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Closing the Frozen Treasure Chest: Antarctica's New Environmental Protocol

Andrew F. Neuman*

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CLOSING THE FROZEN TREASURE CHEST: ANTARCTICA'S NEW ENVIRONMENTAL PROTOCOL

INTRODUCTION

The year 1991 will always be regarded as a historical turning point for the Antarctic Continent. Not only did 1991 represent the thirtieth anniversary of the ratification of the Antarctic Treaty,[1] but it also came to represent an acknowledgment of the importance of the protection of the region's precious environment.[2] In October 1991, representatives of the thirty-nine member nations that signed the 1961 Antarctic Treaty[3] finalized a diplomatic agreement for the comprehensive protection of the environment in Antarctica.[4] The environmental Protocol promises to ensure a fifty year moratorium on all mining and oil exploration in the Antarctic region.[5] In addition, the Protocol provides numerous measures and guidelines that are intended to protect the pristine and fragile environment that is unique to Antarctica.

Despite this diplomatic achievement, flaws do exist. In the original draft agreement, mining activities could only take place after the fifty year mining ban expired; a majority approved amendment passed, including a binding legal regime to regulate mineral activities and finally

1. Antarctic Treaty of 1959, Dec. 1, 1959, 12 U.S.T. 794, 402 U.N.T.S. 71 [hereinafter Antarctic Treaty]. Under the provisions of the Antarctic Treaty, after the expiration of the date of entry, any of the Contracting Parties whose representatives are entitled to participate under Article IX can call a conference of all Contracting Parties to a review of the operation of the Treaty. *Id.* art. XII, para. 2(a).

2. Alan Riding, *Pact Bans Oil Exploration in Antarctica*, N.Y. TIMES, Oct. 5, 1991, at A3. "It's the first time that the international community has formally recognized the finite nature of this planet." *Id.*

3. The nations are divided into two groups. The first group consists of the voting members and is referred to as "Consultative Parties," which includes: Argentina, Australia, Belgium, Brazil, Chile, China, Ecuador, France, Germany, India, Italy, Japan, New Zealand, Norway, Poland, South Africa, the Netherlands, Union of Soviet Socialist Republics, United Kingdom, United States, and Uruguay. The second group of nations are regarded as "Contracting Parties." This group represents nations who have not agreed to all the terms of the Treaty, and includes: Austria, Bulgaria, Canada, Cuba, Czechoslovakia, Denmark, Finland, Greece, Hungary, North Korea, South Korea, Papua New Guinea, Peru, Romania, Spain, and Sweden. In November, 1990, Switzerland gained observer status to the Treaty.

4. Antarctic Treaty Consultative Parties: Final Act of Eleventh Antarctic Treaty Special Consultative Meeting and the Protocol on Environmental Protection to the Antarctic Treaty *opened for signature*, 30 I.L.M. 1455 [hereinafter Protocol]. The Final Act was signed by all Antarctic Treaty Consultative Parties and Contracting Parties identified in the first paragraph of the Final Act, plus Guatemala was also added as a Contracting Party. On October 4, 1991, the Protocol was signed by representatives of the following Consultative Parties: Argentina, Australia, Belgium, Brazil, Chile, China, Ecuador, Finland, France, Germany, Italy, Norway, New Zealand, the Netherlands, Peru, Poland, South Africa, Spain, Sweden, Union of Soviet Socialist Republics, United Kingdom, United States, and Uruguay. It was also signed by the following Contracting Parties: Austria, Canada, Colombia, Greece, Hungary, South Korea, Romania, and Switzerland.

5. *Id.* art. 7.

ratification by three-fourths of the Antarctic Treaty voting nations, including approval by all twenty-six current voting nations.[6] Therefore, the original draft would have provided any of the twenty-six Treaty members with a powerful veto, which may have prevented an individual nation from attempting to remove the mining ban well after the fifty year expiration.[7] A rift emerged, however, as several Treaty nations attempted to seek out other means to subject Antarctica for future mineral activities before the fifty year moratorium would expire and to remove any threat of a veto.[8] Inevitably, this side prevailed and the overall impact of the environmental Protocol was to be diminished.

This Note will examine how this new Protocol could affect the Antarctic environment and the possible problems that may arise throughout the fifty year period. Furthermore, the Note will explore the Protocol's attempt to address the other environmental hazards that have plagued the continent. While no prior mineral convention agreements appear to be effective currently, the Treaty nations may incorporate aspects of these prior conventions into a future mineral agreement. Part I of this Note discusses the steps that were taken to develop the new environmental Protocol, and traces the early mining concerns that arose over Antarctica. Part II describes the history of the Antarctic Treaty system. Part III analyzes the possible emergence of a mineral resource convention, including the strengths and weaknesses of past proposals for such a convention. Part IV reviews the environmental concerns that have been raised regarding Antarctica and the importance of a moratorium on environmentally harmful activity. Part V examines the new Protocol and its various provisions, which ensure the protection of the Antarctic region. Finally, this Note concludes that while the environmental Protocol is an important and necessary development towards maintaining the delicate ecology of the Antarctic, problems that must be addressed remain unsolved. For Antarctica's protective regime to be complete, the Antarctic Treaty members must begin working on a comprehensive minerals agreement that will best protect the continent's environment, should the day ever come that nations decide to tap Antarctica for its potential wealth.

I. BACKGROUND

Between 1982 and 1988, the Antarctic Treaty nations negotiated a Convention for the Regulation of Antarctic Mineral Resource Activities (CRAMRA).[9] The agreement, however, has been criticized and has fallen under a great deal of scrutiny, causing a number of nations to with-

6. *See Delegates Express Disappoint Over New U.S. Mining Proposal at Antarctica Conference*, Int'l Envtl. Daily (BNA), June 18, 1991.

7. *See infra* notes 100-01 and accompanying text.

8. *Id.*

9. Convention on the Regulation of Antarctic Mineral Resource Activities, Nov. 25, 1988, 27 I.L.M. 859 [hereinafter CRAMRA or the Convention].

draw their support from the Convention.[10]

The flip-side of the CRAMRA has been a proposal which would establish Antarctica as a nature reserve or world park,[11] which would best guarantee that Antarctica would be protected from environmental risk.[12] On November 16, 1990, the United States Congress signed into law a mining and drilling ban that protects the Antarctic environment while the Treaty members continue to fashion a comprehensive protocol for the protection of Antarctica.[13] The legislation initially had the support from the Bush administration,[14] but at the diplomatic meeting in Madrid, the following year, the United States delegation proposed an incentive that would allow for mining expeditions to commence before the fifty year moratorium expired.[15] Under the United States proposal, a nation could mine or drill for oil without the consent of all the twenty-six voting members.[16] The proposal was strongly criticized by other Treaty members, as the Madrid meeting reached an impasse on the future of Antarctica.[17] On July 3, 1991, however, President Bush made a major turnaround in policy when he announced that he would sign the fifty year ban on mining in Antarctica and sign the international Protocol to protect the seventh continent.[18]

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10. *See Australian PM Against Antarctic Mining*, XINHUA (NEW CHINA) NEWS SERVICE, May 4, 1989, *available in* LEXIS, Nexis Library, Wires File. *See also* Deborah C. Waller, Note, *Death of a Treaty: The Decline and Fall of the Antarctic Minerals Convention*, 22 VAND. J. TRANSNAT'L L. 631, 659-67 (1989) (Australia and France removed their support from CRAMRA in 1989, and it was this departure in consensus that inevitably sunk the Convention as an enforceable agreement).

11. Here also, Australia and France have been the most active in trying to convince Treaty members to adopt the world park plan. *See* Colin Deihl, *Antarctica: An International Laboratory*, 18 B.C. ENVTL. AFF. L. REV. 423, 444-46 (1991); Ellen S. Tenenbaum, Note, *A World Park in Antarctica: The Common Heritage of Mankind*, 10 VA. ENVTL. L.J. 109, 129 (1990).

12. World park proponents make the argument that guaranteeing that no party will benefit from possible resources in Antarctica, would place a check on all members to make sure that no other party benefit from the continent's potential riches. *See infra* notes 74-77 and accompanying text.

13. Antarctic Protection Act of 1990, 16 U.S.C.A. § 2461 (West Supp. 1991).

14. 26 WEEKLY COMP. PRES. DOC. 1840-41 (Nov. 16, 1991).

15. *See infra* notes 100-01 and accompanying text.

16. The United States would eventually get their way through the "walkaway" clause in the Protocol, *supra* note 4, art. 25, para. 5(b), *see infra* notes 112-15; *see also* Paul Hunt, *Green Shield for the Ice Continent; Worldwide Pressure could Impose a 50-year Mining Ban in Antarctica*, THE INDEPENDENT, June 17, 1991, *available in* LEXIS, Nexis Library, Currnt File.

17. *Id.*

18. President Bush failed to give a reason for this reversal in United States policy. *See U.S. Agrees to Sign New Antarctic Minerals Agreement*, REUTERS, July 3, 1991, *available in* LEXIS, Nexis Library, Wires File; Larry B. Stammer, *Bush Alters Stand, OKs Antarctic Mining Ban*, L.A. TIMES, July 4, 1991, at A26; Malcolm W. Browne, *U.S. Agrees to Protect Minerals in Antarctica*, N.Y. TIMES, July 6, 1991, at A5.

II. REGULATION OF ANTARCTICA

A. *Antarctic Treaty System*

Despite the harsh realities of nature that the Antarctic region possesses, the continent has captured the interest of man since the late eighteenth century.[19] When the 1957-58 International Geophysical Year (IGY) was proclaimed,[20] it was a significant step as nations curbed their prior emphasis from exploration to a new policy of scientific discovery.[21] This shift in behavior resulted in the formation of the Antarctic Treaty.[22] The Treaty is dedicated to preserving the region as a research station with an emphasis on free scientific exchange.[23] Furthermore, the original members agreed that Antarctica be used for peaceful purposes,[24] that it be open to inspection of all areas,[25] and to ban all nuclear waste and nuclear explosions.[26]

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19. At first, visitors to the continent were not pleased by their discovery. Captain James Cook predicted that "the world will derive no benefit [from Antarctica]," in 1777. DEBORAH SHAPLEY, THE SEVENTH CONTINENT: ANTARCTICA IN A RESOURCE AGE 7 (1985). Over a hundred years later, Robert Falcon Scott, upon arriving at the South Pole wrote, "Great God! this is an awful place." *Id.* at 1. By 1820, however, British, Norwegian, and American sealers had established a prosperous fur seal trade off the Antarctic Peninsula. Most of the seal hunting occurred in the region north of the 60 degree south latitude area. *Id.* at 7. The industry of skinning seals was so successful that by 1830 the southern fur seal was nearly extinct. *Id.* Throughout the 1840s numerous expeditions were conducted that lead to the discovery and charting of the Ross sea and the Great Ice Barrier. *Id.* at 8-9. The 19th century saw the emergence of temporary settlements on the Antarctic mainland to support the whaling industry. Douglas M. Zang, Note, *Frozen in Time: The Antarctic Mineral Resource Convention*, 76 CORNELL L. REV. 722, 724 (1991). In addition, a number of expeditions were dispatched to Antarctica as the desire grew to conquer the final continent on the planet. F.M. AUBURN, ANTARCTIC LAW AND POLITICS 2-3 (1982).

20. The IGY was a cooperative international effort from July 1, 1957 to December 31, 1958 to increase the scientific understanding of the Earth and its environment. During the period much field activity occurred in Antarctica with 12 nations establishing 60 research stations. *See* SHAPLEY, *supra* note 19, at 83.

21. SHAPLEY, *supra* note 19, at 16.

22. The twelve original signatories Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, Union of Soviet Socialist Republics, United Kingdom, and the United States, implemented a number of discussions which resulted in the International Conference on Antarctica, held in Washington, D.C., 1959. *See* Antarctic Treaty, *supra* note 1. The meeting lead to the formation of the Antarctic Treaty. *Id.* Following the ratification by the twelve nations, the Treaty entered into force on June 23, 1961. *Id.*

23. Antarctic Treaty, *supra* note 1, preamble. *See* Deihl, *supra* note 11 at 433.

24. The Treaty provides that "Antarctica shall be used for peaceful purposes only. 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 weapon." Antarctic Treaty, *supra* note 1, art. I, para. 1.

25. "Each observer . . . shall have complete freedom of access at any time to any or all areas of Antarctica." *Id.* art. VII, para. 2. The Article also includes inspections of "all stations, installations and equipment within those areas, and all ships and aircrafts at points of discharging or embarking cargoes or personnel in Antarctica." *Id.* art. VII, para. 3.

26. "Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited." *Id.* art. V, para. 1.

The Antarctic Treaty has, since its inception, acted as both a government and a legal regime for the continent.[27] It has achieved a balance in attempting to resolve some of the region's underlying political problems - such as the rivalry among several nations with announced territorial claims,[28] and political disputes that may have existed between the Treaty members.[29] The spirit of the Antarctic Treaty also has lead to the development of other agreements between the members.[30] In addition, numerous recommendations have been adopted by the member nations.[31]

27. When originally proposed, the Treaty had somewhat narrow aspirations, focusing mainly on the growth of scientific research in the 1950s. John J. Barcelo III, *The International Legal Regime for Antarctica*, 19 CORNELL INT'L L.J. 155, 157 (1986). However, as the years passed and the importance of the future potential of the continent was realized, the Treaty became far more comprehensive, dealing with issues like sovereignty, civil and criminal jurisdiction, conservation, military matters, and ownership of the region's minerals. *See* Zang, *supra* note 19, at 726-27.

28. During the 1950s, seven nations - Argentina, Australia, Chile, France, New Zealand, and the United Kingdom - had claimed regions of Antarctica based on the legal arguments of discovery, occupation, geographic proximity, and historic rights. *See* SHAPLEY, *supra* note 19, at 68. The British, Chilean, and Argentine claims overlapped one another. *Id.* Throughout the same period, Belgium, Japan, South Africa, the Soviet Union, and the United States were operating scientific stations on the continent, but refrained from making any territorial claims. *Id.* at 67-68, 78-82. In addition, these nations refused to recognize the territorial claims made by the others. *Id.* at 77-82. Article IV of the Treaty helped in easing the sovereignty issue by ignoring it. *See* Antarctic Treaty, *supra* note 1, art. IV. The Article helped in achieving a cooling between the claimants, non-claimants, the superpowers, and the developed and developing nations.

29. The biggest test for the Treaty's durability arose during the 1982 Falkland/Malvinas war between Argentina and the United Kingdom. The war took the two nations to the very border of the Antarctic demilitarized zone which starts at the area south of the 60 degree South Latitude mark. SHAPLEY, *supra* note 19, at 17; *see* Antarctic Treaty, *supra* note 1, art. VI. Argentina was especially careful in making it a point not to cross the line and risk anger and dissent from the other Treaty members. SHAPLEY, *supra* note 19, at 17.

30. *See e.g.*, Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), May 20, 1980, 33 U.S.T. 3476, 19 I.L.M. 841 (entered into force April 7, 1982). The agreement supports an ecosystem method for the preservation and management of living beings within the oceans surrounding Antarctica. It applies measures to ensure that the harvesting of certain marine species, like finfish or krill, is done in a manner which will not disrupt the ecological food chain for other dependent species. Convention for the Conservation of Antarctic Seals (CCAS), June 1, 1972, 29 U.S.T. 441, 11 I.L.M. 251 (entered into force Mar. 11, 1978). The CCAS attempted to limit the vulnerability of six seal species in the Antarctic region to commercial exploitation. The Agreed Measures for the Conservation of Antarctic Flora and Fauna, June 2-13, 1964, 17 U.S.T. 996, *modified in* 24 U.S.T. 1802. The agreement outlines specific mechanisms to ensure that any activity taken in the Antarctic region will not harmfully affect the area's native plant life, birds, and mammals.

31. Since the ratification of the Treaty more than 160 recommendations have been adopted by the members covering topics such as environmental issues, meteorology, tourism, and telecommunications. Christopher C. Joyner, *The Evolving Antarctic Legal Regime*, 83 AM. J. INT'L L. 605, 606 (1989). In addition, the new 50-year mining ban includes new regulations for wildlife protection, waste disposal, and marine pollution. *See infra* notes 105-44 and accompanying text.

B. *Early Mining Concerns*

While no gold rush began when scientists in 1973 discovered traces of hydrocarbons in Antarctica,[32] the parties realized that a new hidden wealth may lie under the sheets of ice. Treaty powers recognized that a real find in Antarctica could potentially create great destabilization within the region.[33]

Under the language of the Treaty, members are required to refrain from actions that could endanger the Antarctic environment without extensive prior study.[34] At the ninth consultative meeting in London in 1977, the Treaty powers adopted, in Recommendation IX-I on Antarctic minerals, a policy referred to as "voluntary restraint."[35] The members agreed to "urge their nationals and other States to refrain from all exploration and exploitation of Antarctic mineral resources while making progress towards the timely adoption of an agreed regime concerning Antarctic mineral resource activities."[36] This agreement, however, did not quash the desire for nations to study certain areas for potential economic activity.[37] Throughout the same period, the Treaty members acknowledged that no clear mechanism for environmental protection existed.[38]

III. MINERAL RESOURCE CONVENTION EMERGES

While the acceptance of a fifty year mining and drilling moratorium for the Antarctic continent has apparently put the CRAMRA to rest, it

32. In 1973, gaseous hydrocarbons were discovered in three of the four holes drilled in the Ross Sea continental shelf by the U.S. scientific drilling ship, the *Glomar Challenger*. *See* SHAPLEY, *supra* note 19, at 124. The appearance of hydrocarbon gases does not mean that commercial oil or gas deposits exist, as a result, the drilling expedition was abandoned. *Id.*

33. At the time of the *Glomar* findings, the world was faced with a sudden rise in the price of Middle Eastern oil. Nations began to look elsewhere for areas that could satisfy their energy needs. After 1973, the potential of the presence of hydrocarbons in Antarctica brought about political implications. The Treaty powers recognized that jurisdiction had to be asserted over the development of extracting mineral resources since the Treaty made no mention of it, and to protect the Antarctic environment from any sudden rush to develop the region. *Id.* at 124-25.

34. "Each of the Contracting Parties undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purpose of the permanent Treaty." Antarctic Treaty, *supra* note 1, art. X.

35. SHAPLEY, *supra* note 19, at 139.

36. *Id.*

37. Despite the agreements, by the end of the decade, vessels of several nations were making scientific surveys of the Antarctic continental shelf for possible off-shore oil exploration. *Id.* at 139-40.

38. In Norway, at the eighth consultative meeting, the members asked SCAR to assess the environmental impact of exploration and exploitation on the continent. *Id.* at 140; *see infra* note 63 and accompanying text. At SCAR's fourteenth meeting in Argentina in 1976, a group for the the Environmental Impact Assessment of Mineral Resource Exploration and Exploitation in Antarctica was established. SHAPLEY, *supra* note 19, at 140.

nonetheless, serves as an important lesson as to what a future mineral convention may require. An extensive study of CRAMRA is not required, a brief overview of the Convention, a look to its strengths and weaknesses and what, if any, of its provisions may be salvaged in a future minerals convention, does deserve some examination.

A. *Origin of CRAMRA*

When CRAMRA made its appearance in 1982,[39] it represented an effort by the Antarctic Treaty members to reach needed solutions and agreements regarding potential mineral exploitation.[40] The Convention consumed six years of negotiations, but was finally completed on June 2, 1988.[41] Throughout the same period, the Parties reaffirmed their commitment to the "voluntary restraint" policy in the Final Act of the Fourth Special Antarctic Treaty Consultative Meeting on Antarctic Mineral Resources.[42]

CRAMRA initially received the support of all the Consultative members, but it nonetheless required the ratification of sixteen of the twenty members.[43] While the regime set up by CRAMRA does not contain a detailed mining code, it does set down basic regulations for mineral exploitation, and at the same time, leaves the creation of more precise guidelines to the new institutions which the Convention has enacted.[44]

B. *Overview of CRAMRA*

CRAMRA reflects the Parties' belief that the effective regulation of Antarctic mineral resource activities will further the interest of the entire international community.[45] The preamble acknowledges that "Antarctic mineral resource activities will adversely affect the Antarctic environment or dependent or associated ecosystems."[46] This recognition lead to the Parties assertion that the "associated ecosystems must be a basic con-

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39. CRAMRA, *supra* note 9.

40. This was partly due to the fact that the administration of a [mineral resource] regime of this type is more complex than that of fishery regimes or of regimes for the conservation of living resources and implies greater institutional demands, particularly in view of the fact that institutions will have important powers and competence in dealing with the decision to authorize mineral activities, approve contracts, and supervise the political operation of the regime.

FRANCISCO ORREGO VICUNA, ANTARCTIC MINERAL EXPLOITATION: THE EMERGING LEGAL FRAMEWORK 356 (1988).

41. CRAMRA, *supra* note 9.

42. *See* Deihl, *supra* note 11, at 439 n.127. The Final Act while continuing the policy of voluntary restraint, goes further by prohibiting prospecting. *Id.*

43. CRAMRA, *supra* note 9, art. 63. The 16 members must include each of the claimant states. Furthermore, at least five developing and 11 industrialized nations must accept it. *Id.*

44. Deihl, *supra* note 11, at 439-40; *see infra* notes 48-52 and accompanying text.

45. CRAMRA, *supra* note 9, preamble. *See* Andrew N. Davis, Note, *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, 742-44 (1990).

46. CRAMRA, *supra* note 9, preamble.

sideration in decisions taken on possible Antarctic mineral resource activities."[47]

CRAMRA established three administrative branches which include: the Antarctic Mineral Resource Commission,[48] the Antarctic Mineral Resource Regulatory Committee,[49] and the Scientific, Technical and Environmental Advisory Committee.[50] The three bodies were intended to work together during the various stages of mineral discovery through the exploitation process.[51] These governing branches attempted to create a regulatory system that specifically established binding legal obligations among the Parties and mandatory compliance during any and all stages of possible mineral exploitation.[52]

C. *Strengths and Weaknesses of CRAMRA*

Proponents of CRAMRA argue its necessity on the basis that failure to have any type of system would result in unacceptable environmental risks.[53] Since the language of the Antarctic Treaty does not prohibit mining exploitation, some type of governing mechanism is needed to keep the Parties in check.[54] In addition, failure to agree on a uniform system which has the consensus of the members may lead to a breakdown of the entire Treaty system.[55]

CRAMRA as a governing system would be the best guarantee to prevent such consequences. One of CRAMRA's greatest strengths is that it requires a consensus by the minerals regulatory regime for all Exploration and Development Permits and attendant activities.[56] Such a requirement strongly conveys to interested parties that only environmentally sound proposals are going to be considered. This set-up acts as a watchdog approach over all mineral resource activity. Furthermore, applying CRAMRA's regulations to commercial operators is likely to make interested parties think twice before they decide to set up shop in the region.[57]

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47. *Id.*
48. *Id.* art. XVIII, para. 1.
49. *Id.* art. XXIX, para. 1.
50. *Id.* art. XXIII, para. 1.
51. *See supra* notes 48-50 and accompanying text.
52. *See* Davis, *supra* note 45, at 744.
53. Deihl, *supra* note 11, at 446.
54. The Treaty permits mineral exploitation activities so long as such activities are consistent with the fundamental principles of the Treaty. Antarctic Treaty, *supra* note 1, art. X; *see supra* note 34 and accompanying text.
55. Advocates of CRAMRA argue that in the absence of the Convention, not only will unmonitored oil and mining exploration take place, but disputes over sovereignty and claims on potential oil sites could arise, causing havoc to the entire Treaty process. Deihl, *supra* note 11, at 446.
56. CRAMRA, *supra* note 9, art. XXII.
57. CRAMRA holds operators strictly liable for any damage to the Antarctic environment or to its dependent or associated ecosystems. *Id.* art. I, para. 15. *See id.* art. VIII, para. 2(a)-(d), and art. VIII, para. 5.

The primary criticisms of CRAMRA revolve around the notion that it represents more of a "miners charter"[58] than an instrument that will insure protection for the Antarctic environment. While the Convention has environmental safeguards,[59] it is possible that Treaty members will not enforce them.[60] Antarctic Treaty members have unfortunately had a poor history of enforcing environmental agreements when there has been little, if any, pressure to develop Antarctica's mineral resources. When and if oil or other valuable resources are discovered, it is likely that the Parties will first try to fight over who is going to get their fair share and leave the discussions for preserving the environment for later.

Another difficulty with CRAMRA lies in its provisions on liability.[61] In addition, CRAMRA includes a variety of ambiguous terms that will only be interpreted when an actual crisis arises.[62] A valid fear exists that ambiguous terms will be given ineffectual interpretations should there be some type of oil discovery in the region and the Parties are overtaken by a sense of gold fever.

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58. During the CRAMRA negotiations various environmental groups, including Greenpeace, the Cousteau Society, the Worldwide Fund for Nature, and the Antarctic Southern Ocean Coalition, led an aggressive drive against CRAMRA to raise international public awareness of threats to the Antarctic environment. They regarded CRAMRA as a miners charter. *See* Hunt, *supra* note 16.

59. CRAMRA, *supra* note 9, art. IV, para. 2 states:

> No Antarctic mineral resource activity shall take place until it is judged, based upon assessment of its possible impacts on the Antarctic environment and on dependent and on associated ecosystems, that the activity in question would not cause:
>
> (a) significant adverse effects on air and water quality;
>
> (b) significant changes in atmospheric, terrestrial or marine environments;
>
> (c) significant changes in the distribution, abundance or productivity of populations of species of fauna and flora;
>
> (d) further jeopardy to endangered or threatened species or populations of such species; or
>
> (e) degradation of, or substantial risk to, areas of special biological, scientific, historic, aesthetic or wilderness significance.

60. Throughout the history of the Antarctic Treaty, the member nations have tried to avoid dissent among one another. Thus, it is arguable that if one party would ignore the environmental Protocol, it is possible that other members would look the other way. J.R. ROWLAND, *The Treaty Regime and the Politics of the Consultative Parties, in* THE ANTARCTIC LEGAL REGIME at 14-15 (Christopher C. Joyner & Sudhir K. Chopra eds. 1988).

61. Under the provisions of CRAMRA, a multinational corporation can choose which nation will be its sponsoring state. Because the sponsoring state is responsible for ensuring that an operator complies with CRAMRA's requirements, an operator may try to choose those sponsoring states that interpret the Convention leniently. Developing nations, eager to establish a foothold in Antarctica, may be inclined to pass lax rules to attract operators. Deihl, *supra* note 11, at 453.

62. For example, under Article IV, no mineral activity is allowed if the activity will cause significant adverse effects on air and water quality. Article IV also states that the Comission should not make decisions about Antarctica mineral resource activities without adequate information. Unfortunately, terms such as "significant," "adequate," and "appropriate" are never defined. Instead, the parties are supposed to interpret the terms if a conflict arises. *Id.*

The potentially dangerous loopholes that CRAMRA was unable to close are perhaps the greatest factors that lead to its demise. While CRAMRA appears to have failed in its goal of providing a governing regime that would establish regulations and operations for mineral resource activities on the Antarctic continent and surrounding region, it does act as an important stepping stone for a future minerals convention. Should the Treaty members one day decide to lift the moratorium, or some Party walks away from its obligations under the Protocol, some type of minerals resource regime will need to exist. The Treaty members need only fill in the gaps that CRAMRA failed to provide for.

IV. ENVIRONMENTAL PROTECTION FOR ANTARCTICA

The Treaty members realized the importance of preserving the pristine and relatively untouched region of the Antarctic environment by drawing up protective measures long before such issues became an international matter.[63] Antarctica's importance to the planet has not yet been fully understood. Only recently have scientists begun to realize the importance of Antarctica's presence as a balancing force in the global environment.[64] The surrounding waters off the continent are critically important to the world's food chain. The Southern Ocean is home to the

63. For instance, the Scientific Committee of Antarctic Research (SCAR) was established. SCAR is composed of various members from nations who are actively participating in scientific research in Antarctica. In 1961, rules pertaining to the protection of the Antarctic environment were drafted. They included: that flora and fauna not native to Antarctica should not be introduced on the continent; pilots should not fly helicopters too close to bird rookeries; firearms should not be detonated near colonies of seals; dogs should not run free; and there should be no discharge of oil in any manner that hurts plants and animals. SHAPLEY, *supra* note 19, at 105-06; *see* Christopher C. Joyner, *The Antarctic Legal Regime: An Introduction*, *in* THE ANTARCTIC LEGAL REGIME, *supra* note 60, at 5. Throughout the 1970's, the members strengthened their commitment to the protection of Antarctica's environment, which included their declaration that "[t]he Consultative Parties recognise their prime responsibility for the protection of the Antarctic environment from all forms of harmful human interference." SHAPLEY, *supra* note 19, at 108. The dedication of the Consultative Parties in attempting to meet the need of Antarctic environmental protection, has not always been successful. There have been reports on various environmental violations by the numerous scientific bases on the continent which continue to remain a threat. *See*, Laura Clarke, *Pollution at Science Posts: The Thrashing of Pristine Antarctica*, S.F. CHRON., July 2, 1991, at A1. In addition, the 1989 oil spill of an Argentine tanker near the Antarctic Peninsula poured more than 200,000 gallons of diesel fuel and caused incalculable environmental harm. *See generally*, Mary L. Canmann, Comment, *Antarctic Oil Spills of 1989: A Review of the Application of the Antarctic Treaty and the New Law of the Sea to the Antarctic Environment*, 1 COLO. J. INT'L ENVTL. & POL'Y 211 (1990).

64. Antarctica offers scientists ideal opportunities to study global environmental problems, including sea-level changes, global climate, and global levels of atmospheric constituents such as ozone . . . Antarctica's isolation from the rest of the planet, combined with the harsh climate, makes it relatively unaffected by man. Therefore, it provides a base line for studies on global pollution of various kinds.

Deihl, *supra* note 11, at 431.

krill population.[65] All species residing in the Southern Ocean depend on krill for their survival.[66] A sudden decrease in krill population as a result of an oil spill or other environmental catastrophe could lead to a decline in the existence of krill-dependent animal life worldwide.[67]

While the new moratorium should put environmental groups at ease for some time and allow governments and industry to develop environmentally sound practices of mineral extraction, concerns still exist. Antarctica's greatest environmental risk is that of oil development and transport. The effect of an offshore oil spill in the region would be disastrous. "The lighter hydrocarbons in the oil would evaporate slowly while the heavier ones sank, possibly coating the underside of the sea and pack ice . . . where many small organisms live."[68] The transport of oil has already proven to be an enormous environmental hazard.[69] While oil spills are one threat, inability to stop spills or implement clean-up operations are another.[70] The failure to resolve these and other environmental issues has already subjected the continent to environmental harm.[71]

A. *The World Park Plan*

The risk of oil spills and other environmental threats led to the proposal that Antarctica be established as a world park.[72] The suggestion that if nobody benefits, then we all benefit, is a strong argument for preserving the Antarctic wilderness and its role as a scientific laboratory. The arguments for the creation of a world park revolve around the notion that

65. Krill are a shrimp-like marine crustacean. Christopher C. Joyner, *The Southern Ocean and Marine Pollution: Problems and Prospects*, 17 CASE W. RES. J. INT'L L. 165, 169 (1985). The CCAMLR regulates the harvesting of krill. *See supra* note 30 and accompanying text.

66. Deihl, *supra* note 11, at 432.

67. Joyner, *supra* note 65, at 174.

68. SHAPLEY, *supra* note 19, at 142.

69. *See supra* note 64 and accompanying text.

70. "Mr. President, a small oil-spill from an Argentine tanker . . . occurred 2 years ago . . . and the oil is still spilling out. Nobody can get to it to fix it." 137 CONG. REC. S8480 (daily ed. June 24, 1991) (statement of Sen. Gore).

71. A brief list of man's impact on the environment in the Antarctic region has included the construction of a science base during the middle of a penguin breeding area, the establishment of a base only 300 yards from the rookeries of eight bird species, the dumping of garbage and the discharge of sewage into the surrounding seas. *See* F.M. AUBURN, *supra* note 19, at 268-69.

72. The world park idea originated at the Second World Conference on National Parks in 1972. Deihl, *supra* note 11, at 444. The participants unanimously agreed to support Antarctica as an international park. Allan Young, Note, *Antarctic Resources Jurisdiction and the Law of the Sea: A Question of Compromise*, 11 BROOKLYN J. INT'L L. 44, 65 n.103 (1985). The park would allow for the continued presence of scientific bases and an Antarctic Environmental Protection Agency would be established to oversee all types of human activity in the region. Deihl, *supra* note 11, at 444-45. The proposal was only supported by a handful of groups, when in 1989, France and Australia announced their support for the plan. John Lancaster, *U.S.-Backed Antarctic Pact Criticized: Prospecting Could Pave Way to Ecologocal Disaster, Opponents Say*, WASH. POST, Sept. 30, 1989, at A17. This decision lead to the subsequent demise of CRAMRA, because the Convention required the support by the two nations. Deihl, *supra* note 11, at 445.

mineral activities are incompatible with the principles of wilderness and wildlife protection.[73]

The plan has run into criticism. The United Kingdom, one of the biggest critics of a world park establishment, recognized that "[i]f the economic pressures came on and if the demand was there, the people would simply brush the world park concept aside and you would have a free-for-all in Antarctica which would destroy the environment for ever."[74] In addition, proponents for the world park proposal have yet to offer a detailed plan as to how the operation would be administered.[75]

V. THE MORATORIUM PROPOSAL

A. *Past Moratorium Proposals*

It is quite possible that the Antarctic continent and its surrounding area might have been zoned against all mining development forever if the permanent moratorium, frequently discussed in 1973-75, had been adopted by the Treaty members.[76] As the thirtieth anniversary of the Antarctic Treaty was approaching, the member nations realized that some type of agreement with regard to Antarctica's future was going to be decided. CRAMRA was nearly dead and some nations remained hesitant to permanently proclaiming Antarctica as a world park. Shortly before the thirty year expiration date of the Antarctic Treaty, nations began to scramble in attempting to enact an environmental protocol which would eventually lead to the fifty year mining moratorium.

B. *Discussions Over a Moratorium*

New proposals and initiatives for Antarctica's future emerged when the government of New Zealand announced two steps to safeguard the environmental protection of the continent.[77] The first step included providing a protocol for the various steps of different types of protection that the continent required in regards to waste disposal, oil spills, the effects of tourism, improved monitoring arrangements and environmental impact assessment procedures.[78] The second step consisted of the establish-

73. *See* Tenenbaum, *supra* note 11, at 126.

74. *Antarctica World Park Plan Rejected*, PRESS ASS. NEWSFILE, April 19, 1991, *available in* LEXIS, Nexis Library, Wires File.

75. *Id.*

76. During the eighth consultative meeting, held in Norway in 1975, a majority of the Treaty powers seemed to favor a permenant moratorium. The Soviet Union was a major sponsor of a morotorium, apparantly because they were hoping to catch up with other industrialized powers in developing new oil drilling technology. The United States, however, stood practically alone in opposing a morartorium. SHAPLEY, *supra* note 19, at 160. The failure to reach a complete consensus, however, left the Parties with their original 1972 recommendation of voluntary restraint. *Id.*

77. *New Initiatives by New Zealand on Antarctic Environmental Protection*, XINHUA (NEW CHINA) NEWS SERVICE, July 6, 1990, *available in* LEXIS, Nexis Library, Wires File.

78. *Id.*

ment of a long-term, legally binding moratorium for Antarctica.[79]

Throughout the same period, the United States legislature was also working on the Antarctic Protection Act of 1990.[80] The Act supports the proposal of a ban on mineral activity in Antarctica,[81] and the message that strong environmental protection for the continent be preserved.[82] In addition, the language of the Act demonstrates that the United States Congress has rejected CRAMRA.[83] During the drafting of the Act, the House and the Senate cautioned that CRAMRA, or a revised version of it, would not satisfy the provisions of the Act.[84]

The power of the Act is found in Section IV. This section makes it "unlawful for any person to engage in, finance, or otherwise knowingly provide assistance to any Antarctic mineral resource activity."[85] The Act recognized that the ban would stay in effect until a new agreement could be negotiated by the Antarctic Treaty Consultative Parties. The resulting agreement would provide an indefinite ban on Antarctic mineral resource activities until that agreement received approval through Senate ratification.[86] Furthermore, through the section Congress is declaring that the position of the United States is currently against the development of a mineral regime in Antarctica, and that it is in support of an indefinite ban for all nations on Antarctic mineral resource

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79. *Id.*

80. Antarctic Protection Act of 1990, 16 U.S.C.A. § 2461 (West Supp. 1991).

81. *Id.* § 2(b) para. 2 "prohibit prospecting, exploration, and development of Antarctic mineral resources by United States citizens and other persons subject to the jurisdiction of the United States."

82. *Id.* § 2(b) para. 1, the purpose of the Act is to "strengthen substantially overall environmental protection of Antarctica."

83. *Id.* § 2(a) para. 5 "[CRAMRA] does not guarantee the preservation of the fragile environment of Antarctica and could actually stimulate movement toward Antarctic mineral resource activity."

84. One of the most important findings in [§ 2, para. 5 of the Antarctic Protection Act] . . . essentially says that . . . CRAMRA is unacceptable as an international framework to guarantee environmental protection of Antarctica. In effect, the Congress is rejecting CRAMRA, and supporting a new agreement which provides permanent, long-term protection for Antarctica. Some have argued that CRAMRA provides environmental protection and includes an indefinite ban on mineral activity. The Congress has rejected this argument . . . because CRAMRA could ultimately lead to the commercial exploitation of the continent. CRAMRA provides a mechanism for Antarctic mineral resource development, and any agreement with such a mechanism is inconsistent with the findings, purpose, and provisions of this legislation. Complete and permanent protection from the ravages of commercial development can only be guaranteed if we reject the idea of mineral development, not provide for its possibility, or facilitate its existence.

136 CONG. REC. H12987, H12988-89 (daily ed. Oct. 26, 1990) (statement of Rep. Conte).

85. Antarctic Protection Act of 1990, 16 U.S.C.A. § 2461 (West Supp. 1991).

86. Pending a new agreement among the Antarctic Treaty Consultative Parties in force for the United States, to which the Senate has given advice and consent or which is authorized by further legislation by the Congress, which provides an indefinate ban on Antarctic mineral resource activities, it is unlawful for any person to engage in, finance, or otherwise knowingly provide assistance to any Antarctic mineral resource activity.

Id. § 4.

activities.[87]

Following the Act, a joint resolution was signed by Congress calling for the United States to encourage immediate negotiations toward a new agreement among the Antarctic Treaty Consultative Parties for the full protection of Antarctica as a global ecological commons.[88] On November 16, 1990, the Act was signed into law.[89] In November, 1990, in Viña del Mar, Chile, the Treaty members met to discuss the issue of an environmental accord that would best preserve Antarctica.[90] The conference, however, failed to achieve its goals of reaching an agreement on environmental impact assessment procedures, as a clear rift developed as to what direction Antarctica's future was to go.[91]

The negotiations did, however, resolve two important matters. First, the majority of member nations acknowledged that CRAMRA had no room in Antarctica's future and was not a viable alternative in its present form.[92] Secondly, the members agreed that a major collective decision needed to be approved that would protect the environmental needs of the continent.[93] In addition, the opening session marked the recognition and granting of observer status to the Antarctic Ocean and Southern Ocean Coalition (ASOC).[94] Finally, Switzerland became the Treaty's thirty-ninth member with observer status, while the Netherlands and Ecuador became full consultative parties.[95]

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87. *Id.*

88. Antarctic Treaty - Global Ecological Commons, Pub. L. No. 101-620, 104 Stat. 3340 (1990).

89. Upon agreeing with the Act's provisions, President Bush wrote:

> The Antarctic continent is a vast, unspoiled land whose associated and dependent ecosystems provide habitat for many unique species of wildlife and a natural laboratory from which to monitor critical aspects of stratospheric ozone depletion and global climate change. There is a need to better protect Antarctica's fragile environment by concluding a new environmental protection agreement to supplement the existing protections provided by the Antarctic Treaty of 1959 . . . I am signing the legislation because it was amended in a manner that can be considered consistent with my Administration's position on Antarctic issues. This position includes advocacy of a strong environmental protection agreement to supplement the Antarctic Treaty.

See 26 WEEKLY COMP. PRES. DOC. 1840-41 (Nov. 16, 1990).

90. *See* Hunt, *supra* note 16.

91. The environmental impact assessment procedure is a process under which all human activity in Antarctica must be assessed before it proceeds. *Id.*

92. France, Australia, and New Zealand, backed by Belgium, Finland, Italy, Luxembourg, and Sweden supported a permanent ban, while the United Kingdom, the United States, and Norway believed a binding moratorium on mining, followed by a regulatory framework, would be better suited to protect Antarctica. Delegations from Spain and Denmark supported a protocol agreement rather than a convention, so long as it banned mining permanently, because it would be faster to negotiate and involve less bureaucracy. Japan stood alone at the conference in its continued support for CRAMRA. *Id.*

93. Anthony Boadle, *Antarctic Nations Negotiate Environmental Protection Accord*, REUTERS, Nov. 20, 1990, *available in* LEXIS, Nexis Library, Wires File.

94. ASOC is an umbrella organization consisting of 200 environmental groups from 35 nations. *Id.*

95. *Id.*; *see supra* note 3 and accompanying text.

C. *Overcoming the Impasse*

In April 1991, with the split on a permanent mining ban still unresolved, the Treaty members held a conference in Madrid, Spain, attempting to heal the rifts before the thirtieth anniversary signing of the Treaty.[96] During that period a few important changes took place. First, the United Kingdom made a significant move away from the support for a mineral convention.[97] Secondly, Japan shifted its policy of preserving a mining option to a proposal for an indefinite moratorium.[98] Finally, United States delegates' failure to support an extensive moratorium brought about congressional dissent.[99]

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96. *State Department Says Priority in Meeting on Antarctica to Heal Split Over Mining*, Int'l Envtl. Daily (BNA), March 6, 1991.

97. Foreign Minister Garel-Jones stated "[w]e now believe that consensus may be achieved through a moratorium. Such a moratorium would give the international community time to establish the necessary measure to avoid a legal vacuum on minerals once a moratorium comes to an end." *Britain Declares Support on Mining in Antarctica in Major Policy Shift*, Int'l Envtl. Rep. Daily (BNA), April 10, 1991.

98. The Japanese government recognized that CRAMRA provided adequate safeguards for the environment of the Antarctic wilderness but changed its position to achieve a consensus. Stephen Brown, *Japanese Switch on Antarctic Could Make Consensus Easier*, REUTERS, April 23, 1991, *avaialble in* LEXIS, Nexis Library, Wires File.

99. The Bush Administration advised its negotiators to support a ban on mining that would last only 20 to 40 years. However, these figures were unacceptable for certain members of Congress. "Our law calls on the Secretary of State to negotiate a new agreement for Antarctica that would 'prohibit or ban indefinitely' mining activities . . . 20 to 40 years does not constitute an indefinite ban." 137 CONG. REC. S4374, S4375 (daily ed. April 11, 1991) (statement of Sen. Kerry). The dissent was highlighted in a letter signed by various senators on March 25, 1991, that was sent to President Bush. It read as follows:

> Dear Mr. President: We are writing to express our grave concern that the preservation and protection of the Antarctic environment, that we worked hard to ensure in the last Congress, is still at issue. Specifically, it is our understanding that the United States, in the upcoming meeting of the Antarctic Treaty Parties in Madrid, Spain will encourage other nations to agree to a policy that would ultimately facilitate and encourage mining activities in the area.
>
> On November 16, 1990, you signed into law two measures, Public Laws 101-594 and -620, that declare it to be the policy of the United States to pursue an indefinite prohibition of commercial minerals development and related activities in Antarctica. We understand, however, that US representatives are instructed to urge that mining merely be prevented for a limited time - some 20 to 40 years - after which time the moratorium will be lifted. This position falls short of the standard we believe should apply. A prohibition which ends after a time certainly does not amount to an indefinite ban.
>
> Moreover, it is also our understanding that the United States is prepared to suggest that [CRAMRA] be implemented when the mining prohibition is lifted. As was declared in both of the measures mentioned above, however, CRAMRA does not guarantee the preservation of the fragile environment of Antarctica and could actually stimulate movement toward Antarctic mineral resource activity.
>
> The draft Protocol on Environmental Protection that was negotiated by the Antarctic Treaty Parties in Chile in November of last year includes an incomplete article prohibiting mineral activities. It is our position that, in accord with the legislation passed last year and with the operation of the Antarctic Treaty System, the prohibition should be sustainable indefinitely, unless, through the

At the Madrid conference, however, the United States delegation decided to adopt the fifty year moratorium along with the other Treaty members.[100] The impasse arose when the United States proposed an alternative method to the draft protocol that would allow mining and oil drilling after fifty years without the consent of all twenty-six consultative parties of the treaty.[101] The United States delegation argued that under the terms of the original draft protocol, there would be virtually no chance that a ban could be lifted after fifty years, even if the majority of nations agreed to lifting the moratorium. Under the alternative draft Protocol, one nation acting alone could block the goals of the rest.

Despite the counter-proposals and arguments that arose following the Madrid conference, the Bush Administration, on July 3, 1991, reversed its position and agreed that it would accept the fifty year mining morato-

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operation of very carefully designed procedures, a consensus is reached among the Treaty Parties to modify its terms.

We realize the press of business, but the protection of the Antarctic is a duty not only to this, but to all future generations. If we work together, we are confident that an agreement can be negotiated and ratified that will effectively protect Antarctica's pristine environment.

Sincerely,

Senators Richard Lugar, Brock Adams, Thomas Daschle, James Jeffords, Quentin Burdick, Edward Kennedy, Joseph Biden, John Kerry, Al Gore, Carl Levin, Bill Bradley, Alan Cranston, Daniel Akaka, Joseph Lieberman, Tom Harkin, and Tim Wirth.

137 CONG. REC. S5066-5067 (daily ed. Apr. 25, 1991) (statement of Sen. Gore).

100. The Treaty members reached an agreement on the 50-year mining ban. However, the largest obstacle at the meeting was the draft protocol's Article 6 (now Article 7 of the Protocol) dealing with a complete minerals ban. Argentina, the United Kingdom, and the United States wanted to keep the minerals option open. The delegation set another meeting for mid-June to finalize the Protocol. *Tentative Agreement Reached on 50-year Mining, Drilling Ban in Antarctica*, Daily Rep. for Executives (BNA), May 1, 1991. During the same period, the United States proposed a resolution to remind the administration of the support that exists in Congress for a long-term indefinite ban on mining and a more comprehensive shield over the continent. 137 CONG. REC. S6759 (daily ed. May 24, 1991) (statement of Sen. Kerry).

101. The United States proposed to amend the draft protocol so that it, or any other nation, could start mining thereafter even if some of the present 26 consultative members were against lifting the ban. This amendment would remove the power of the veto; and therefore, weaken the environmental Protocol. *See* Hunt, *supra* note 16. The United States proposal also stated that if the majority-approved amendment proposal to allow mining does not enter into force within three years of being submitted to all voting nations for approval, then any voting nation may give notice of its withdrawal from the mining prohibition. Mining would then be allowed to commence two years after formal notification of withdrawal. *Delegates Express Disappoint Over New U.S. Mining Proposal at Antarctica Conference*, Int'l Envtl. Daily (BNA), June 18, 1991. The proposal was received with criticism by the United States Senate:

> Everybody in the world agreed [for the moratorium]. The Congress agreed. We passed legislature . . . I cannot understand why the President would suddenly reverse direction and say we disagree with the unanimous vote of the House, unanimous vote of the Senate, and unanimous conclusion of every other nation in the world.

137 CONG. REC. S8480, S8481 (daily ed. June 24, 1991) (statement of Sen. Gore).

rium and sign the environmental Protocol.[102] The switch in decision was more than likely a direct result from the amount of worldwide criticism and opposition that the Bush Administration received for their refusal to adopt the mining ban.[103]

D. *Analysis of the Protocol*

On October 4, 1991, the Antarctic Treaty was renewed.[104] The biggest alteration to it being the new environmental Protocol which now includes the fifty year mining moratorium.[105] The preamble of the Protocol broadly defines the intent that exists within the agreement.[106] In affirming the goals of the Antarctic Treaty, the preamble recognizes the need for the environmental protection of the continent[107] and that the preservation of Antarctica is in the interest of the entire global community.[108] The Protocol's objective is the commitment by the Parties to protect the Antarctic environment and its ecosystems by designating the continent as a natural reserve, devoted to peaceful uses and science.[109] The conducting of operations in the Antarctic region will now be subject to strict supervision and various factors will be taken into account as to whether the activity should be permitted at all.[110]

Perhaps the most important article in the Protocol, is Article 7, which

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102. President Bush gave no specific reason for the sudden shift in policy. Larry B. Stammer, *Bush Alters Stand, OKs Antarctic Mining Ban*, L.A. TIMES, July 4, 1991, at A26.

103. Letters of representatives from Japan, the European Community, the Soviet Union, and Australia wrote to Bush urging him to support the draft Protocol. *Id.*

104. *31 Nations Sign Pact to Protect Antarctica*, L.A. TIMES, Oct. 5, 1991, at A11; Riding, *supra* note 2.

105. In addition to the Protocol, there are four Annexes to the Protocol, which form an integral part thereof, namely: Annex I which deals with Environmental Impact Assessment; Annex II covers the Conservation of Antarctic Fauna and Flora; Annex III discusses Waste Disposal and Waste Management; and finally, Annex IV targets the prevention of Marine Pollution. The Protocol is intended to supplement the Antarctic Treaty, but does not intend to modify or amend the provisions of the Treaty. Protocol, *supra* note 4, art. 4, para. 1. In addition, nothing in the Protocol shall waive rights and duties of the Parties to this Protocol under the other international instruments in force with the Antarctic Treaty system. *Id.* art. 4, para. 2; *see id.* art. 5.

106. Protocol, *supra* note 4, preamble.

107. *Id.*

108. *Id.*

109. *Id.* art. 2. In addition, the importance of the Antarctic environment is recognized. *Id.* art. 3, para. 1. Specifically, it states:

> The protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values, and its value as an area for the conduct of scientific research, in particular research essential to understanding the global environment, shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area.

110. *Id.* art. 3, para. 2(b). This specifically states that:

prohibits the use of mineral resource activities in the region.[111] While the language signals the death-blow to CRAMRA, the article is also the weak link of the entire Protocol. Under Article 25, in the section dealing with modification or amendments to the Protocol, exists a "walkaway" clause.[112] The clause would allow any signatory nation to withdraw from the mining moratorium agreement completely, after giving five years notice.[113] While all other articles of the Protocol are subject to ratification, acceptance, approval, or accession by seventy-five percent of the Parties,[114] Article 7 is specifically designed to allow Parties to get out of their commitments after the necessary notice is given.[115] Such an amendment, if enforced, could render the entire mining and drilling moratorium moot in a few years.

Article 8 discusses the environmental impact assessment plan, and the methods of implementation are detailed in Annex I of the Protocol. All activity which may affect the region is identified within three categories: (a) less than a minor or transitory impact; (b) a minor or transitory impact; or (c) more than a minor or transitory impact.[116] All activity in the

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Activities in the Antarctic Treaty area shall be planned and conducted so as to avoid:

(i) adverse effects on climate or weather patterns;

(ii) significant adverse effects on air or water quality;

(iii) significant changes in the atmospheric, terrestrial (including aquatic), glacial or marine environments;

(iv) detrimental changes in the distribution, abundance or productivity of species or populations of species of fauna or flora;

(v) further jeopardy to endangered or threatened species or populations of such species; or

(vi) degradation of, or substantial risk to, areas of biological, scientific, historic, aesthetic or wilderness significance.

111. *Id.* art. 7. Specifically, Article seven holds that: "Any activity relating to mineral resources, other than scientific research, shall be prohibited."

112. *Id.* art. 25, para. 5(a). This paragraph states that:

With respect to Article 7, the prohibition on Antarctic mineral resource activities contained therein shall continue unless there is in force a binding legal regime on Antarctic mineral resource activities that includes an agreed means for determining whether, and, if so, under which conditions, any such activities would be acceptable. This regime shall fully safeguard the interests of all States referred to in Article IV of the Antarctic Treaty and apply the principles thereof. Therefore, if a modification or amendment to Article 7 is proposed at a Review Conference referred to in paragraph 2 above, it shall include such a binding legal regime.

113. *Id.* art. 25, para. 5(b). This paragraph states:

If any such modification or amendment has not entered into force within 3 years of the date of its adoption, any Party may at any time thereafter notify to the Depository of its withdrawal from this Protocol, and such withdrawal shall take effect 2 years after receipt of the notification by the Depositary.

114. *Id.* art. 25, para. 3; *see id.* art. 25, para. 4.

115. The "walkaway" clause was developed at the insistence of the conservatives who run the Economic Bureau of the State Department. *See* Jon Bowermaster, *Hands Off This Pristine Continent*, NEWSDAY, Oct. 1, 1991, at A26.

116. Protocol, *supra* note 4, annex I, art. 1, para. 2. If an activity is determined as having less than a minor or transitory impact, the activity may proceed forthwith. *Id.*

region will require that an Initial Environmental Evaluation (IEE) be prepared.[117] The IEE is required to contain sufficient detail of the type of proposed activity,[118] consideration of alternatives to the plan, and possible impacts that the proposed activity may bring about.[119]

The new Protocol also establishes the Committee for Environmental Protection (CEP).[120] Article 12 details the various functions that the CEP will oversee and perform.[121] In addition, the CEP will work with other various scientific, technical, and environmental organizations in carrying out its functions.[122] Under Annex II of the Protocol, which deals with the Conservation of Antarctic Fauna and Flora, the Parties attempted to take direct action against harmful interferences that may directly affect the continent.

Permits will be required for either the taking of or harmful interference with native fauna and flora.[123] The permits are required to specify the authorized activity detailing when, where, and by whom such activi-

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117. *Id.* art. 2, para. 1. Specifically, it states that: "Unless it has been determined that an activity will have less than a minor or transitory impact, or unless a Comprehensive Environmental Evaluation is being prepared in accordance with Article 3, an IEE shall be prepared." The information is then to be compiled in a Comprehensive Environmental Evaluation and made public to the other Parties for their review. *Id.* art. 3, para. 3; *see id.* art. 3, para. 5-6.

118. *Id.* art. 2, para. 1(a). The IEE will include: "a description of the proposed activity, including its purpose, location, duration, and intensity."

119. *Id.* art. 2, para. 1(b).

120. Protocol, *supra* note 4, art. 11, para. 1. Each party is allowed to be a member of the CEP and appoint a representative who may be accompanied by experts and advisors. *Id.* art. 11, para. 2. In addition, observer status is open to any Contracting Party to the Antarctic Treaty who may not be a member to the Protocol. *Id.* art. 11, para. 3.

121. *Id.* art. 12, para. 1. Specifically, the CEP's prime responsibilities will be to provide advice on the following:

> (a) the effectiveness of measures taken pursuant to this Protocol;
> (b) the need to update, strengthen or otherwise improve such measures;
> (c) the need for additional measures, including the need for additional Annexes; where appropriate;
> (d) the application and implementation of the environmental impact assessment procedures set out in Article 8 and Annex I;
> (e) means of minimising or mitigating environmental impacts of activities in the Antarctic Treaty area;
> (f) procedures for situations requiring urgent action, including response action in environmental emergencies;
> (g) the operation and further elaboration of the Antarctic Protected Area system;
> (h) inspection procedures, including formats for inspection reports and checklists for the conduct of inspections;
> (i) the collection, archiving, exchange and evaluation of information related to environmental protection;
> (j) the state of the Antarctic environment; and
> (k) the need for scientific research, including environmental monitoring, related to the implementation of this Protocol.

122. *Id.* art. 12, para. 2. In ensuring that the provisions of the Protocol are being fulfilled and in accordance with Article VII of the Antarctic Treaty, inspections by observers will be conducted. *See supra* note 25 and accompanying text.

123. Protocol, *supra* note 4, annex II, art. 3, para. 1.

ties are to be conducted.[124] In addition, the permits are to be limited and issued only for certain activities.[125] The Parties believed that the limited circumstances for which permits would be granted would help in ensuring that no more native mammals, birds, or plants are taken than are necessary to fulfill the goals of the Annex.[126] Animals and plants which are not native to the region shall not be permitted in the Antarctic Treaty area without first securing a permit,[127] and dogs, which have been a fixture of past and present Antarctic expeditions, will no longer be able to reside in the area.[128]

Annex III covers the growing problems of waste disposal and waste management that have plagued the Antarctic region for an extensive period of time.[129] The language promotes a movement which will attempt to minimize wastes produced and disposed of as far as is practically possible so as to guarantee that the Treaty area is as little affected as possible.[130] The Annex details which wastes will have to be removed from the Treaty area,[131] and which types of waste will be subject to incineration or

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124. *Id.* art. 3, para. 2.

125. *Id.* Permits shall be issued only for these few exceptions:

(a) to provide specimens for scientific study or scientific information;

(b) to provide specimens for museums, herbaria, zoological and botanical gardens, or other educational or cultural institutions or uses; and

(c) to provide for unavoidable consequences of scientific activities not otherwise authorized under sub-paragraphs (a) or (b) above, or of the construction of scientific support facilities.

126. *Id.* art. 3, para. 3. In addition, all the Fur Seal and Ross Seal species are regarded as "Specially Protected Species" and the granting of permits to take such species will be limited to only a few narrow exceptions. *Id.* art. 3, para. 5. *See id.* app. A.

127. *Id.* art. 4, para. 1.

128. "Dogs shall not be introduced onto land or ice shelves and dogs currently in those areas shall be removed by April 1, 1994." *Id.* art. 4, para. 2.

129. Protocol, *supra* note 4, annex III, art. 1, para. 1.

130. *Id.* art. 1, para. 2. Wastes removed from the Treaty area shall be returned to the countries from which the generated waste came from or to another country if other arrangements have been made. *Id.* art. 1, para. 4.

131. *Id.* art. 2, para. 1. These wastes include:

(a) radio-active materials;

(b) electrical batteries;

(c) fuel, both liquid and solid;

(d) wastes containing harmful levels of heavy metals or acutely toxic or harmful persistent compounds;

(e) poly-vinyl chloride (PVC), polyurethane foam, polystyrene foam, rubber and lubricating oils, treated timbers and other products which contain additives that could produce harmful emissions if incinerated;

(f) all other plastic wastes, except low density polyethylene containers (such as bags for storing wastes), provided that such containers shall be incinerated in accordance with Article 3 (1);

(g) fuel drums; and

(h) other solid, non combustible wastes:

provided that the obligation to remove drums and solid non-combustible wastes contained in subparagraphs (g) and (h) above shall not apply in circumstances where the removal of such wastes by any practical option would result in greater adverse environmental impact than leaving them in their existing locations.

other disposal methods.[132] In addition, one of the Annex's greatest initiatives is the phasing out of this procedure by no later than the end of the 1998/1999 season.[133] The disposal of wastes into the sea is still permitted under Annex III,[134] but now the Parties are required to limit possible environmental risks by discharging wastes in conditions where there is initial dilution and rapid water dispersal.[135] Perhaps the most meaningful strategy in curtailing waste disposal that Annex III sets out, is waste management planning.[136]

Finally, Annex IV to the Protocol covers the prevention of marine pollution in the Treaty area. Annex IV has a broad application, and its provisions apply to all Parties' ships[137] which are entitled to fly their respective flags and to any other ship which has interests in supporting Antarctic operations while present in the Treaty area.[138] All ships operating in the Treaty area will be required to "retain on board all sludge, dirty ballast, tank washing waters and other oily residues and mixtures which may not be discharged into the sea."[139] The Annex also deals

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In addition, liquid wastes, sewage, and domestic liquid wastes shall to the maximum extent practicable be removed from the Treaty area. *Id.* art. 2, para. 2.

132. *Id.* art. 2, para. 3. Unless incinerated, autoclaved or otherwise rendered sterile, the following objects will be removed from the Treaty area:

(a) residues of carcasses of imported animals;
(b) laboratory culture of micro-organisms and plant pathogens; and
(c) introduced avian products.

In addition, items such as polychlorinated biphenyls (PCBs), non-sterile soil, polystyrene beads, chips or similar forms of packaging, or pesticides (other than those required for scientific, medical, or hygiene purposes) are now prohibited from entering the region. *Id.* art. 7.

133. Protocol, *supra* note 4, annex III, art. 3, para. 2. Until that time though, Parties are to reduce open burning to the maximum extent practicable. *Id.*

134. *Id.* art. 5, para. 1.

135. *Id.* art. 5, para. 1(a). The article also adds that large quantities of waste (generated in stations where the weekly occupancy during the austral summer is 30 individuals or more) shall be treated by maceration. *Id.* art. 5, para. 1(b).

136. *Id.* art. 8, para. 1. Under the provisions established, each Party which conducts activities in the Treaty areas will be required to establish a waste disposal classification system as a basis for recording wastes disposed of and to aid in evaluating the environmental impact of such conduct. *Id.* The Parties will be required to appoint a waste management official to implement and monitor the waste management plans. *Id.* art. 10(a). Each Party will be required to annually report and update their waste management plans, detailing programs for cleaning up existing waste disposal areas. *Id.* art. 9. These reports will be sent to the CEP where they will be subject to review and approval. *Id.* art. 9, para. 3-4.

137. Protocol, *supra* note 4, annex IV, art. 1(g) defines "ship" as: "a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms."

138. *Id.* art. 2. Note that annex IV does not apply to any warship, naval auxiliary or other ship owned or operated by a state and used, for the time being, only on government non-commercial service. *Id.* art. 11, para. 1. However, the Parties are required to attempt to abide as reasonably as possible to the provisions set out by annex IV. *Id.*

139. *Id.* art. 3, para. 1. Discharges will only be permitted once the ships are outside of the Treaty area. *Id.* The prohibition of oil discharges does not however, apply in instances where there has been damage to a ship. *Id.* art. 3, para. 2(a). Furthermore, if

with the disposal of garbage,[140] and sets out a detailed list of items which may no longer be dumped into the seas of the Treaty area.[141] Preventive measures, emergency preparedness, and response actions are now required by Annex IV.[142] Contingency plans are to be prepared in order to prevent any possible accidents that may arise in the Treaty area, possibly affecting marine pollution.[143] Greater emphasis is placed on plans involving "ships carrying oil as cargo, and for oil spills, originating from coastal installations, which enter into the marine environment."[144]

E. *Will the Protocol Work?*

While the Parties to the Protocol are all entitled to celebrate their diplomatic achievement of protecting Antarctica's precious environment, a great number of questions persist over just how effective the Protocol and its mining moratorium will be.[145] Many nations, some of whom are Parties to the Protocol, along with others who are not, are still eager to explore for the possible wealth that may lie beneath Antarctica's icecap and along its extensive coastline.[146]

A major weakness in the Protocol is that it fails to provide a legal mechanism to prevent nations who are not bound by the provisions of the Antarctic Treaty or the Protocol from placing oil rigs off the region's coast.[147] The nations who are not bound are numerous. These nations could simply argue that by not being a member of the Protocol, they are not legally bound to preserve Antarctica's environment, and therefore may commence drilling at any time.[148] In addition, as mentioned, the

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discharges of oily substances are needed to combat other pollution incidents, then they are permitted. *Id.* art. 3, para. 2(b).

140. *Id.* article 1(b) defines "garbage" as: "all kinds of victual, domestic and operational waste excluding fresh fish and parts thereof, generated during the normal operation of the ship, except those substances which are covered by Articles 3 and 4."

141. *Id.* art. 5. Prohibited items include: "all plastics, including but not limited to synthetic ropes, synthetic fishing nets, and plastic garbage bags." *Id.* art. 5, para. 1. In addition, "paper products, rags, glass, metal, bottles, crockery, incineration ash, dunnage, lining and packing materials," will also be prohibited. *Id.* art. 5, para. 2. The provisions of paragraphs one and two will not apply if the ship has been damaged and all reasonable precautions have been taken to minimize the damage, or there has been an accidental loss of synthetic fishing nets. *Id.* art. 5, para. 5. In addition, under article 6, each Party will to the best of its ability, eliminate all discharges of untreated sewage that occur within twelve nautical miles of land or ice shelves. *Id.* art. 6, para. 1(a).

142. *Id.* art. 12.

143. *Id.* art. 12, para. 1.

144. *Id.* Parties are now also required to cooperate in the formulating and implementing of such plans, and to seek the advice of various maritime and international organizations in their endeavors. *Id.* art. 12, para. 1(a)(b).

145. *See* Bowermaster, *supra* note 115.

146. Various reports maintain that cobalt, chromium, manganese, uranium, platinum, coal, iron, molybdenum, gold, nickel, and diamonds lie beneath Antarctica's layers of ice. For a discussion of the current knowledge of mineral wealth in Antarctica, see SHAPLEY, *supra* note 19, at 134-45.

147. Bowermaster, *supra* note 115.

148. *Id.*

Protocol's walkout clause could subject the continent and surrounding area to mineral exploitation after five years notice.[149] Furthermore, the issue of liability, should an environmental accident occur by the fault of one of the Parties, is dealt with vaguely in the Protocol, whereby "the Parties undertake to elaborate rules and procedures relating to liability for damage arising from the activities taking place in the Antarctic Treaty area and covered by this Protocol."[150]

The Protocol is to be in effect for at least the next fifty years.[151] Certainly its biggest test will be whether it can survive the interpretations of a world that may one day need to call upon Antarctica to provide future energy and resource materials. Diplomats "must continue to pay close attention in coming years. If they don't, they risk waking to find, say, Pakistani (or Moroccan or Soviet or American) oil rigs littering the coastline of the seventh continent, defeating the strenuous international effort to keep it laboratory-clean."[152]

CONCLUSION

Since the inception of the Antarctic Treaty, the environment has been of primary concern. The recent agreement to adopt an environmental Protocol which includes a fifty year mining moratorium for the Antarctic Treaty area represents a milestone. Nations have finally realized that the region is one that is not fully understood, and that until we acquire a reasonably strong comprehension of the impact that man's activities on the continent might have, we should do very little to disrupt that which we do not yet know. The agreement, however, contains weaknesses and allows nations to withdraw from the moratorium after sufficient notice is given. As a result, the Parties must not permit the establishment of this Protocol and moratorium to lull them into complacency. Instead, they should begin formulating a minerals regime that will satisfy both the region's environmental concerns and the world's needs for resources. While proposals of keeping Antarctica a natural reserve and world park are noble aspirations, they are not realistic. Should the time come when nations need to tap into the possible wealth that Antarctica may have to offer, they will. It then becomes the Parties' prime responsibility to decide how best to divide that wealth and preserve Antarctica's unique en-

149. *Id.*

150. Protocol, *supra* note 4, art. 16. The Parties did, however, express that an elaboration of the rules and procedures relating to liability for damage arising from activities taking place in the Antarctic Treaty area should commence at an early stage. In this context, it was understood that liability for damage to the Antarctic environment should be included in such an elaboration. *See* Protocol *supra* note 4, at 30 I.L.M. 1455, 1460.

151. Protocol, *supra* note 4, art. 25, para. 2. This provision states that:

> If, after the expiration of 50 years from the date of entry into force of this Protocol, any of the Antarctic Treaty Consultative Parties so requests by a communication addressed to the Depositary, a conference shall be held as soon as practicable to review the operation of this Protocol.

152. Bowermaster, *supra* note 115.

vironment at the same time. The Protocol and the mining moratorium represent a crowning diplomatic achievement; however, more will clearly need to be done.

Andrew F. Neuman