, a regime for durable installations for land-based tourism might be dealt with at this level not at the Protocol level.⁵¹⁶

Parties favoring this avenue have pointed out that, although the Protocol is intended to cover all activities in Antarctica, there are sub-regimes functioning fairly well under special conventions, notably the CCALMR.⁵¹⁷ On the other side, argument against a new annex has been made on grounds of alleged redundancy, since the entire Protocol applies to all activities including tourism, and the slowness of ATS procedures compared to self-regulation, which might lead companies to operate outside the ATS.⁵¹⁸

3. Adoption of Specific Measures

Measures are intended to develop and give effect to the principles and objectives that the Treaty, the Protocol and Annexes have previously established. Consequently, measures are permissible only within the legal framework established by those instruments, particularly in the areas of uses of Antarctica,⁵¹⁹ scientific research, scientific cooperation, right of inspection, jurisdictional issues, and protection of Antarctic living resources. As a result, some matters susceptible to being addressed through measures are: calling on parties to review domestic legislation in order to ensure a higher degree of consistency with the Protocol,⁵²⁰ development of shipping guidelines for Antarctic Navigation, adoption of a quarantine scheme for exotics and diseases control; elaboration of codes of conduct and guidelines for non-IAATO tour operators; and calling on countries to enforce ATS provisions with respect to the companies operating within their territory.

⁵¹⁵ ASOC, *supra* note 456, at 5.

⁵¹⁶ *Id.*

⁵¹⁷ New Zealand, *supra* note 178, at 2.

⁵¹⁸ France, *supra* note 201, at 9.

⁵¹⁹ Antarctic Treaty, *supra* note 11, art. IX(1)(a).

⁵²⁰ *See* United Kingdom, *supra* note 158, at 3.

4. Use and Review of Existing Guidelines on Tourism

The United Kingdom, backed by Germany⁵²¹ and Italy,⁵²² has put forward a recommendation about more innovative site-related management,⁵²³ which calls for enhancement of use and administration of protected areas under the Annex V,⁵²⁴ as well as adoption of site-oriented recommendations to complement the existing Recommendation XVIII-1.⁵²⁵ In the British view, the current system allows for tourism regulation by either putting sites off limits (e.g. Antarctic Specialty Protected Areas) or permitting some activities (Antarctic Specialty Managed Areas); however few initiatives go after the designation of new sites with a view to tourism development.⁵²⁶

5. Self Regulation

In accordance with the characteristics previously discussed, this type of regulation remains a valuable resource to address tourism issues in a prompt fashion especially when it comes to issues having a highly technical nature. Another advantage is that this option allows measures to be adopted more tentatively, since the norms are limited in their application scope (i.e. only to IAATO members) and may be more easily modified. Thus, upcoming issues may be first approached through non-binding rule to see how the industry reacts, so binding legislation is enacted upon that experience.

6. Domestic legislation

Each state party has an international obligation to take “appropriate measures within its competence, including the adoption of laws and regulations, administrative actions and enforcement measures to ensure compliance with this protocol.”⁵²⁷ In general, parties have enacted legislation that turns out helpful to deal with its own nationals, flags, ports and airports. However, countries have accorded different priority to tourism, which gives raise to equally different domestic legislations that in

⁵²¹ Germany, *supra* note 429, at 3-4.

⁵²² Italy, *supra* note 272, at 2.

⁵²³ IAATO, *supra* note 183, at 12.

⁵²⁴ Annex V, *supra* note 55.

⁵²⁵ See United Kingdom, *supra* note 158, at 3.

⁵²⁶ The exception are the historic huts in the Ross sea area (ASPA 155, 157, 158, and 159), see United Kingdom, *supra* note 158, at 9.

⁵²⁷ PEPAT, *supra* note 12, art.13.

turn feed the tourist dumping of companies seeking the lowest-standard legislation. In this regard, IAATO has expressed concern about substantial differences among the countries in interpreting and making effective the Protocol's provisions and has manifested interest in sharing specific information with the parties.⁵²⁸ In IAATO's view, it is imperative that countries conducting government-sponsored tourism enact appropriate legislation to ensure the same standards for both IAATO and non-IAATO Members, particularly with respect to advance notification, environmental impact assessment, exchange of itinerary information, passengers landing, and post visit reporting.

A minimum normative standardization ought to be achieved for a legal framework on Antarctic tourism to be effective.⁵²⁹ It is hardly justifiable that after all the discussion on inherently hazardous components in the industry, the only country requiring insurance to cover rescue expenses remains Norway. Municipal legislation must, at least, lay down a duty to undertake environmental impact assessment, establish a license or permit scheme for tourist operators, and provide an enforcement mechanism imposing penalties in case of failure to comply with the norms.

In addition, for those countries having important sub-Antarctic areas, domestic legislation can provide a powerful tool to regulate Antarctic tourism since normally the route comprises one or more stops in those places. For instance, New Zealand indirectly regulates visits to the Ross Sea region through legislation placing limits over sub-Antarctic islands (e.g. one ship per day per site, cut-off numbers of 600/150 visitors per annum for large/small sites).

⁵²⁸ IAATO, *supra* note 183, at 7.

⁵²⁹ France, *supra* note 201, at 8.

CONCLUSION

The tourist industry has diverse impacts on Antarctica which make it a serious threat for the environment, science and the functioning of the Antarctic Treaty system. The prospect of ship accidents represents the most urgent matter and the first priority for ATCMs. That done, the redefinition of Antarctic tourism to strengthen its commitment to science, the adoption of the precautionary principle to guard against environmental damages, and the expansion of the jurisdictional scheme to forestall possible conflicts among treaty parties would provide a suitable frame for this industry to develop over the years to come.

BIBLIOGRAPHY

A. BOOKS

ARNFINN JØRGENSEN-DAHL ET AL. THE ANTARCTIC TREATY SYSTEM IN WORLD POLITICS (ARNFINN JØRGENSEN-DAHL & WILLY ØSTRENG EDS., 1991).

C. MICHAEL HALL & MARISKA WOUTERS, POLAR TOURISM: TOURISM IN THE ARCTIC AND ANTARCTIC REGIONS (COLIN MICHAEL HALL & MARGARET E. JOHNSTON EDS., 1995).

CHRISTOPHER C. JOYNER, GOVERNING THE FROZEN COMMONS: THE ANTARCTIC REGIME AND ENVIRONMENTAL PROTECTION (1998).

FRANCESCO FRANCONI ET AL, INTERNATIONAL LAW FOR ANTARCTICA (FRANCESCO FRANCONI & TULLIO SCOVAZZI EDS., 2ND ED. 1996).

GRAHAM COLLIER ET AL, ANTARCTIC ODYSSEY: IN THE FOOTSTEPS OF THE SOUTH POLAR EXPLORERS (CARROL & GRAF PUBLISHERS, INC. 1999).

JORDAN. J. PAUST, INTERNATIONAL LAW AS LAW OF THE UNITED STATES (CAROLINA ACADEMIC PRESS PUBLISHERS, 1996).

LORI FISLER DAMROSH ET AL., INTERNATIONAL LAW: CASES AND MATERIALS (4TH ED. 2001).

MARTHA J. GROOM ET AL., PRINCIPLES OF CONSERVATION BIOLOGY (MARTHA J. GROOM ET AL., EDS., 3RD ED., 2005).

OLAV SCHRAM STOKKE ET AL, GOVERNING THE ANTARCTIC: THE EFFECTIVENESS AND LEGITIMACY OF THE ANTARCTIC TREATY SYSTEM (OLAV SCHRAM STOKKE & DAVOR VIDAS EDS., 1996).

OSCAR SCHACHTER, INTERNATIONAL LAW IN THEORY AND PRACTICE (MARTINUS NIJHOFF PUBLISHERS, 1991).

ROBERT K. HEADLAND, CHRONOLOGICAL LIST OF ANTARCTIC EXPEDITIONS AND RELATED HISTORICAL EVENTS (1989).

THE ANTARCTIC ENVIRONMENT AND INTERNATIONAL LAW (JOE VERHOEVEN ET AL. EDS., 1992).

THOMAS G. BAUER, TOURISM IN THE ANTARCTIC: OPPORTUNITIES, CONSTRAINTS, AND FUTURE PROSPECTS (2001).

B. LAW REVIEWS

Andrew N. Davis, *Protecting Antarctica: Will a Minerals Agreement Guard the Door or Open the Door to Commercial Exploitation?* 23 GEO. WASH. J. INT'L L & ECON. 733, 742 (1990)

Christopher C. Joyner, *Recommended Measures under the Antarctic Treaty: Hardening Compliance with Soft International Law*, 19 MICH. J. INT'L L. 410, 403-6 (1998).

Jennifer Angelini & Andrew Mansfield, *A Call for U.S. Ratification of the Protocol on Antarctic Environmental Protection*, 21 *ECOLOGY L.Q.* 163, 182 (1994).

Karen Scott, *Institutional Developments within the Antarctic Treaty System*, 52 *ICLQ* 473 (2003).

Kees Bastmeijer & Ricardo Roura, *Regulating Antarctic Tourism and the Precautionary Principle*, 98 *AM. J. INT'L L.* 763 (2004).

Martin Lishexian Lee, *A Case for World Government of the Antarctic*, 9 *GONZ. J. INT'L L.* 73, 74 (2005).

S.K.N. Blay, *New Trends in the Protection of the Antarctic Environment: The 1991 Madrid Protocol*, 86 *AM. J. INT'L L.* 377 (1992).

C. TREATIES

Antarctic Treaty, Dec. 1, 1959, 12 U.S.T. 794.

Convention for the Conservation of Antarctic Seals, June 1, 1972, 29 U.S.T. 441, 11 *I.L.M.* 251.

Convention on International Civil Aviation, Dec. 7, 1944, 61 Stat. 1180, T.I.A.S. 1591, 15 U.N.S.T. 295.

Convention on the Conservation of Antarctic Marine Living Resources, May 20, 1980, 33 UST 3476; 19 *ILM*.

Convention on the Regulation of Antarctic Mineral Resources Activities, June 2, 1988, 27 *I.L.M.* 859.

International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 1340 U.N.T.S. 184, 12 *I.L.M.* 1319.

International Convention for the Safety of Life at Sea, Nov. 1, 1974, 32 U.S.T. 47, 1184 U.N.T.S. 278.

International Convention on Load Lines, Apr. 5, 1966, 18 U.S.T. 1857, 640 U.N.S.T. 133, T.I.A.S. 6331.

International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, July 7, 1978, Senate Treaty Doc. No 96-31, 1361 U.N.T.S. 133

Protocol on Environmental Protection to the Antarctic Treaty, Oct. 4, 1991, 30 *I.L.M.* 1455.

United Nations Law of the Sea Convention, Dec. 10, 1982, 1833 U.N.T.S. 3, 21 *I.L.M.* 1261.

D. OTHER DOCUMENTS

26th ATCM, Doc XXVI ATCM/Dec. 5.

Alan D. Hemmings & Ricardo Roura, *A square peg in a round hole, fitting impact assessment under the Antarctic Environmental Protocol to Antarctic Tourism*, 21 *IMPACT ASSESSMENT PROJECT APPRAISAL* 13 (2004).

Alley R.B. et al., *Ice-sheet and sea-level changes*, 30 *SCIENCE* 456 (2005).

Amended Guidelines for Environmental Impact Assessment, 28th ATCM Doc. XXVIII ATCM/Res. 4 (June 17, 2004).

Argentina et al., *Policy Issues Arising from On-site Review of Guidelines for Visitor Sites in the Antarctic Peninsula*, 29th ATCM, Doc., XXIX ATCM/WP02 (2006).

Argentina, *The Application of Existing EIA Procedures to Tourist Activities in Antarctica*, 27th ATCM, Doc., XXVII ATCM/WP 28 (2004).

Argentina, *Tourism development in the Antarctic Peninsula: a regional approach*, 29th ATCM, Doc. XXIX ATCM/IP 31(2006).

Argentina, *Tourist Activities in Antarctica and the Application of Existing EIA Procedures*, ATME, Doc. ATME/Paper 13 (2004).

ASOC & UNEP, *Antarctic Tourism Graphics: An overview of tourism activities in the Antarctic Treaty Area*, 28th ATCM, Doc. XXVIII ATCM/IP 119 (2005).

ASOC, *Coastal Sediment Pollution at Sites Frequently Visited by Tourism Operations*, 26th ATCM, Doc. XXVI ATCM/Information Paper 117 (2003).

ASOC, *Port State Control: An Update on International Law Approaches to Regulate Vessels Engaged In Antarctic Non-governmental Activities*, 26th ATCM Doc. XXVI ATCM/IP 44 (2003).

ASOC, *Port State Jurisdiction: An Appropriate International Law Mechanism To Regulate Vessels Engaged In Antarctic Tourism*, 25th ATCM, Doc. XXV ATCM/IP 63 (2002).

ASOC, *Report of the Antarctic and Southern Ocean Coalition*, 29th ATCM, Doc. XXIX ATCM/IP 107 (2006).

ASOC, *Strategic Environmental Assessment in Antarctica: A Stepping Stone to Madrid Protocol Objectives*, 25th ATCM, Doc. XXV ATCM/IP 82 (2002).

ASOC, *The Antarctic and Climate Change*, 29th ATCM, Doc. XXIX ATCM/IP 62 (2006).

ASOC, *The Case for Concern about Antarctic Tourism*, ATME, Doc. ATME/Paper 20 (2004).

ASOC, *What does Regulation of Commercial Tourism mean?* ATME Doc. ATME/Paper 21 (2004). ATME Final Report, pa. 11(2004).

Australia, *An Analysis of Potential Threats and Opportunities Offered by Antarctic Tourism*, ATME, Doc. ATME/Paper 17 (2004).

Australia, *Establishment of Effective Antarctic Quarantine Controls for Tourism and Non-Governmental Activities*, ATME, Doc. ATME/Paper 14 (2004).

Australia, *Management of Antarctic Non-Government Activities*, 26th ATCM, Doc. XXVI ATCM/WP 13 (2003).

Australia, *Measures to address the unintentional introduction and spread of non-native biota and disease to the Antarctic Treaty Area*, 28th ATCM, Doc. XXVIII ATCM/WP28 (2005).

Australia, *Principles underpinning Australia's approach to Antarctic quarantine management*, 29th ATCM Doc. XXIX ATCM/IP 44 (2006).

Australia, *Protection of Antarctica's Intrinsic Values: Policy on Non-Government Activities*, 26th ATCM, Doc. XXVIII ATCM/WP 38 (2005).

Chile, *Efectos Economicos en las Operaciones de Rescate*, [Economic Effects of Rescue Operations] 26th ATCM, Doc. XXVI ATCM/IP 30 (2003).

COMNAP & IAATO, *The Use of Heavy Fuel in Antarctic Waters*, 27th ATCM, Doc. XXVIII ATCM/IP 67 (2005).

COMNAP, *Information Paper on the Interaction between National Antarctic Programs and Non-Government and Tourism Operations*, 27th ATCM, Doc. XXVII ATCM /IP 14 (2004).

COMNAP, *Information Paper on the Interaction between National Antarctic Programs and Non-Government and Tourism Operations*, ATME, Doc. ATME/Paper 25 (2004).

CONMAP, *Information Paper on the Proposed Antarctic Shipping Guidelines*, 25th ATCM, Doc. XXVATCM/IP 40 (2002).

Debra J. Enzenbacher, *Tourists in Antarctica: Numbers and Trends*, 28 POLAR REC.17 (1992).

Effects of Antarctic Tourism, 4th ATCM, Doc. IV ATCM/Rec. 27 (1966).

Establishment of the Secretariat in Buenos Aires, XXIV ATCM Doc. XXIV ATCM/Decision 01 (Julio 20, 2001).

FINAL REPORT OF THE ANTARCTIC TREATY MEETING OF EXPERTS ON TOURISM AND NON-GOVERNMENTAL ACTIVITIES, ATME, Doc. ATME/FR (2004).

FINAL REPORT OF THE EIGHTEENTH ANTARCTIC TREATY CONSULTATIVE MEETING, 18th ATCM, Doc. XVIII ATCM/FR (1994).

France, *Tourism and Non-Governmental Activities in Antarctica: Deficiencies in the Current Legal Framework*, ATME, Doc. ATME/Paper 23, at 11 (2004).

France, *Usefulness of an Annex VII to the Madrid Protocol regarding the regulation of tourist and non-governmental activities in the Antarctic Treaty area*, 25th ATCM, Doc. XXV ATCM/WP 2 (2002).

Francia, *Creation of Areas of Special Tourist Interest*, 28th ATCM, Doc., XXVIII ATCM/IP 12 (2005).

Germany, *The admissibility of land-based tourism in Antarctica under international law*, 28th ATCM, Doc. XXVIII ATCM/IP 20 (2005).

Germany, *Tourism in Antarctica*, ATME, Doc. ATME/Paper 18 (2004).

Guidelines on Contingency Planning, Insurance and other matters for Tourist and other Non-Governmental Activities in the Antarctic Treaty Area, 27th ATCM Doc. XXVIII ATCM/Res. 4 (June 04, 2004).

IAATO, *6 year Survey of the Dominant Tourist Activities and Trends since the Ratification of the Environmental Protocol and a Five Year Estimated Forecast of Upcoming Activities*, ATME, Doc. ATME/Paper 11 (2004).

IAATO, *An Assessment of Environmental Emergencies Arising from Activities in Antarctica 2002-2003 season*, 16th ATCM, Doc. XXVI ATCM/IP 70 (2003).

IAATO, *An Assessment of Environmental Emergencies Arising from Activities in Antarctica*, 25th ATCM, Doc. XXV ATCM/IP 39 (2002).

IAATO, MARINE WILDLIFE WATCHING GUIDELINES FOR VESSELS & ZODIAC OPERATIONS.

IAATO, *Overview of Antarctic Tourism 2003-2004 Antarctic Season*, 26th ATCM, Doc. XXVI ATCM/IP 63(2003).

IAATO, *Overview Summarizing the Terms of Reference*, ATME, Doc. ATME Paper/12 (2004).

INSTITUTO ANTARTICO CHILENO, INTRODUCCION AL CONOCIMIENTO ANTARTICO (2003).

Insurance and Contingency Planning for Tourism and Non-Governmental Activities in the Antarctic Treaty Area, 27th ATCM, Doc. XXVII ATCM/Measure 1 (2004).

International Hydrographic Organization, *Status of Hydrography and Nautical Cartography in Antarctic and Proposals for its Improvement*, 28th ATCM, Doc. XXVIII ATCM/IP 76 (2003).

International Maritime Organization, *Guidelines for Ships operating in Arctic Ice-Covered Waters*, Doc. IMO/MSC/Circ.1056-MEPC/Circ.399, Part A, Chapter 2 (Dec. 23, 2002).

Italy, *Some Remarks and Proposals on the Antarctic Tourism Issue*, ATME, Doc. ATME/Paper 19 (2004).

IUCN, *Introduction of Non-Native Species in the Antarctic Treaty Area: An Increasing Problem*, 22nd ATCM, Doc. XXII ATCM/IP 53 (1998).

IUCN, *Introduction of Non-native Species, Parasites and Diseases*, 28th ATCM Doc. XXVIII ATCM/IP63 (2005).

Measures, Decisions and Resolutions, 19th ATCM Doc. XIX ATCM/Dec. 1 (May 19, 1995).

New Zealand & United States of America, *Observations on Jon Johanson's South Pole Flight*, ATME, Doc. ATME/Paper 26 (2004).

New Zealand, *"Land-Based" Tourism in Antarctica*, 28th ATCM, Doc. XXVIII ATCM/WP12 (2005).

New Zealand, “*Non-native Species in the Antarctic*” A Workshop, 29th ATCM Doc. XXIX ATCM/IP 46 (2006)

New Zealand, *An Analysis of the Existing Legal Framework for the Management of Tourism and Non-Governmental Activities in Antarctica: Issues, Some Proposals and Comments*, ATME, Doc. ATME/Paper 7 (2004).

New Zealand, *Non-native Species in the Antarctic: Report of a Workshop*, 29th ATCM, Doc. XXIX ATCM/WP13 (2006).

New Zealand, *Practical Experience of an Observer Scheme for Antarctic and Sub-Antarctic Tourism*, ATME, Doc. ATME/Paper 11 (2004).

Norway, *Polar Tourism: Experience Gained and Lessons Learned from Svaldbard*, ATME, Doc. ATME/Paper 24 (2004).

Norway, *Proposal to submit a proposal to IMO to ban the presence of Heavy Fuel Oil (HFO) on board ships south of 60° South*, 28th ATCM, Doc. XXVIII ATCM/WP 41 (2005).

Oceanites Inc., *Key Details Presented in the Compendium of Antarctic Peninsula Visitors Sites, 2d edition: A Report to the United States Environmental Protection Agency* (2003), ATME, Doc. ATME/Paper 6 (2004).

Resolution 4 (2004) of the XXVII ATCM, FINAL REPORT OF THE TWENTY-SEVENTH ANTARCTIC TREATY CONSULTATIVE MEETING, Annex C, 227 (2004).

Robert K. Headland, *Historical Development of Antarctic Tourism*, 21 ANNALS OF TOURISM RESEARCH 269 (1994).

Rosamunde J. Reich, *The Development of Antarctic Tourism*, 20 POLAR REC. 203, 205 (1980).

SCAR, *Biodiversity in the Antarctic*, 29th ATCM, Doc. XIX ATCM/WP 37 (2006).

Sharon A. Robinson et al., *Living on the edge – plants and global change in continental and maritime Antarctica*, 9 GLOBAL CHANGE BIOLOGY 1681 (2003).

Ukraine, *Possibilities for Environmental Changes Monitoring with the Assistance of tourist Ship Cruises Staff/Passenger Photography in Antarctic Peninsula Region*, 27th ATCM, Doc. XXVIII ATCM/IP 100 (2004).

United Kingdom, *Antarctic Shipping Guidelines*, 26th ATCM, Doc. XXVI ATCM/WP 4 (2002).

United Kingdom, *Managing Adventure Tourism: The Need for Enhanced Cooperation among Parties*, ATME, ATME/Paper 9 (2004).

United Kingdom, *Proposals to Improve the Management and Regulation of Antarctic Tourism*, Doc. XXVI ATCM/WP 23 (2003).

United Kingdom, *The Regulation of Adventure Tourism*, ATME Doc. ATME/Paper 8 (2004).

United Kingdom, *Tourism and Self-Regulation: A commentary on IAATO*, ATME Doc. ATME/Paper 4, at 3 (2004).

United Kingdom, *Tourism: Guidelines Related to Shipping. Provisions for non-Treaty Flagged Vessels*, ATME, Doc. ATME/Paper 3 (2004).

United States of America, *Final Report from the Intersessional Contact Group on Cumulative Environmental Impacts*, 26th ATCM, Doc. XXVI ATCM/WP 6 (2003).

United States of America, *U.S. Policy on Private Expeditions to Antarctica and Current U.S. Framework for Regulation of Antarctic Tourism*, ATME, Doc. ATME/Paper 5 (2004).

Use of Heavy Fuel Oil (HFO) in Antarctica, 28th ATCM Doc. XXVIII ATCM/Dec. 8 (June 17, 2005).

F. WEBSITES

<http://canatur.org/estadisticas/01.htm>

<http://doi.gov/news/archives/990218a.html>

<http://library.christchurch.org.nz/Childrens/NZDisasters/Erebus.asp>

<http://members.lycos.nl/oldships/scheepje/y/yapeyu1.htm>

<http://npolar.no/atme2004/>

http://photos.orr.noaa.gov/gallery_4/incidents-10.htm

<http://www.admiraltylawguide.com/conven/stcw1978.html>

<http://www.adventure-network.com/>

<http://www.antarctica.org/UK/Envirn/dia/parcmondial UK.htm>

<http://www.antarcticaxxi.com/>

<http://www.asoc.org/>

<http://www.ats.aq/29atcm/>

<http://www.ats.org.ar/28atcm/>

<http://www.austlii.edu.au/au/other/dfat/treaties/1983/22.html>

<http://www.comnap.aq/publications/guidelines>

<http://www.eia.doe.gov/emeu/cabs/antarctica.html>

<http://www.greenland-guide.gl/icegolf/>

<http://www.histarmar.com.ar/Armada%20Argentina/TransportesNavales/TransportesNavalesbase.htm>

<http://www.iaato.org/>

<http://www.imo.org/home.asp>

<http://www.nzhistory.net.nz/Gallery/police/sound-files.html>

<http://www.sernatur.cl/scripts/sitio/industria03.php>

<http://www.spri.cam.ac.uk/resources/expeditions/>

http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm

<http://www.world-tourism.org/sustainable/IYE/quebec/anglais/quebec-eng.pdf>