RESOURCE EXPLOITATION: THE THREAT TO THE LEGAL REGIME OF ANTARCTICA

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INTRODUCTION

Antarctica is increasingly important because of its resources. Glowing journalistic accounts of oil and natural gas deposits have been common in recent years.[1] Although the era of mineral and petroleum exploitation has not yet arrived, the possibility looms in the distance. The U.S. and the Soviet Union have begun exploration for hard minerals.[2] The Japanese and the Soviets are currently exploiting Antarctic krill,[3] a tiny crustacean which lives mostly within a hundred mile radius of the permanent ice pack. Antarctic icebergs may soon be utilized to bring fresh water to areas of the world beseiged by drought. Detailed plans have already been formulated to tow Antarctic icebergs to Southern California and Saüdi Arabia.[4]

The purpose of this paper is to determine whether the legal status quo in Antarctica will be able to withstand the stress posed by future resource exploitation. If speculation as to the importance of Antarctica's resources has little basis in fact, the present Antarctic regime may endure for a number of years. On the other hand, commercial exploitation of Antarctic oil, for example, could result in significant international conflict in the near future. Even the perception that Antarctica has important

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1. For a sampling of such articles, *see* Wall St. J., Feb. 21, 1974, at 1, col. 1; *id.*, March 23, 1973, at 19, col. 4; Christian Sci. M., Dec. 20, 1976, at 1, col. 1; 187 **Science** 820 (March 7, 1975).
2. A current U.S. project funded by the National Science Foundation is focused on the Dufek Intrusive, an area said to be similar to South Africa's mineral-rich bush veld. *See* D. Salisbury, *Prospecting for Antarctic Riches*, Christian Sci. M., Dec. 20, 1976, at 1, col. 1. A new Soviet station was announced by Tass in 1975, its major function to serve as a base for mineral prospecting in the area west of the Trans-Antarctic Mountains. See M. Browne, *Soviet Plans New station on Shores of Antarctica*, N.Y. Times, June 29, 1975, at 7, col. 3.
3. The Soviets were the first to exploit Antarctic krill and continue to lead in its production. In 1962 they began research and two years later they sent the first ship to Antarctica to catch krill. During the 1974-75 season the Soviets took an estimated 200,000 tons of krill from Antarctica. *See* P. Hagan, *The Singular Krill*, N.Y. Times, March 9, 1975, S6 (Magazine), at 40, col. 1. The Japanese government first sent a fishing vessel to Antarctica to catch krill during the 1972-73 season. It came back with 60 tons of krill, and the following season with 600 tons. The first commercial boat to catch and process krill was sent to Antarctica by Nippon Suisan, Japan's largest fishing company, in November 1974. *See Krill Offers Hope of New Food Source*, Christian Sci. M., Nov. 29, 1974, at 3A, col. 4 (Eastern ed.).
4. Saudi Arabia recently commissioned a French firm, the Cicero Company, to study the feasibility of towing icebergs from Antarctica to the Red Sea port of Jidda. Spokesmen for the Cicero Company hope that the study will lead to a contract to begin actual operations as early as 1977. *See Saudi Arabia Commissions Iceberg Study*, N.Y. Times, Nov. 3, 1976, at 2, col. 3. The Rand Corporation formulated the towing plan for Southern Claifornia. *See* J. Hult and N. Ostrander, **Antarctic Icebergs as a Global Fresh Water Source** (1973).

resources could inflict a severe blow to the delicate political balance on the continent.

LEGAL BACKGROUND

Antarctica has attracted the interest of major powers and other nations ever since its discovery by Europeans 150 years ago. National claims to Antarctica and a multilateral treaty combine to form a complex legal legacy.

Seven nations have made claims to Antartica. The earliest claims were made by the United Kingdom,[5] New Zealand,[6] Australia,[7] France,[8] and Norway.[9] Each of these claims did not conflict, the five nations impliedly recognizing each other's claims. The neat delineation of claims by the five European and Commonwealth nations was disturbed in 1940 when Chile asserted sovereignty to an Antarctic sector, mostly contained in the territory claimed by the British.[10] Argentina has since claimed part of the sector claimed by Chile and most of the remainder of the British territory not claimed by Chile.[11]

Five nations involved in Antarctic exploration, which were original signatories of the Antarctic Treaty, have not made territorial claims. This group includes the U.S., the Soviet Union, Belgium, South Africa, and Japan.[12] The U.S. maintains the position that it will not recognize the claims of any country, will not make Antarctic claims itself, and reserves its basic

5. The United Kingdom established the first claim to all islands and territories between 20° W and 80° W longitude below 50° S latitude in a Letters Patent on July 21, 1908. *See* 46 **U.S. Navel War College, International Law Documents**, 1948-49 231 (1950). This claim was amended on March 28, 1917 to include 20° W to 50° W longitude below 50° S latitude and 50° W to 80° W longitude below 58° S latitude. *See id.*, at 233.
6. New Zealand claimed the Ross Dependency by a July 30, 1923 Order in Council of the U.K. directed to the Governor of New Zealand. The Ross Dependency was established to include "all the islands and territories between the 160th degree of East Longitude and 150th degree of West Longitude which are situated south of the 60th degree of South Latitude." *Id.* at 235.
7. Australia made the last of the Commonwealth claims by an Order in Council dated Feb. 7, 1933 which includes the area south of 60° S latitude between 45° E and 160° E longitude except for Adélie Land. *See* 1 **Hackworth, Digest of International Law** 462 (1940).
8. France had placed Adélie Land under the jurisdiction of the colonial government of Madagascar by Presidential Decree of Nov. 21, 1924. *See supra* note 5, at 229. The limits of Adélie Land were established by a Presidential Decree of April 1, 1938: "islands and territories situated to the South of the 60th parallel of South Latitude and between the 136th and 142nd meridians of Longitude East of Greenwich." *Supra* note 7, at 459.
9. Norway informed the Department of State on January 14, 1939 that by Royal Proclamation issued the same day it had claimed the coast of the Antarctic continent between 20° W and 45° E longitude, the area between the British and Australia claims. *See supra* note 7, at 460.
10. Chile claimed the antarctic sector between 53° W and 90° W Longitude on Nov. 6, 1940. *See supra* note 5, at 224.
11. In a decree published on February 28, 1957, Argentina re-established the National Territory of Tierra del Fuego, the antarctic, and the Islands of the South Atlantic so as to include the sector between 25° W and 74° W longitude. *See* 9 **Polar Record** 52-53 (1958). This claim overlaps the prior Chilean claim from 53° to 74° W longitude, and is entirely contained in the British sector.
12. Japan is perhaps a reluctant member of the group. The Treaty of Peace with Japan provides in Article 2, paragraph (e) that: "Japan renounces all claims to any right or title to or interest in connection with any part of the Antarctic area, whether deriving from the activities of Japanese nationals or otherwise." Done at San Francisco, Sept. 8, 1951, 3 UST 3169, TIAS 2490, 136 UNTS 45.

historic rights in Antarctica.[13] The Soviet position is similar to that of the U.S.[14]

President Eisenhower took the initiative in 1958 to invite the twelve nations with Antarctic interests[15] to formulate a plan which would keep Antarctica open to all nations for scientific or other peaceful purposes.[16] The result of his initiative was the Antarctic Treaty which entered into force on June 23, 1961 when ratification was completed by all twelve signatories.[17]

The basic goals of the Antarctic Treaty are set forth in the first few articles. The continent is to be used exclusively for peaceful purposes.[18] Any measures of a military nature are prohibited, including "the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons."[19] Provision is made for freedom of scientific investigation and scientific cooperation.[20] To a large extent the Antarctic Treaty is an effort to preserve Antarctica exclusively for scientific research.

The treaty approaches the problem of sovereignty by laying aside all territorial claims, or "freezing" the claims, as long as it remains in force.[21] No party to the treaty renunciates previously asserted rights, and nothing occuring while the treaty is in force prejudices such rights.[22] Activities under the treaty regime cannot be the basis for asserting a new claim or enlarging an existing claim.[23] "Freezing" the territorial claims was essential to the success of the Antarctic Treaty. Most of the claimant States, including Argentina, Chile, France, and Australia,

13. *See* E. McDowell, **Digest of U.S. Practice in International Law** 1975, 107-108 (1976). In 1939 President Roosevelt instructed Admiral Byrd not to announce any territorial claim to Antarctica during his expedition. The President's instruction gives some idea of the method whereby American explorers informally assert a claim, and permit the U.S. to reserve its rights. Roosevelt's instructions to Byrd contained the following paragraph: "(f) The U.S. has never recognized any claims to sovereignty over territory in the Antarctic regions asserted by any foreign state. No member of the U.S. Antarctic Service shall take any action or make any statements tending to compromise this position. Members of the Service may take any appropriate steps such as dropping written claims from airplanes, depositing such writings in cairns, et cetera, which might assist in supporting a sovereignty claim by the U.S. Government. Careful record shall be kept of the circumstances surrounding each such act. No public announcement of such act shall, however, be made without specific authority in each case from the Secretary of State." 2 Whiteman, **Digest of International Law** 1248 (1963).

14. In accepting the invitation of the U.S. to participate in the conference to draft the Antarctic Treaty, the Soviet government stated: "that is has not recognized and cannot recognize as legitimate any kind of separate solution for the problem of territorial possession in the Antarctic. . . .
The Soviet Union reserves to itself all rights based on discoveries and explorations of Russian navigators and scientists, including the right to present corresponding territorial claims in the antarctic." 2 **Whiteman**, *id.*, at 1254

15. The seven claimant States and five States which had not made claims mentioned above.

16. *See U.S. Proposes Conference on Antarctica*, 38 **Dept. State Bull.** 910 (June 2, 1959).

17. Done at Washington, Dec. 1, 1959, 12 UST 794, TIAS 4780, 402 UNTS 71. Brazil, Czechoslovakia, Denmark, East Germany, the Netherlands, Poland, and Romania have also ratified the treaty. *See* **Treaties in Force on January 1, 1976** 315 (1976).

18. *Id.*, Article I, paragraph I.

19. *Ibid.*

20. *Id.*, Articles II and III.

21. *Id.*, Article IV.

22. *Id.*, paragraph 1.

23. *Id.*, paragraph 2.

insisted that such a provision be included in the treaty. Both the U.S. and the U.S.S.R. had reserved their rights, and were equally protected.[24]

The treaty bans nuclear explosions in Antarctica[25] and was the first multilateral agreement to establish such a ban. When the Antarctic Conference was first convened, the draft treaty had no provision covering nuclear explosions. The ban was added to meet the concerns of southern hemisphere nations which feared fallout from atmospheric tests.[26]

Article VI delineates the "area" which is covered by the Antarctic Treaty:

> The provisions of the present Treaty shall apply to the area south of 60° South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area.[27]

The "area" covered by Article VI must be explained in detail. Underneath the ice-cap Antarctica has a different configuration from what is seen on the map. If the ice-map should melt, the continent itself would be much smaller and a considerable portion of West Antarctica would be sea, dotted with islands. There is no problem including Antarctic land above sea level in the "area" covered by the treaty. There is also little doubt that land below sea level which is covered by solid ice is included in the treaty.[28] The status of the ice shelves, which are attached to the land and float on water, might be more questionable but for the fact that they are expressly made part of the "area" in accordance with Article VI.

Beyond the ice shelves is a belt of drifting ice called pack ice which surrounds Antarctica for hundreds of miles. During the winter the pack ice is somewhat solid, but it is constantly broken by storms and ice floes drifting in the north. Since Article VI expressly provides for ice shelves to be included as part of the "area" of Antarctica, it may be assumed that the pack ice is not included within the treaty.[29] The fact that the pack ice is separated from the solid land and ice mass lends further support to this view.

After delineating the "area" to which the Antarctic Treaty applies, Article VI expressly excludes rights on the high seas. The treaty thus does not apply to the oceans, and does not

24. *See* J. Hanessian, *The Antarctic Treaty 1959*, 9 **Int. and Comp. L. Q.**, 436, 468 (1960).
25. Article V, paragraph 1, *supra* note 17.
26. *See supra* note 24, at 467.
27. *Supra* note 17.
28. *See* M. Mouton, *The International Regime of the Polar Regions*, 107 **Recueil des Cours** 168, 195 (1962).
29. *See* J.P. Bernhardt, *Sovereignty in Antarctica*, 5 **Calif. W. Int. L. J.**, 297, 308 (1975).

interfere with the traditional freedom of the seas.[30] The effect of Article VI is to create two legal regimes in the area south of 60° South latitude. One regime exists in the "area", the Antarctic territory assimilated to land, where measures of a military nature as well as nuclear explosions are prohibited.[31] Another regime exists in the Antarctic Ocean where the general regime of the high seas determines the legal norms.[32]

Article VI of the Antarctic Treaty does not delineate the extent of the high seas south of 60° S latitude. Taubenfeld says that in "view of the existing controversies over the breadth of the territorial sea, the question of what constitutes the high seas was intentionally left vague."[33] Since the distinction between the two legal regimes in Antarctica is determined by the extent of the high seas, it is desirable to clear up this vagueness. Article I, paragraph 1 of the convention on the Territorial Sea and the Contiguous Zone[34] extends the sovereignty of a State beyond its land territory to the territorial sea. The regime of the territorial sea is thus dependent on the existence of sovereignty over land territory. While the Antarctic Treaty is in force, there is no generally recognized State sovereignty over Antarctica, and therefore, there is no territorial sea.[35]

Is it possible that the high seas regime extends to all Antarctic waters? The answer would appear to be in the affirmative. Article I of the Convention on the High Seas defines the high seas to include "all parts of the sea that are not included in the territorial sea or in the internal waters of a State."[36]

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30. The freedom of the seas concept is codified in the Convention on the High Seas. Done at Geneva, April 29, 1958, 13 UST 2312, TIAS 5200, 450 UNTS 82. Article 2 contains the following provisions: "The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty. Freedom of the high seas is exercised under the conditions laid down by these articles and by the other rules of international law. It comprises, *inter alia*, both for coastal and non-coastal States:
    (1) Freedom of navigation;
    (2) Freedom of fishing;
    (3) Freedom to lay submarine cables and pipelines;
    (4) Freedom to fly over the high seas.
    These freedoms, and others which are recognized by the general principles of international law, shall be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedom of the high seas."
31. Articles I and V, *supra* note 17.
32. According to one authority, "the presence of nuclear weapons, the testing of any non-nuclear weapons and the conduct of military maneuvers are admissible in the waters and airspace of the high seas of . . . the Southern Ocean." J. Kish, **The Law of International Spaces** 180 (1973). Kish does not say that nuclear weapon tests are permissible on the Antarctic high seas. His hesitation is explained by the fact that it is unclear whether general international law permits nuclear tests on the high seas and the airspace above them. The point is, however, that the Antarctic Ocean is no different from other high seas in this regard. Since Article V of the Antarctic Treaty does not apply, the only conventional limitation is the Nuclear Test Ban Treaty. Done at Moscow, August 5, 1963, 14 UST 1313, TIAS 5433, 480 UNTS 43. Nations such as France which have not ratified the latter treaty suffer no conventional limitations if they choose to conduct nuclear tests on the high seas off Antarctica.
33. H. Taubenfeld, A *Treaty for Antarctica*, 531 **Int. Conciliation** 243, 285-286 (January 1961).
34. Done at Geneva, April 29, 1958, 15 UST 1606, TIAS 5639, 516 UNTS 205. Article I, paragraph 1 provides that "The sovereignty of a State extends, beyond its land territory and its internal waters, to a belt of sea adjacent to its coast, described as the territorial sea."
35. *See supra* note 28, at 196.
36. *Supra* note 30.

Internal waters include rivers, bays, and harbors where a State exerts sovereignty equal to the sovereignty it exerts over land.[37] The concept of internal waters may never be applicable to the interior of Antarctica where a permanent ice pack covers the land. But, States could conceivably claim an internal water status for bays or harbor areas which are free of ice during certain periods. While the Antarctic Treaty is in force, claims to internal waters will have no more validity than claims to land. In the absence of internal waters and territorial seas, all Antarctic waters may be considered part of the high seas.[38]

The Antarctic Treaty establishes a mechanism for future political cooperation among the contracting parties.[39] Consultative meetings are to be held periodically to consider and recommend "measures in furtherance of the principles and objectives of the Treaty."[40] The measures take effect when they receive unanimous approval. Only contracting parties which are original signatories or conduct substantial scientific activities in Antarctica may participate in the consultative meetings, and are required to approve the measures in order for them to take effect.

Finally, the treaty provides for amendments, modifications, and withdrawal.[41] It may be amended and modified at any time by unanimous agreement of the group of privileged contracting parties which participate in the consultative meetings.[42] Any other contracting party may either consent to the change within two years or withdraw from the treaty. Provision is also made for an elaborate procedure[43] which, in effect, permits the treaty to be terminated after thirty years.[44]

NEW DEVELOPMENTS AND THE TREATY REGIME

The remainder of this paper will be devoted to potential problems posed to the treaty regime by resource exploitation, and possible solutions to these problems. The basic problem

37. A State's sovereignty over internal waters is more complete than its sovereignty over the territorial sea because other States have the right of innocent passage through the territorial sea. Article 14 of the Convention on the Territorial Sea and the Contiguous Zone defines the right of innocent passage. *See supra* note 34.

38. *See supra* note 32, at 34.

39. Article IX, *supra* note 17.

40. *Ibid.*

41. *Id.* Article XII.

42. *Id.*, paragraph 1.

43. *Id.*, paragraph 2.

44. Since no termination date is given, the treaty theoretically remains in force indefinitely. But, after 30 years any of the same privileged contracting parties is entitled to request a conference of all the contracting parties "to review the operation of the Treaty." Any modification or amendment which is approved at such a conference by a majority of the contracting parties, including a majority of the priveleged parties, will be submitted for ratification. The change will not enter into force unless it is unanimously ratified by the privileged parties. After two years, if the change does not enter into force, any contracting party may give notice of withdrawal from the treaty. The "withdrawal shall take effect two years after the receipt of the notice of the depository Government." It was the intent of the framers of the Antarctic Treaty that if a majority desired changes and could not agree on them after thirty years, the treaty settlement should be abandoned. *See supra* note 24, at 473.

with resource exploitation is that it raises the question of territorial sovereignty. The Antarctic Treaty could shelve the issue of territorial sovereignty because scientific exploration may be accomplished without reference to title. Mineral and petroleum exploitation face the issue of title directly. Companies whether public or private are not likely to initiate commercial exploitation of these resources unless title is secure.

Exploitation of living resources and icebergs also creates problems with territorial sovereignty. Krill, icebergs, and marine mammals are concentrated within 200 miles of the Antarctic continent. A growing number of States are extending their jurisdiction over ocean resources to within 200 miles of the coast.[45] The most likely result of the U.N. law of the Sea Conference is to provide the coastal State with a 200 mile economic zone with sovereign rights over the exploitation of all resources, living and non-living, in the water column and seabed below.[46] These developments put an added strain on the question of Antarctic sovereignty. When the Antarctic Treaty was drafted, most claimant States would not have asserted rights beyond a narrow territorial sea. Today, a claim to sovereignty would naturally give rise to an economic zone beyond the continental sector.[47]

The views of the various States on resource exploitation can be expected to reflect their underlying position on Antarctic sovereignty. Dr. Robert E. Hughes, U.S. representative to the 8th Antarctic Treaty Consultative Meeting, made this point in Oslo on June 12, 1975:

> Those countries who do not recognize claims to sovereignty would surely have to assert the right to commence mineral resource activities at their will . . . Those who have made claims to sovereignty would contest that view.[48]

Although Dr. Hughes speaks of mineral exploitation, the same point would appear to apply to all resources. The argument is that in the absence of sovereignty, there are no restrictions on resource exploitation except perhaps for treaty prohibitions. The claimant States would argue to the contrary that they have title to all resources in their respective sectors, and no exploitation may take place without their permission.

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45. *See* A. L. Hollic, *The Origins of 200-Mile Offshore Zones*, 71 **Am. J. Int'l. L.** 494 (1977). Hollick points out that some of the new claims, such as that of the U.S., have been limited to fisheries, while others, mostly Latin American nations, have claimed a 200-mile territorial sea.

46. *See* J. Stevenson and B. Oxman, *The Third U.N. Conference on the Law of the Sea*, 69 **Am. J. Int. L.** 763, 764 (1975).

47. Unilateral state practice and the negotiated texts of the U.N. Law of the Sea Conference indicate a trend towards general acceptance of the 200-mile economic zone. Unilateral and multilateral efforts appear to be reinforcing each other in this area. *See supra* note 45; B.H. Oxman, *The Third U.N. Conference on the Law of the Sea: The 1976 N.Y. Sessions*, 71 **Am. J. Int. L.** 247, 250 (1977).

48. E. McDowell, *supra* note 13, at 106.

The Antarctic Treaty contains no specific reference to commercial resource activity. Views as to the implication of the treaty may be expected to reflect once again the underlying positions on territorial sovereignty. The State Department has taken the position that mineral resource activities would fall within the peaceful purposes permitted in accordance with Article I of the Antarctic Treaty.[49] In a broad sense this position would permit exploitation at the present time as long as the particular commerical activity conforms with other provisions of the treaty.[50]

A contrary view states that since the Antarctic Treaty does not directly govern resource exploitation, any action —

> aimed at commercial exploitation of mineral resources would be contrary to the purposes and objectives of the Treaty and therefore should be considered a violation of the Treaty if undertaken before the consent of all consultative parties to the action has been given. [51]

The claimant States are likely to take this point of view because it would prohibit exploitation without their permission, and therefore, indirectly support the argument that they have exclusive rights to the resources in their respective sectors.[52]

Resource exploitation was not discussed at the consultative meetings held during the first ten years of the Antarctic Treaty's existance. The primary reason why there was no discussion was the fear on the part of some States "that any multilateral approach (to resource exploitation) would be detrimental to their territorial claims."[53] Discussion of mineral resources at the seventh consultative meeting in 1972 revealed the basic sensitivity of the issue. Agreement could only be reached to postpone discussion until the eighth consultative meeting in Oslo so that governments would have time to carefully consider their positions.[54] Discussion up to and including the Oslo meeting was limited to mineral and petroleum resources.

The U.S. had a difficult time preparing its position for the Oslo meeting. The Antarctic Policy Group, part of the National Security Council, began to consider the question of mineral and

49. *Legal Status of Areas South of 60° South Latitude*, Dept. of State memorandum, in *U.S. Antarctic Policy: Hearing on U.S. Policy with Respect to Mineral Exploration and Exploitation in the Antarctic Before the Subcommittee on Oceans and International Environment of the Senate Committee on Foreign Relations*, 94th Cong. 1st Sess. 19 (1975) (hereinafter cited as *1975 Hearing*).

50. It has been suggested that the relevant provisions would include: (1) freedom of scientific investigation (Article II), (2) exchange of information and research (Article III), (3) inspection by designated observers (Article VII), and (4) the obligation to provide notice of expeditions (Article VII). *See Antarctic Resources*, Report from the meeting of experts of the Fridtjob Nansen Foundation at Polhgda, May 30-June 10, 1973, *1975 Hearing*, *id.*, at 79.

51. *Ibid.*

52. A claim of exclusive rights to resources has as a corollary that others must obtain permission to exploit those resources. The right to deny such permission would therefore lend support to the exclusive claim.

53. Statement of Dixy Lee Ray, Assistant Secretary of State and chairman, Antarctic Policy Group, *1975 Hearing*, *supra* note 49, at 5.

54. *See Id.*

petroleum exploitation in 1970. A classified National Security Decision Memorandum concluded in early 1973 that the U.S. should seek an agreement that would exclude unilateral resource exploitation in Antarctica.[55] The Arab Oil embargo followed in the fall of 1973. As a result of the energy crisis, the Federal Energy Administration and the Department of the Interior sought to have the above memorandum amended.[56] For awhile there was considerable doubt whether the energy bureaucracy would win out. Testimony before the Subcommittee on Oceans and International Environment of the Senate Foreign Relations Committee in May of 1975 reveals that the energy bureaucracy lost the battle.[57] The U.S. went to Oslo fully committed to finding an international solution to the Antarctic mineral resource issue.[58]

The Oslo meeting was held in June, 1975. No binding agreement was made with regard to Antarctic resources. Instead, the conference manifested a consensus as to the need for an international approach.[59] This consensus does not necessarily indicate any resolution of the underlying positions of States on the question of sovereignty, or whether the treaty impliedly permits resource exploitation. The Final Report of the eighth consultative meeting in Oslo —

> noted that all governments represented . . . urge states and persons to refrain from actions of commerical exploration and exploitation while, acting as Consultative Parties, they seek timely agreed solutions to the problems raised by the possible presence of valuable mineral resources in the Antarctic Treaty Area.[60]

Several of the treaty nations have pressed for a moratorium on mineral and petroleum exploitation.[61] The U.S. —

> has resisted any formal moves in this direction, but has adopted an interim policy of opposing actions by any nation with the purpose of commercial exploitation and exploration of Antarctic mineral resources and urging other nations to join the U.S. in such an interim policy.[62]

The Final Report of the Oslo consultative meeting cited above, in effect, adopts the interim policy of the U.S. One important aspect of any interim policy is the question of licensing. It is unlikely that a private company would attempt mining or drilling operations in Antarctica unless it was licensed to do so by its

55. *See* D. Shapley, *Antarctica's Future: Will Oslo Talks on Resources Mean that Scientists Have to Move Over?* 187 **Science** 820, 821 (March 7, 1975).
56. *Id.*
57. *See supra* note 53, at 6.
58. *See* D. Shapley, *North Pole, South Pole Resources Eyed*, 189 **Science** 365 (Aug. 1, 1975).
59. *See* statement by Dr. Richard E. Hughes, U.S. representative to the 8th Antarctic Treaty Consultative Meeting, in a telephone interview, W. Sullivan, *Resource Study in Antarctica Set*, N.Y. Times, June 29, 1975, at 9, col. 1.
60. **E. McDowell**, *supra* note 13, at 107.
61. *See supra* note 53, at 6.
62. *Id.*, at 6-7.

State of origin. The interim policy adopted at Oslo will probably endure if treaty nations continue to refrain from issuing such licenses.

Plans were made in Oslo to discuss mineral and petroleum resources at a meeting in Paris the following summer. The Paris meeting was held in July of 1976. The issues discussed were considered so sensitive that the participating nations decided against issuing any communique or even indicating the presence of their representatives in Paris.[63]

The U.S. raised the issue of krill exploitation at a meeting held in London from March 14 to 18, 1977 preparatory to the ninth consultative conference.[64] After discussion of a number of proposals, it was unanimously decided to take up the question at the forthcoming meeting.[65] The ninth consultative conference ended in London on October 7, 1977. Although the meetings were held in closed session, some of the results have been disclosed. The participating nations decided to produce a set of interim guidelines for catching krill while detailed plans on long-term arrangements are worked out.[66] The arrangements are likely to provide for pooling information about krill and to impose limits on catching krill.[67] The conference also came to the conclusion that it would be necessary to conduct scientific and ecological surveys before any attempt is made to exploit the mineral or petroleum resources of Antarctica.[68] This position is consistent with the moratorium on commercial exploitation of these resources urged at the Oslo session in 1975.

Three basic options would appear to be available to the treaty nations in dealing with the future exploitation of all Antarctic resources. The first is to completely prohibit all commercial activity on the continent, the continental shelf, and in the waters within a 200 mile radius. The advantage of a prohibition is to preserve the Antarctic continent and surrounding waters for scientific research, the major purpose of the present treaty regime. It is unlikely that this option will be available if commercial production of the various resources mentioned above becomes cost effective. As food, water, and energy become increasingly scarce, nations will probably not refrain from tapping new sources.

The second option is to provide for international regulation

63. *See* C. Farnsworth, *12 Nations Conclude Secret Meeting in Paris on Possible Exploitation of Antarctic Minerals After 1989*, N.Y. Times, July 14, 1976, at 5, col. 2.
64. *See* D. Shapley, *Antarctic Problems: Tiny krill to Usher in New Resource Era*, 196 Science 503, 504 (April 29, 1977).
65. *Id.*
66. *See* A. MacLead, *Sharing Antarctica's Riches*, Christian Sci. M., October 11, 1977, at 4, col. 1.
67. *See* R.D. Hershey Jr., *Exploration of Antarctica May Not Be Good for It*, N.Y. Times, Oct. 9, 1977, § 4 (Week in Review), at 7, col. 1.
68. *See supra* note 66.

of commercial activities in Antarctica. The nations which take part in the consultative meetings under the Antarctic Treaty are already moving in this direction. The problems with this option are substantive, procedural, and administrative.

The substantive problem of permitting resource exploitation under international regulation relates to the underlying issue of sovereignty. The U.S. position is to permit —

> free access to all parts of the area, except specially designated areas (for environmental reasons), to develop natural resources under uniform and non-preferential rules applicable to all nations.[69]

Since the U.S. does not recognize any antarctic claims, free access and equal treatment are consistent with its juridical position. The opposite would be true for the claimant States. Their juridical positions would demand a policy which denied resource exploitation without permission in their respective sectors. The question may be asked if any compromise is possible between these positions. One possibility is a type of decreasing preferential treatment.[70] This approach would give first option or a percentage of revenue to claimant States during the early years of commercial exploitation. A time table could be established so that all distinctions were eventually eliminated. The system would best operate is no reference was made to sectors. For example, it would be better to allocate a percentage of the total Antarctic revenue to the claimant States rather than a percentage of the revenue in their respective sectors. This approach would make preferential treatment more acceptable to the non-claimant States.

International regulation of commercial activities faces the procedural problem of incorporation within the present treaty regime. The U.S. position is to avoid, if possible, reopening the treaty.[71] The U.S. would probably prefer to have all negotiations conducted between the contracting parties who are privileged to attend consultative meetings under Article IX of the treaty. Meetings are currently being conducted with this group of nations. Measures dealing with international regulation of commercial activities could be adopted unanimously by the same group in accordance with Article IX.

There would appear to be little problem dealing with commercial activities on the continent, the "area" assimilated to

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69. *Supra* note 53, at 16.

70. It has been suggested that the parties to the Antarctic Treaty grant concessions as a group with paid into a common fund. *See* E. Hambro, *Some Notes on the Future of the Antarctic Treaty Collaboration*, 68 **Am. J. Int. L.** 217, 224 (1974). It is unlikely that such a plan would be acceptable to the claimant States unless they were to initially share in the fund on a preferential basis. New Zealand officials, for example, have indicated that they expect some form of preferential treatment for claimant States. *See* W. Sullivan, *19 Countries to Discuss Antarctic Resources*, N.Y.Times, January 17, 1977, at 35, col. 6.

71. *See supra* note 53, at 22.

land, by approving measures under Article IX. The more difficult procedural problem is resource exploitation in Antarctic waters. It has been determined that all waters off Antarctica, including floating ice, have the status of high seas, and therefore, are excluded from the treaty regime in accordance with Article VI.[72] For this reason the international regulation of krill and iceberg production could probably not be dealt with by measures under Article IX. Other procedural methods could be employed instead. One possibility is a separate convention, an approach that was taken with Antarctic seals.[73] This alternative would probably be best since it avoids interference with the present treaty regime. The less desirable possibilities are amendment or modification of the treaty in accordance with Article XII, paragraph 1. An amendment which simply attached to the treaty a procedure for the international regulation of krill and icebergs might not be any more disruptive of the present regime than a separate convention. An amendment or modification of Article VI so as to revise the definition of the "area" to include Antarctic waters probably has the most potential for disruption.[74]

One significant question is whether commercial activities on the continental shelf could be fit within the framework of measures adopted under Article IX, or rather are to be included along with krill and icebergs in a separate convention or amendment to the treaty. This paper has drawn a sharp distinction between the "area" assimilated to land under Article VI of the Antarctic Treaty and the waters and floating ice which are considered high seas. The continental shelf as a legal concept is similar to the territorial sea in that it is dependent upon the sovereignty of the coastal State over the adjacent land mass.[75] In the absence of sovereignty under the treaty regime there would be no continental shelf just as there is no territorial sea. Of course, the continental shelf exists in a geographical sense, and would have a legal status similar to the deep seabed beyond national jurisdiction.

The absence of a territorial sea means that all Antarctic waters are high seas, and therefore, outside the treaty regime in

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72. See text, pp. 3 - 4 *supra*.

73. *See* Convention for the conservation of Antarctic Seals, negotiated at London, February 3-11, 1972, 11 **Int. Legal Materials** 251 (1972). The U.S. became the fifth nation to ratify the convention on Dec. 28, 1976. See 76 **Dept. State Bull.** 135 (Feb. 14, 1977). Ratification by 7 of the 12 signatories is necessary for the convention to enter into force.

74. Such a revision is likely to raise the question of sovereignty over the 200-mile resource zone beyond the present treaty "area". To the extent that the "area" is defined so as not to include the waters beyond, it gives the 200-mile resource zone the status of high seas. If the definition of the "area" were revised so as to include the 200-mile resource zone, it could lend support to the argument that a claimant State has the right to a 200-mile resource zone in the absence of or at the termination of the Antarctic Treaty.

75. ". . . the rights of the coastal state in respect to the area of continental shelf that constitutes a natural prolongation of its land territory exist *ipso facto* and *ab initio* by virtue of its sovereignty over the land." North Sea Continental Shelf Cases, (1969) ICJ 3, 22.

accordance with Article VI. But, the continental shelf cannot be assimilated to the high seas for the obvious reason that it is not water. To the extent that the continental shelf may be assimilated to land, it might be included as part of the Antarctic "area" under Article VI. This would make it possible to adopt measures for the international regulation of commercial activities on the continental shelf under Article IX. The advantage of this approach is to combine the regulation of petroleum and mineral activities on the continent and the continental shelf in one procedural system.

The administrative problem with international regulation of resource exploitation relates to whether an international authority should be set up to issue licenses or conduct commercial operations.[76] One possible alternative to an international authority is a scheme whereby contracting parties issue licenses subject to conditions laid out in agreed arrangements. The advantages of national licensing include —

> its simplicity, lack of coast and its consequential avoidance of all the problems said to be inherent in the establishment of an international authority — its location, staffing, powers, cost, etc.[77]

Claimant States are likely to fear that an international authority is inconsistent with their sovereign rights.[78] The more powerful the authority, the more danger the claimant States would fear. For this reason it is unlikely that the authority will be given the power to actually conduct commercial activities. If the authority merely licensed States or their nationals, it would probably be more acceptable to the claimant States.

The last option available to the treaty nations in dealing with the future exploitation of Antarctic resources is to do nothing at all. The danger with this option is obvious. If the exploitation of any of the resources mentioned in this paper becomes cost effective, there is a significant chance that States with territorial claims will decide to assert them in order to take advantage of the resources themselves. At that point international conflict could break out and the treaty would eventually be meaningless. For this reason the option of doing nothing is really not an option at all. The treaty nations will hopefully have enough foresight to avoid such a possibility.

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76. One precedent for an international authority is the machinery being formulated for the deep seabed at the Third U.N. Conference on the Law of the Sea. For an analysis of the possible structure of the deep seabed authority, *see* J. Charney, *The Internation Regime for the Deep Seabed: Past Conflicts and Proposals for Progress*, 17 **Harv. Int. L. J.** 1 (1976).

77. *Supra* note 50, at 83.

78. An international authority, like any international organization, intrudes upon the sovereign rights of a State. But, an international authority which functions to exploit resources appears especially intrusive because resource exploitation, either directly or through licensing and regulation, is a major State function.

CONCLUSION

This paper begins with the hypothesis that Antarctica is increasingly important because of its resources. The question which follows from that hypothesis is whether the legal status quo in Antarctica can withstand the stress posed by future resource exploitation. The answer is dependent on the will of the nations with Antarctic interests. Most commercial activities in Antarctica are only gradually reaching the planning stage. Production has not begun with any resource except krill. This would appear to be the time for States to take action before the realization of benefits from commercial activities hardens national positions. The treaty nations have already commenced discussion leading to an international solution for resource exploitation.[79] International regulation would appear to be the best alternative if the treaty regime is to be preserved. The substantive, procedural, and administrative problems of international regulation have been examined. Each of these problems may be resolved without sacrificing the treaty regime. In the final analysis, it is the ability of the treaty nations to cooperate that will make the difference. Since the Antarctic Treaty has stood as a model of international cooperation from the very beginning, it is not unrealistic to expect that the treaty nations will find a solution that is compatible with the present treaty regime.

79. See text, pp. 6 - 8 *supra*.