The Proposed Regime for the Unilateral Exploitation of Deep Seabed Mineral Resources by the United States

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I. INTRODUCTION

The United States Congress has passed legislation to regulate the conduct of its citizens who desire to exploit the mineral resources of the deep seabed.1 Similar legislation was adopted by the House of Representatives during the previous Congress by a vote of 312 to 80, but failed to pass the Senate prior to adjournment.2 The legislation implicitly authorizes United States citizens to mine the deep ocean floor, primarily for the 1.5 trillion tons of manganese nodules which line the floor of the abyssal depths.4 The legal premises of the Act are

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4. Murphy, supra note 2, at 553. The terms "abyssal depths," "deep seabed," and "deep ocean floor" refer to the ocean floor beyond the limit of any state's jurisdiction. Although the limits of national jurisdiction are not formally settled, the Third United Nations Conference on the Law of the Sea (UNCLOS) is close to agreement that it begins at a point 200 miles from the coast, or at the edge of the continental margin, whichever is further from the coast. See 8 Official Records of the Third United Nations Conference on the Law of the Sea, Informal Composite Negotiating Text Rev. I, U.N. Doc. A/CONF.62/WP.10/Rev. 1 (1977) [hereinafter cited as ICNT]. The ICNT is informal in character and is generally understood to provide a basis for negotiation.
that, pursuant to customary international law, exploration for and recovery of seabed mineral resources beyond the limits of national jurisdiction is protected by the principle of freedom of the seas,\textsuperscript{5} that ownership of the resources involved would vest upon capture, and that no sovereign claim to the seabed itself is necessary to support a claim to harvest the resources thereon, any more than a sovereign claim to the seabed would be necessary to sustain a claim to mid-oceanic fishing rights.\textsuperscript{6}

Simultaneously, the Third United Nations Conference on the Law of the Sea\textsuperscript{7} (UNCLOS), which is charged with codifying and developing a comprehensive international law of the oceans,\textsuperscript{8} has been meeting in Caracas, Geneva, and New York since 1973. Since UNCLOS is structured on a one state, one vote basis, its most recent product, the Informal Composite Negotiating Text, Revision 1\textsuperscript{9} (hereafter ICNT), in some instances strongly reflects the view of its working majority of less developed countries (hereafter LDCs), including their view that the deep seabed, beyond the limits of national jurisdiction, is the "common heritage of mankind," whose exploitation is to be carried out for the benefit of mankind as a whole.\textsuperscript{10} Many of the LDCs have further taken the position that the General Assembly's "Declaration of Principles" resolution of December 17, 1970\textsuperscript{11} states customary international law, and includes a prohibition on obtaining rights to either the area or its resources.\textsuperscript{12} This conclusion may be further reinforced by the General Assembly's "moratorium" resolution of December 15, 1969, which, pending the establishment of a new international regime, attempts to bind states to refrain from all exploitation of the deep seabed.\textsuperscript{13} The resultant conflict between the LDCs and United States positions\textsuperscript{14} concerning ownership of the nodules and the appropriate

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Footnotes:

6. Id. § 3(a)(4).
7. The First and Second United Nations Conferences on the Law of the Sea were convened in 1958 and 1960 respectively.
9. ICNT, supra note 4. As this article goes to press, the UNCLOS delegates are drafting a second revision of the ICNT [hereinafter cited as ICNT 2], which has not yet been finalized. Some hints concerning the direction of ICNT 2 may be gleaned from the already released Report of the Working Group of 21, U.N. Doc. A/CONF.62/C.1/L.27, pts. 1–5, March 28, 1980. See notes 386, 388, 399, 404, 411, & 517 infra.
10. ICNT 2, supra note 9, §§ 136, 137, 140.
12. Id.
14. The United States has received substantial legal support for this position from various members of the world community. See note 284 infra.
manner of their recovery has threatened to deadlock UNCLOS and has strained congressional patience to the point where the pursuit of a unilateral United States policy, without reference to the regime proposed by UNCLOS, has become a distinct possibility. Practically, such a policy is made possible by a monopoly on nodule recovery technology enjoyed by the United States and a few close allies, which, it is speculated, might be willing to "go it alone" with the United States if the international regime which is finally proposed proves unduly burdensome.

This conflict raises four significant issues which this article will explore: first, the strategic and economic necessity of prompt nodule recovery to the United States; second, the potential environmental hazards of nodule recovery based on current levels of scientific knowledge and technological capacity; third, the international legality of a unilateral United States policy, including considerations of the legal status of both the nodules themselves and the subjacent deep seabed; and fourth, the strategic advisability of a unilateral United States approach, including an analysis of the relative benefits of the unilateral and international regimes. It will be seen that, although the United States legislation is or can be made consistent with international law, the strategic advisability of its application is dependent on a subtle balancing of international political conditions, the magnitude of the additional burdens imposed by the proposed international regime on United States mining interests and the extent to which other vital United States interests are protected by the non-seabed provisions of the proposed international regime.

II. THE STRATEGIC, ECONOMIC, AND ENVIRONMENTAL RAMIFICATIONS OF NODULE RECOVERY BY THE UNITED STATES

Before the potential impact of the Deep Seabed Mineral Resources Act may be fully understood, the content of the manganese nodules, their role as an alternative source of vital materials, and the potential environmental consequences of their recovery must be examined. First, the analysis will describe the nodules' composition and the uses for the metals contained therein. Second, both the United States' need for the metals and the possible alleviation of this dependence through development of a United States nodule mining industry will be examined. Third, this section will conclude with a consideration of the potential adverse impact that nodule recovery may have on the environment.

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15. See text accompanying notes 286–91 infra.
16. See note 323 infra.
17. See text accompanying notes 320–78 infra.
18. See text accompanying notes 379–532 infra.
A. The Composition and Economic Uses of Nodules

Although the existence of manganese nodules has been known since the Challenger expedition of 1873–1876, their commercial recovery was not seriously considered until the 1960s. There are now at least thirty organizations in five states which are actively engaging in the development of technology associated with the recovery and processing of deep seabed minerals. United States corporations are among those with the most advanced technology. The importance of the recovery of nodules becomes evident upon examination of their content, which establishes the nodules as an alternative source of several essential metals.

The nodules are found on the deep seabed floor at depths of twelve to twenty thousand feet. They contain a mixture of several elements characterized as strategic materials without which the United States economy would be in jeopardy, and for which the United States currently depends on remote sources potentially subject to preclusion. While the exact process by which the nodules are formed is not definitely known, experts theorize that the method of their formation follows a specific pattern. While some man-made objects known to have been on the ocean floor for twenty or thirty years have been found encrusted with a marketable thickness of minerals, the rate of deposit around organic cores has been measured at one thousandth of a millimeter per one thousand years. Although the renewability of the nodules remains speculative, best estimates indicate

22. For example, Deep Sea Ventures, Inc. has designed an air lift suction device capable of recovering up to two million tons of nodules annually. See B. SKINNER & K. TUREKIAN, MAN AND THE OCEANS 67–68 (1973).
25. Manganese ions in certain underwater environments combine to form manganese dioxide which then precipitates out of the water. As these molecules settle, other metallic ions are attracted to them. These include copper, cobalt, nickel, and small amounts of some 30 other elements. The electrical charges in the metals draw them to sedentary objects such as sharks’ teeth, whale bones, and clumps of various clays and muds. The metals form around a nucleus and continue to collect layer upon layer of minerals. Alexander, Metal-Rich Floor of the Oceans, L.A. Times, Dec. 2, 1973, § 2, at 2, col. 4.
27. Joint Hearings on S. 493, supra note 24, at 214 (statement of Dr. Sylvia Earle).
that the total number of nodules on the seabed is immense and is probably not exhaustible for hundreds, if not thousands, of years.\(^2\) Thus, the seabed contains a virtually limitless supply of manganese, cobalt, copper, and nickel, capable of recovery and refinement by present technology.\(^2\) The essential nature of these minerals is evidenced by the purposes for which they are utilized.

It is estimated that ninety percent of all manganese consumption occurs in the manufacture of iron and steel. In addition to its use as a material for machinery and containers, manganese is an element essential to the oil, gas, and transportation industries. There is no substitute for manganese in its principal uses. Similarly, there is no satisfactory carbide substitute for cobalt, a by-product of nickel and copper. Because of its resistance to high temperatures, cobalt is a critical element in superalloys used for jet engines and turbines. Nickel is also used in superalloys, as well as materials exposed to such corrosives as chemicals and salt water. Substituting other elements for nickel may adversely affect the performance of the product. Copper is extensively used in electrical and military goods. Its conductive capabilities make copper particularly well suited to use in generators and motors.\(^3\)

The importance of these four metals to industrial production is evidenced by the General Service Administration's classification of them as "critical materials." As the following section demonstrates, the United States depends heavily on foreign production for these metals.

### B. The Strategic Importance of Nodule Recovery

In 1975, the United States imported ninety-eight percent of its manganese. The principal suppliers were South Africa, Gabon, Brazil, and

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28. Pacific Ocean reserves alone have been estimated at several hundred billion tons of high grade nodules, with a life expectancy based on current rates of consumption of over 1000 years. See Alexander, supra note 25, at 2. See also T. KRONMILLER, THE LAWFULNESS OF DEEP SEA BED MINING 457 (1979) [hereinafter cited as KRONMILLER].

29. See Hearings on S. 2878, supra note 23, at 795–97, which describes the three primary methods of commercial nodule mining: dragline bucket, continuous bucket line, and hydraulic suction dredging. The dragline and continuous bucket line methods use dredge buckets attached to steel ropes. Mud and nodules enter as the buckets are dragged through the area. As the buckets are hauled up, the mud is washed through the wire mesh of the buckets, leaving only nodules. The hydraulic suction method connects the ship with the seabed through a conduit. A collector scoops up nodules which enter the water stream in the conduit. Injected air or pumps suck the nodules up the conduit to the ship. See also Hearings on H.R. 3350 Before the House Comm. on International Relations and Its Subcomms. on International Organization and on International Economic Policy and Trade, 95th Cong., 2d Sess. 79 (1978) (statement of Northcutt Ely) [hereinafter cited as Hearings on H.R. 3350].

By 1978, the United States was importing all of its manganese. It is estimated that the non-communist demand will exceed supply for the first time in about 1985. By the year 2000, the estimated total annual requirements of the non-communist powers will be approximately six million tons, with the non-communist supply providing only about 3.7 million tons. Specifically, the Australian supply, which consists of one mine, Groote Eylandt, will be depleted shortly after the year 2000, while Gabon's resources will be exhausted some ten to fifteen years later. Further, because of South Africa's precarious political structure, and because most of its reserves are of unconfirmed size, and are in remote areas under the Kalahari Desert, experts are skeptical of both the size and availability of this supply.

In 1975, the United States imported ninety-eight percent of its cobalt, with seventy-five percent of its imports coming from Zaire, which produces over half of the world's cobalt. By 1978, the United States was importing all of its cobalt supplies. The United States has had no domestic production of either manganese or cobalt since 1977. The imports of nickel, principally from Canada, have also steadily risen from seventy-two percent in 1975 to ninety percent in 1979.

Although the United States was a net exporter of copper in 1975, in 1979 it imported eighteen percent of its consumption. The Department of Interior has estimated that the cost of these non-fuel mineral imports will equal $20 billion in the year 1985 and $52 billion by the year 2000. These imports have increased the United States' trade deficit and further undermined the value of the dollar.

A critical variable in projecting future supplies and costs is the possibility of cartelization by producing states which may discriminate

31. Joint Hearings on S. 493, supra note 24, at 198 (statement of Dr. James Curiin); Hearings on H.R. 3350, supra note 29, at 119 (statement of Stephen Krasner).
34. Id. at 157.
35. Id. at 160-61.
39. Id. See also Joint Hearings on S. 493, supra note 24, at 156 (statement of Franz Dykstra).
41. Joint Hearings on S. 493, supra note 24, at 215 (statement of Dr. Sylvia Earle).
43. Joint Hearings on S. 493, supra note 24, at 215 (statement of Dr. Sylvia Earle).
45. Id. The United States Bureau of Mines estimated the 1972 trade deficit for minerals and processed minerals at $6 billion. In 1973, this figure increased by 25% to $8 billion.
against non-communist consumers. While some experts doubt that the producing states will form cartels in the near future, others cite recent statements and actions of mineral producing states as precursors of formal alliances. Such alliances could result in trade embargoes and differential pricing which might cripple the consuming states' production of steel and other essential materials. Even in the absence of cartelization, dwindling land-based supplies will, by the end of the century, make the free world primarily dependent on the Soviet Union and South Africa for its manganese. Because of the existing Soviet presence in Southern Africa, and because of the questionable legal status of Namibia, in which South Africa's Kalahari resources are located, some experts believe that by the time the free world exhausts its other sources, the remaining supplies will be found within the borders of the Soviet Union. While the immediacy of this possibility may be open to debate, the need for a secure supply of critical minerals is unquestionable.

Estimates indicate that deep seabed mining can become a major source of the four critical metals. A single mining site recovering three million tons of nodules could produce 750,000 tons of manganese, 4,000 tons of cobalt, 37,000 tons of copper, and 42,000 tons of nickel. The waste material, called tailings, which results from the

47. Id. at 199 (statement of Dr. James Curlin); Hearings on H.R. 3350, supra note 29, at 117 (statement of Stephen Krasner).

48. At a recent meeting, for example, the Intergovernmental Council of Copper Exporting Nations, the members of which include Chile, Peru, Zaire, and Zambia, discussed copper pricing and alluded to future concerted actions. See Thompson, supra note 44, at 7. See also Hearings on H.R. 3350, supra note 29, at 19 (statement of Monte Canfield); Report on H.R. 2759, supra note 30, at 35 (statement of Rep. Murphy) (discussing the metal marketing implications of Zaire's 1978 announcement that United States consumers could obtain only 70% of the amount purchased in 1977, and the statements of policy enunciated by the developing states in multilateral fora concerning new economic orders).

49. See Hearings on S. 2878, supra note 21, at 803 (introductory remarks of Sen. Metcalf), quoting Fish, Third World Goods Price Rise Feared, J. COM. Dec. 27, 1973: "[that developed countries are concerned about] an Arab-led movement to organize developing countries to raise prices not only of oil, but of aluminum, iron ore, copper and other strategic materials . . . ." See also Bergsten, The Threat from the Third World, 11 FOREIGN POLICY 102, 108-09 (1973) (an analysis of the collusive arrangements of natural resource producers: "The suppliers would be even more likely to use their monopoly power to charge higher prices for their raw materials, directly or through such techniques as insisting that they process the materials themselves. Either withholding or price gouging could hurt U.S. security . . . . Either would hurt U.S. efforts to combat domestic inflation and restore equilibrium in our international balance of payments.").

50. Joint Hearings on S. 493, supra note 24, at 197 (statement of Dr. James Curlin).

51. Id. at 169-70 (statement of Franz Dykstra). "Over 80% of the world production of most of these materials [chromium, cobalt, gold, platinum, palladium, and diamonds] could conceivably be controlled by the potential Soviet supercartel — over 70% of cobalt, over 60% of manganese." Id. at 169, quoting Suprowicz, Fear Soviet Supercartel for Critical Minerals, 51 PURCHASING 42 (1978).

52. See Hearings on H.R. 3350, supra note 29, at 79 (statement of Northcutt Ely); Report on H.R. 2759, supra note 30, at 37 (statement of Rep. Murphy) (each to the effect that the four critical metals are vital to both national economy and national defense).
processing operations, might be used for manganese stockpiles, since even they contain higher grade ore than domestic deposits.\textsuperscript{54} It is estimated that if, in the year 2000, United States companies produced sixteen million tons of nodules, the net imports of manganese and cobalt could be reduced from 100 percent to zero, with significant reductions in the imports of copper and nickel.\textsuperscript{55}

It should be recalled that manganese, cobalt, copper, and nickel are classified as critical materials, a fact which indicates a significant national security interest in the metals.\textsuperscript{56} As Northcutt Ely has written, "It is no exaggeration to say that whoever controls the free world's supply of manganese — whether the Soviet Union, the Republic of South Africa or the International Sea-bed Authority — will control the rate of the free world's steel production, and hence its whole industrial economy."\textsuperscript{57}

Thus, independence from foreign supplies of critical metals would ensure the continued growth and productivity of the United States' industrial sector. Further, through the development of new mineral resources, price increases would be ameliorated and resulting shortages could be averted.\textsuperscript{58}

\section*{C. The Environmental Ramifications of Deep Seabed Mining}

The environmental impacts of deep seabed exploitation prompt international concern for two reasons. First, any disruption of natural environmental processes in the ocean should, per se, be a matter of international concern. Second, the effects of that disruption may interfere with other reasonable uses of the oceans and thereby contravene a prohibitory norm of international law.\textsuperscript{59} Cognizant of the fact that

\textsuperscript{53} Report on H.R. 2759, supra note 30, at 36.

\textsuperscript{54} Hearings on S. 2878, supra note 21, at 95–97. (News Release, Kennecott Copper Corp., Jan. 29, 1974).

\textsuperscript{55} Joint Hearings on S. 493, supra note 24, at 123 (statement by Marne Dubs).


\textsuperscript{57} Joint Hearings on S. 493, supra note 24, at 180 (statement of Northcutt Ely).

\textsuperscript{58} Hearings on H.R. 3350, supra note 29, at 117 (statement of Stephen Krasner). Mr. Krasner, while playing down the danger of cartelization, recognizes the development of the deep seabed as a positive measure to avert any such organization. See also S. Kongstad & S. Andersen, Economic and Political Preconditions for Nodule Mining (1979) (an analysis of the importance of manganese nodules as an alternative mineral source).

Other tangible economic benefits would likely accrue. Should nodule exploitation occur in the vicinity of Hawaii, a possibility which now seems quite likely, the public would benefit from the development of new industry. Once established, a nodule processing plant would provide some 2,400 permanent jobs and would increase the gross state product by $335 million. The state would continue to benefit by the taxes on gross revenues derived from sales of refined materials. Joint Hearings on S. 493, supra note 24, at 91 (statement of Sen. Inouye). Such consequences may also be reasonably expected to inure to the benefit of other states with processing plants.

\textsuperscript{59} The concept of reasonableness as a limitation on deep seabed exploitation is discussed in
some displacement of the seabed will inevitably occur in the mining process, Congress appropriated $3 million in 1976 to fund basic studies of the ocean environment by the National Oceanic and Atmospheric Administration (NOAA).\textsuperscript{60} NOAA in turn developed the Deep Ocean Mining Environmental Studies (DOMES) to conduct the requisite tests and assimilate the collected data.\textsuperscript{61} The purpose of these studies was to determine what natural processes occur both in the ocean and on the seabed in order that environmental policies could be developed\textsuperscript{62} in conformity with the National Environmental Protection Act of 1969\textsuperscript{63} which would control the manner and extent of deep seabed operations.

The DOMES project employs a two-pronged analysis of the ocean environment. Phase I, which began before prototype mining equipment was installed at the test sites, was designed to obtain sufficient data to determine both the sensitivities of the selected oceanic zones and the processes which affect the distribution of animal and plant life.\textsuperscript{64} Based on this data, limited projections of mining impacts on the area were made.\textsuperscript{65} Phase II, which began in 1978, was designed to refine the projections of environmental impact made by Phase I by monitoring prototype mining operations in the test areas.\textsuperscript{66} From the test data, the effects of large scale mining operations were to be estimated before such operations actually began.\textsuperscript{67} While the results of

\textit{the text accompanying notes 175–78 infra.} It is clear that the right to disrupt the seabed for purposes of recovering manganese nodules is limited by other reasonable uses of ocean resources. Thus, while commercial miners have the right to dredge the nodules, the exercise of that right may not unreasonably interfere with the rights, for example, of commercial fishermen.

60. \textit{Hearings on H.R. 3350, supra note 29, at 149 (statement of James Barnes).}
62. Id.
64. Id. at ix.
65. A summary of the potential environmental impacts projected from the Phase I studies is contained in \textit{id.} at xii-xiv.
66. Id. at 1.
67. Id. at xi-xii. The inputs and outputs for the mining system were estimated as follows:

A. Input material drawn into collector

\begin{tabular}{|l|l|}
\hline
Nodules & 5200 mt \\
Sediment & $3.6 \times 10^4$ mt \\
Biota & 783 kg \\
Water & $10^5$ m$^3$ \\
\hline
\end{tabular}

B. Discharge from the sediment rejection subsystem

\begin{tabular}{|l|l|}
\hline
Nodules & 150 mt (dry weight) \\
Sediment & $3.5 \times 10^4$ mt \\
Biota & 760 kg \\
Water & $8 \times 10^4$ m$^3$ \\
\hline
\end{tabular}
Phase II are not yet complete, Congress has already received testimony concerning the conclusions of Phase I. Examination of the nature of the Phase I tests reveals not only the inherent limitations of the project, but the complexity of the ocean environment itself.

The three test sites used for both the Phase I and Phase II studies are located in an area of the North Pacific considered highly favorable for commercial mining. The sites are approximately 500 to 3,000 miles off the western coast of Mexico.\(^6^8\) The Phase I results, which represent a compilation of several years' worth of data collection, and independent reports of other oceanographic studies,\(^6^9\) give a profile of conditions in the three sites. Extensive testing of the water temperature,\(^7^0\) content,\(^7^1\) and movement\(^7^2\) resulted in the conclusion that the ocean in this area is composed of a variety of discrete zones. For example, if a particular water column in the test site from the surface to the seabed were examined, the temperature, salinity, metal and oxygen contents, and level of light penetration would vary according to depth. Similarly, the current on the surface,\(^7^3\) which is influenced by prevailing winds, and the subsurface currents,\(^7^4\) which appear to be influenced by a variety of forces, might well be in conflict with each other. If another column of water, even in the same general area, were then tested, the results would, in all probability, vary from the first result. While the Phase I project was able to determine the predominant patterns of the water's characteristics,\(^7^5\) the reasons for those patterns remain largely unknown. Thus, the results of Phase I present a detailed, but less than

<table>
<thead>
<tr>
<th>C. Surface plume discharge</th>
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<tbody>
<tr>
<td>Nodules</td>
<td>50 mt</td>
</tr>
<tr>
<td>Sediment</td>
<td>100 mt</td>
</tr>
<tr>
<td>Biota</td>
<td>23 kg</td>
</tr>
<tr>
<td>Water</td>
<td>(2 \times 10^4 \text{ m}^3)</td>
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\(^6^8\) Id. at 3.
\(^6^9\) Id. at 7.
\(^7^0\) Id. at 15–18; OZTURGUT, supra note 61, at 14–15.
\(^7^1\) DOMES I REPORT, supra note 63, at 19.
\(^7^2\) OZTURGUT, supra note 61, at 11.
\(^7^3\) The various tradewinds are evaluated and their effects on surface currents are detailed in DOMES I REPORT, supra note 63, at 8. It appears that two strong westward currents, the Northern and Southern Equatorial currents, are disrupted by a corridor of eastward flow from the Equatorial Counter-Current.
\(^7^4\) See OZTURGUT, supra note 61, at 12. It appears that the upper water currents varied both at the sites and the various depths of the locations. For example, at the site designated B, the data was sharply conflicting, with some tests indicating a generally westward flow while prior tests indicated an eastward pattern. It was theorized that a shift in the North Equatorial current accounted for the variance. Further, measurements of current speed were taken from 6 to 50 meters above the ocean floor. The speed varied from 2.1 centimeters per second at one site to 5.2 centimeters per second at another. However, no direct measurements of bottom currents presently exist. Id. at 49, 50.
\(^7^5\) See, e.g., OZTURGUT, supra note 61, at 18 (discussion of the salinity of the water). It is clear from the tests that the saline content of the water fluctuates between a fixed high and low level. While certain patterns have emerged, no adequate explanation for the variability of the levels has been formulated.
comprehensive, description of the natural conditions of the water in the three test areas.

Phase I also included extensive studies of the plant and animal life present in the test areas. By the use of direct sampling and underwater photography, the researchers were able to discern many types of indigenous organisms; some which moved freely through the water and others which remained in a fairly limited area. The smallest of these organisms, both vegetable and animal, form the most basic elements of the food chain. Thus, their continued existence is of the utmost importance. Alterations in these simple organisms would be transmitted to the larger organisms which feed upon them. The significance of this chain of cause and effect is evident from an analysis of the Phase I projections concerning the prospective impact of seabed mining.

While the details of the mining operations have already been discussed at some length, it should be recalled that the method used by the DOMES project involved a continuous line bucket system. In that process, nodules are scooped off the seabed by buckets which are then pulled up to the ship by means of a cable. As the bucket rises, the excess sediment and particles from the nodules are washed through the wire mesh. Thus, a "plume" of material is discharged through the lower sections of water. When the bucket reaches the surface and the nodules are pulled out, a second discharge, referred to as the "surface plume" occurs. Depending on the currents and the amount of sediment, both plumes may spread out over a large area of the surface and subsurface. A number of detrimental effects are likely to result from the plume and the subsequent settling of its particles.

The plumes initially interfere with the amount of light penetrating the surface, thereby affecting the organisms which need light to survive. As the particles settle, they will be consumed by the small organisms known as "filter feeders." If the feeder ingests an abnormally

76. Id. at 35-49; DOMES I REPORT, supra note 63, at 51-77.
77. DOMES I REPORT, supra note 63, at 95.
78. OZTURGUT, supra note 61, at 68.
79. See DOMES I REPORT, supra note 63, at 74-79 (discussing the relationships of the larger fish with particular emphasis being placed on the eating habits of the commercially fished species).
80. Id. at 44.
81. See OZTURGUT, supra note 61, at 105; DOMES I REPORT, supra note 63, at 65. Four major effects of particle ingestion are listed in the DOMES I Report: interference with respiratory and feeding appendages, increased expenditure of energy by filter feeders, increased sinking rates of certain organisms, and trace metal effects.
82. The continuous line bucket and hydraulic line methods are described in note 29 supra.
83. For a description of the mining system and for a prediction of the surface and benthic discharges, see OZTURGUT, supra note 61, at 5, 71.
84. For a description of the surface discharge procedure, see DOMES I REPORT, supra note 63, at 2-4.
85. OZTURGUT, supra note 61, at 95.
large amount of toxic materials or heavy metals, the toxic materials will
concentrate in it. When the larger organisms feed on the saturated
smaller ones, the increased concentration of toxic material is passed on
to them. This pattern continues throughout the food chain, eventually
reaching the large migratory species, such as tuna, which are commer-
cially fished.\textsuperscript{86} As a further result of the subsurface plume, the DOMES
studies have recognized that certain migratory species will not swim
through cloudy waters. Thus, if a sufficiently large disturbance of the
seabed were to occur and the currents carry the turbidity to the east as
noted in DOMES, a wall of cloudy water would stand between the
migrating fish and the fishermen of the coastal states.\textsuperscript{87}

On the floor of the deep seabed, effects which are even more
devastating could occur. All but a small portion of the deep sea
organisms live within the top centimeter of the sea floor.\textsuperscript{88} These
simple organisms are unadapted to burrowing through sediment. The
plume which would result from the initial scooping operation would
cause a thick blanket of sediment to settle on top of the organisms in
the area. The ones directly subjacent to the fallout would die of
suffocation while others, unable to burrow to food supplies, would die
d of starvation.\textsuperscript{89} The full effect of large scale destruction of the bottom
dwelling organisms is not yet known. However, if they form an
integral part of the ocean environment, it is reasonable to assume that
their destruction would cause ecological repercussions throughout the
food chain.\textsuperscript{90} Despite these predictions, the general conclusion of the
Phase I research is that the short term effects of deep seabed mining,
while locally detrimental, are not unduly harmful to the environment
as a whole.

The limitations of this conclusion are apparent from the studies
themselves, as well as from testimony delivered in the committee
hearings referred to above. First, the area tested was limited both in
size and depth. The deepest seabed measurements came from approxi-
mately 16,000 feet.\textsuperscript{91} While mining will undoubtedly occur at those
depths, other nodules are found in depths of up to 20,000 feet.\textsuperscript{92} The
research in the North Pacific has proven the variability of the ocean

\begin{footnotes}
\item[86] Id. at 105.
\item[87] Id. at 105–06. Such a disruption of tuna, for example, could have a disastrous effect on
North and South American fishing industries. Should the effects of deep seabed mining reach that
level of interference, the legal aspects of the environmental interests would become applicable.
\item[88] Id. at 111.
\item[89] DOMES I REPORT, supra note 63, at 148–49.
\item[90] OZTURGUT, supra note 61, at 101–03. While the rule of change in the food chain may not
be linear, it is clear from the DOMES conclusions that an alteration of the basic elements of the
food chain would significantly impact on the entire ecological balance of the ocean area.
\item[91] See, e.g., DOMES I REPORT, supra note 63, at 89. Nutrient samples were taken at around
5,100 meters.
\item[92] See note 23 supra.
\end{footnotes}
environments even in the same general vicinity. Conclusions based on
data obtained in that area at those depths should be limited strictly to
those specific areas tested. Due to the complexity of the ocean environ-
ment detailed above, assumptions about the nature of the ocean at
different latitudes and depths are not warranted.

Second, the mining impact projections were limited to short term
effects resulting from the continuous line bucket method. Long term
projections were not made. From expert testimony given at the
congressional hearings, it is evident that the nodules contain large
amounts of other materials, both innocuous and toxic. It was
estimated that a three metal processing plant with a dry weight nodule
input of three million tons per year would produce 150,000 tons of
toxic wastes, the disposal of which remains problematic. Some sug-
gest that the discharge of these wastes into the ocean would have no
greater impact on the environment than discharged wastes from other
commercial ocean projects. However, even though commercial
fishing vessels may release the same amount of material into the ocean,
these are not toxic. No comparable release of toxic materials on a
repeated and widespread basis has occurred against which accurate
measurements of the detrimental impact can be gauged.

Because of the limited nature of the tests and the findings based
upon them, no accurate conclusions may be drawn at this time concern-
ing the effects of mining on the ocean environment. Without such
conclusions, no comprehensive environmental policy may be formu-
lated against which Environmental Impact Statements may be judged.
The dangers of unfounded conclusions at this point could result in
extreme and irreparable damage to the environment. For example,

93. See OZTURGUT, supra note 61, at 3:
Furthermore, analysis is based on a standard mining ship production of 5,000 mt (metric
tons) of nodules per day, a surface discharge rate of 0.23 m³/5, with a volume fraction
concentration of solids of approximately 0.02, most of which is fine pelagic clays and silts.
These are best estimates based on mining industry input, and represent the magnitudes of
discharge expected in the early stages of the industry.
At the outset of the report, the authors indicate that "possible long-term effects from mining are
not addressed in this report." Id. at vi.
94. Joint Hearings on S. 493, supra note 24, at 190 (statement of Richard Frank). Mr. Frank
estimates that even if the manganese were extracted from the nodules, the usable materials would
comprise only about one-third of the nodule mass.
95. Id. at 237–38 (statement of James Barnes).
96. Id. at 146 (statement of Hope Robertson).
97. KRONMILLER, supra note 28, at 457, states: "The discharge of vessel pollutants is
inevitable in sea-borne operations. It appears that deep seabed mining vessels are inherently no
greater offenders with respect to this sort of pollution than are fishing vessels." Even though some
toxic substances are present in the water column naturally, there is a fundamental distinction
between the discharge of fish waste and of toxic materials on the surface of the water.
98. See, e.g., Joint Hearings on S. 493, supra note 24, at 117 (statement of Marne Dubs):
"In reality, we expect that the rules and regulations for exploration can be promulgated in a
shorter time and that the programmatic E.I.S. can be issued much sooner as a result of the work
recent explorations of the deep seabed in other areas of the Pacific have uncovered large beds of complex organisms thriving in the nutrient rich deposits made by the continuous discharges of vents in the sea floor. These vents spew clouds of 350 degree water vapor laden with minerals. The origin of these organisms is unknown, as are the processes by which the hot water vents are formed. Disruption of this seabed area could have a variety of unforeseen consequences, many of which could have an effect on the rest of the coastal waters. Should uncontrolled mining operations be permitted to intrude before these systems are better understood, catastrophic results might very well follow. For this reason, the Director of NOAA has stressed the need for more comprehensive data before large scale operations are permitted.

III. THE INTERNATIONAL LEGALITY OF UNILATERAL EXPLOITATION CLAIMS

At the outset, the question may be posed whether the issue of unilateral exploitation of the deep seabed is really a legal issue at all. The United States, after all, is a dualist system with reference to customary international law, and applies such law only when it is consistent with the latest expression of United States law. Even as to treaties, the United States will recognize and enforce its obligations pursuant to article VI of the Constitution only when there is no inconsistent superseding statute. Thus, any arguable international illegality would interpose no inevitable obstacle under United States domestic law to the legislation.

Within the context of the international legal system, of course, the opposite result obtains. Municipal or domestic legislation is not a defense to an asserted international delict. Substantial controversy concerning the legality of unilateral ocean mining currently exists among the nations of the world. Although the United States considers deep ocean mining to be a freedom of the seas similar to the freedom to fish, mostly less developed states consider such activity already accomplished [in the DOMES program]. The imprecision of this statement is readily apparent: while NOAA has not quantified and defined specific adverse impacts, the conclusion that none exist is, at this point, premature.

99. The explorations of the submarine Alvin are discussed in note 192 infra.
100. Joint Hearings on S. 493, supra note 24, at 189, 195 (statement of Richard Frank).
101. See, e.g., Shoeder v. Bissell, 5 F.2d 838 (D. Conn. 1925); RESTATEMENT (SECOND) FOREIGN RELATIONS LAW OF THE UNITED STATES § 3, Comment j (1965).
104. See, e.g., Joint Hearings on S. 493, supra note 24, at 105 (statement of Alan Berlind); Letter to the Author from William Newlin, Office of the Law of the Sea Negotiations, United States Department of State (June 21, 1977).
violative of international law. These states assert that exploitation may occur only under the supervision of an international authority, with the profits being distributed on an "equitable basis" among all states of the world. Thus, the United States should fully consider the international legal ramifications before the implementation of legislation in order to avoid potential international liability, and to mitigate the political consequences of pursuing unilateral action. As one commentator observed:

Any legal regime for a particular purpose . . . must be framed with due regard for established principles in the law of the sea: the accepted practices of centuries may require modification, but it would neither be practicable nor desirable to dismiss them as no longer relevant. Unlike outer space, ocean space is not a tabula rasa, and its legal history cannot be ignored.

The International Court of Justice expressed the legal corollary to this policy interest in the Anglo-Norwegian Fisheries Case, where it held:

The delimitation of sea areas always has an international aspect; it cannot depend merely upon the will of the coastal State as expressed in its municipal law. Although it is true that the act of delimitation is necessarily a unilateral act, because only the coastal State is competent to undertake it, the validity of the delimitation with regard to other States depends upon international law.

The predominance of this rule of law, therefore, compels an examination of the historical doctrines and precedents which form the bases for customary international law. Customary international law consists of generally recognized limitations on state behavior which are applied by the states of the world because they are perceived as binding. Evidence of international custom can only be formed by analyzing the actions, practices, and policies of the states of the world. Thus, from an international perspective, political considerations merge with legal

105. Moratorium Resolution, supra note 13; Joint Hearings on S. 493, supra note 24, at 105 (statement of Alan Berlind).
106. See ICNT, supra note 4, annex II, art. 12.
107. Actual legal liability can, of course, be precluded by invocation of the Connally Reservation, 61 Stat. 1218 (1946).
108. See text accompanying notes 385-431 infra.
111. Id. at 132.
ones insofar as the political policies of states affect the status of customary international law.

To simplify this analysis, a chronological approach to the status of international law will be employed. First, the customary law of the sea prior to the 1958 Conventions on the Law of the Sea will be described. Second, the 1958 Conventions will be examined for evidence of a positive law restriction on unilateral deep ocean mining or on claims to exclusive mining tracts. Third, the United Nations General Assembly declarations of 1959 and 1960 will be considered in light of their potential effect on the international custom. Finally, developments since the convening of UNCLOS III in 1973 will be explored for more recent customary changes. Special attention will be given to the current actions, practices, and policies of the states of the world.\footnote{114}{See text accompanying note 73 supra.}

A. The Historical International Doctrine

The Permanent Court of International Justice, in \textit{The S.S. Lotus}, stated as a fundamental maxim of international law, that "restrictions upon the independence of States cannot . . . be presumed."\footnote{115}{The S.S. Lotus, [1927] P.C.I.J. ser. A, No. 10, at 19 [hereinafter cited as Lotus Case].} This conclusion flows from the principle that new rules of customary international law result exclusively from patterns of acquiescence combined with \textit{opinio juris}, the recognition of such rules as legally binding.\footnote{116}{I. Brownlie, \textit{Principles of Public International Law} 29 (2d ed. 1973).} The \textit{Lotus} case also elaborated the process of customary international legal regulation:

\begin{quote}
Far from laying down a general prohibition to the effect that States may not extend the application of their laws and the jurisdiction of their courts to persons, property, and acts outside their territory, it leaves them in this respect a wide measure of discretion which is only limited in certain cases by \textit{prohibitive} rules.\footnote{117}{Lotus Case, supra note 115, at 18 (emphasis added).}
\end{quote}

The International Court of Justice has also adopted this approach as the basis of customary international law. Where the court has been asked to declare acts in violation of customary international law, the court has, in those cases in which the act has been deemed valid, often reasoned in the "double-negative" form, holding the act "not inconsistent with" or "not contrary to" customary international law.\footnote{118}{See, e.g., Fisheries Case, supra note 110, at 143, where the Court held that "the method employed for the delimitation of the fisheries zone by the Royal Norwegian Decree of July 12, 1935, is not contrary to international law; and . . . that the base-lines fixed by said Decree . . . are not contrary to international law." (Emphasis added.)} Such reasoning
reaffirms the court's unwillingness to presume restrictions on states which are not recognized in customary international norms.

Thus, the legality of deep seabed mining becomes synonymous with the failure to find a binding prohibitory norm in either positive or customary international law. Professor Lauterpacht addressed this issue in 1950, when the analogous issue of justifying continental shelf claims beyond traditional boundaries was contested:

[W]ith regard to the submarine areas adjacent to the coast, the assertion of sovereignty over them would constitute a drastic change in the law only if it could be shown that the international law of the sea . . . actually prohibited, instead of being merely silent on the matter, the appropriation of the sea-bed and the subsoil outside the territorial waters. ¹¹⁹

Although this general approach to principles of law has long been accepted, exploitation of deep seabed areas has not been considered to be subject to international law until recently. ¹²⁰ At the 1948 conference of the International Law Association, it was possible to argue that:

Fortunately, we need not rack our brains about the legal grounds on which annexations (past the continental shelf) could be upheld, the exploitation of deeper ocean regions not yet being a technical possibility. Whilst it is true that scientists are already making plans for ocean drillings at more than 300 metres depth of water, the realization of these plans (assuming them to be technically practicable) will entail such enormous capital investments . . . that it may safely be left to future generations to find legal grounds on which to justify the distribution of the deeper ocean regions.¹²¹

Although these statements support the claim that no historical rule against deep seabed exploitation exists, the absence of prohibitory precedent can hardly be totally satisfying, since the reason for the lack of law is undoubtedly the absence of any technological capacity to exploit. Historically, the major developments in ocean law occurred at a time when the primary uses for the sea were fishing and navigation. Consequently, for many years, the freedom of the seas doctrine was thought to be limited to fishing, navigation,¹²² and possibly sedentary

The LDCs have seized upon this fact in an attempt to support their contention that freedom of the seas never applied to seabed mining. However, this interpretation would contravene the *Lotus* rationale and deviate from the practice of states in accommodating new uses of the seas within the "freedom of the seas" doctrine.

The concept of freedom to exploit the seas, without inhibiting the freedom to traverse them, is the historical compromise between the *res nullius* and the *res communis omnium* principles.

The *res nullius* and *terra nullius* principles were recognized as early as the *jus gentium* of Roman law. Generally, title to any *res nullius* or *terra nullius* is obtained by satisfying the requirement of occupation. Occupation has two requirements: first, that the claimed thing actually possesses *res nullius* status, and second, that "effective control" be established either by capture of a *res nullius* object, or by "occupation" of the *terra nullius* place. The surface of the sea and the air were deemed *res communis omnium* due to the impossibility of satisfying the "effective control" requirement with respect to them.

*Res nullius* objects have been historically recognized both in the

123. See, e.g., Young, *supra* note 109, at 645, n. 18, where the alternative bases of prescription and mere occupation concerning sedentary fisheries are described.

124. Effectively, this position asserts that "that which is not specifically permitted is prohibited." This is directly antithetical to the *Lotus* holding that "restrictions on the sovereignty of states must not be presumed." See *Lotus Case*, *supra* note 115, at 15. To undermine this holding would be to substantially derogate from the interpretation of state sovereignty which has prevailed throughout history. *Merriam, History of the Theory of Sovereignty Since Rousseau, 12 Studies in History, Economics and Public Law 360 (1900).*

125. Submarine cables and pipelines furnish an appropriate example. Long after they were introduced, some writers still questioned the validity of their emplacement as an exercise of the freedom of the seas. Despite the non-existence of such technology during the formative stages of sea law development, the validity of its use had clearly been recognized by 1958 when the Convention on the High Seas was concluded. On the issue of whether freedom of the seas encompasses more than pre-existing uses, the Convention, in setting out the enumerated "four freedoms" of navigation, fishing, cables and pipelines, and overflight, is careful to introduce them, *inter alia*, and further permits the exercise of "other [freedoms] recognized by the general principles of international law." *Convention on the High Seas, done* April 28, 1958, 13 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82 (in force Sept. 30, 1962) [hereinafter cited as Convention on the High Seas]; see also Burton, *Freedom of the Seas: International Law Applicable to Deep Seabed Mining Claims*, 29 STAN. L. REV. 1135, 1174 (1977).

126. *Res nullius*, literally, is "the thing of nobody." It signifies a thing which has no owner, either because a former owner has abandoned it, or because it has never been appropriated by any person. *Black's Law Dictionary* 1470 (4th ed. rev. 1968).

127. "Things common to all; that is, those things which are used and enjoyed by everyone, even in single parts, but can never be exclusively acquired as a whole . . . ." *Black's Law Dictionary* 1469 (4th ed. rev. 1968).


129. E. Vattel, *Le Droit des gens, principes de la loi naturelle, appliques à la conduite et aux affaires des souverains* 106 (1758) [hereinafter cited as Vattel].


oceans and on land. Such objects include fish,\textsuperscript{132} free-floating ambergris,\textsuperscript{133} pearls,\textsuperscript{134} sponges,\textsuperscript{135} free-floating goods from wrecked ships,\textsuperscript{136} and manganese nodules themselves.\textsuperscript{137} On land, such objects have included wild animals and birds,\textsuperscript{138} as well as unsevered guano\textsuperscript{139} and coal deposits.\textsuperscript{140} The ownership of such resources may be validly

132. The \textit{res nullius} doctrine was applied to fish as early as the 17th century by Hugo Grotius, author of the famous analogy: "When the slave says: 'The sea is certainly common to all persons,' the fisherman agrees; but when the slave adds: 'Then what is found in the common sea is common property,' he rightly objects, saying: 'But what my net and hooks have taken, is absolutely my own.'" H. GROTIUS, \textit{supra} note 89, at 29.

133. E. BROWN, \textit{THE LEGAL REGIME OF HYDROSPACE} 83 (1971); \textit{see also} G. HACKWORTH, \textit{DIGEST OF INTERNATIONAL LAW} 674 (1941).


135. \textit{Id.}

136. \textit{Id.}

137. When manganese nodules were first captured in 1873 by the famous \textit{Challenger} expedition, their rightful ownership by their captors was not questioned. Goldie, \textit{supra} note 134, at 797.


139. In 1856, the United States Congress passed the Guano Islands Act, 11 Stat. 119 (1856), \textit{reenacted} 48 U.S.C. §§ 1411–1419 (1976). This act allowed United States citizens who discovered guano on unclaimed islands, at the discretion of the President, to claim such islands, assuming their prior \textit{terra nullius} status, as "appertaining to" the United States. It also permitted exclusive claims to the unsevered guano resources, as a \textit{res nullius}, at the pleasure of Congress. 48 U.S.C. §§ 1411, 1414 (1976). Over 100 such islands or groups of islands were claimed throughout the world's oceans from 1856 to 1884. \textit{See generally} MOORE, \textit{INTERNATIONAL LAW DIGEST} 567–68 (1906). According to then Attorney General Black, no claims were made to islands whose \textit{res nullius} status was unclear. 9 Op. Att'y Gen. 406 (1859). Although criminal jurisdiction over the islands was claimed pursuant to § 1417 of the act, § 1411 clearly provided that the islands only "appertained to" the United States and were not claimed by the United States as sovereign. Section 1419 specifically provided for the release of United States claims to the islands once the guano had been removed. The United States Supreme Court, in Jones v. United States, 137 U.S. 202, 212 (1890), sustained the constitutionality of the act in the following language:

By the law of nations, recognized by all civilized States, dominion of new territory may be acquired by dominion and occupation, as well as by cession or conquest; and when citizens or subjects of one nation, in its name, and by its authority or with its assent, take and hold actual, continuous, and useful possession (although only for the purpose of carrying on a particular business, such as catching and curing fish, or working mines), of territory unoccupied by any other government or its citizens, the nation to which they belong may exercise such jurisdiction and for such period as it sees fit over territory so acquired. This principle affords ample warrant for the legislation of Congress concerning guano islands. \textit{See also} Whiton v. Albany Ins. Co., 109 Mass. 25, 31 (1891), and sources cited therein at 212.

140. A further example of a resource claim in a \textit{terra nullius} occurred at the beginning of this century with reference to the archipelago of Spitzbergen, in the Arctic Ocean north of Norway. In the 19th century, the archipelago was merely a place of resort for whalers and hunters from many nations. After 1900, however, coal deposits in West Spitzbergen, the existence of which had been known for some time, were found to be commercially valuable. \textit{See} Lansing, \textit{A Unique International Problem}, 11 AM. J. INT'L L. 763 (1917). Resource claims to the coal deposits of the islands, based on the \textit{res nullius} status of the coal, were quickly asserted by the Netherlands, Great Britain, Russia, Germany, Norway, Sweden, and the United States. All states involved, however, agreed to maintain \textit{terra nullius} status for the archipelago itself. \textit{See} Goldie, \textit{supra} note 134, at 808, 809. The Treaty of Paris recognized Norwegian sovereignty in the islands in 1920. \textit{Treaty of Paris, signed} Feb. 9, 1920, 43 Stat. 1892, T.S. No. 686, 2 L.N.T.S. 7, \textit{reprinted in} 18 AM. J. INT'L L. 199 (Supp. 1924).
asserted upon capture. The customary rule as of 1958 was that recoverable resources of the sea were *res nullius* and therefore subject to appropriation. The International Law Commission at its 1952 conference said that international practice was such that, once development of the deep seabed became technologically feasible, individuals and states could legally support it. The view that the deep seabed and its resources were *res communis* was explicitly rejected.

The principle elaborated in the *Lotus* case, that state conduct is permissible absent a specific prohibitory norm of international law to the contrary, is important here. Since no restrictive pattern of state behavior was in evidence prior to 1958, the nodules must be considered to have been *res nullius* at that time.

Concerning the permissibility of exclusive or sovereign claims, however, a substantially different pattern emerges. As has been indicated, the predominant historical norm has been the Grotian principle of *mare liberum*, or freedom of the seas. This norm was adopted by the states of the world quite clearly by the year 1800 in response to extensive claims by states to sovereignty over the seas and all their resources. The freedom of the seas principle raises problems regarding claims to exclusive exploitation rights or to sovereignty. Although nodule recovery is consistent with this principle, claims to exclusive or

141. Goldie, supra note 134, at 797.
142. 1 P. Fauchille, Traité de droit international public, deuxième partie 18–19 (8th ed. 1925); 1 G. Gidel, Droit international public de la mer 516 (1932); H. Kelsen, Principles of international law 266 (1952); H. Smith, The law and custom of the sea 81, 82 (3d ed. 1959); Hurst, Whose Is the Bed of the Sea?, 4 Brit. Y.B. Int’l. L. 5 (1923); Young, supra note 109, at 641, 645.

At all times and in many parts of the world coastal states have, without incurring any protests, undertaken the development of sea-bed and subsoil resources lying outside territorial waters, whenever this was technically possible.

As soon as technical progress is so far advanced that, in spite of the depth of the sea, the sea-bed or its subsoil can usefully be developed, no one in practice is prepared to assert that the mineral or other resources to be obtained from the sea-bed and its subsoil by such development are resources belonging to the community of nations, which no state or individual can . . . appropriate. Such sea-bed and subsoil resources have always found an owner, in spite of the view of many writers that the sea-bed and its subsoil are *res communis*.

And there can be no doubt that international law has sanctioned such appropriation, even though it is in conflict with the idea of *res communis*.

144. *Lotus Case*, supra note 115.
145. In accord with this conclusion, see Kronmiller, supra note 28, at 449; Goldie, supra note 134, at 796–97; Laylin, The Law to Govern Deepsea Mining Until Superseded by International Agreement, 10 San Diego L. Rev. 433 (1973); Murphy, supra note 2, at 538.
146. J. Brierly, supra note 112, at 305.
147. Early in the history of international law, for example, Venice claimed the Adriatic Sea; England, the North Sea, the Channel, and large areas of the Atlantic Ocean; Sweden, the Baltic; and Denmark-Norway, all the northern seas. In 1493, Spain claimed the Pacific and the Gulf of Mexico, while Portugal claimed the Indian Ocean and most of the Atlantic.
sovereign tracts subjacent to the ocean are in derogation of it. A customary rule, sufficient to satisfy the *Lotus* rationale, therefore inheres, *ipso facto*, in the freedom of the seas principle itself.

State practice is consistent with this historical analysis. While claims of sovereignty or exclusive jurisdiction to exploit specified land areas have been based upon effective control alone,

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all claims to exclusive seabed jurisdiction (prior to the universal recognition of continental shelf rights in the early 1950s) have been founded on both effective control and historic usage.

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Several states, including Ireland,

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Sri Lanka,

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Australia,

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Bahrein,

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Venezuela,

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Panama, Mexico, the Philippines, and Malaysia

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have asserted claims to oyster beds and pearls. Tunisia has claimed exclusive rights to a seabed sponge fishery

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and Sardinia has claimed a coral bed in relatively close proximity to its coast.

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Since the Irish claim has never been applied to exclude nationals of other states, it does not constitute relevant precedent here.

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The claim of Sri Lanka to pearl fisheries in the Gulf of Manar, which were deemed legitimate by Vattel in 1758,

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were described in British parliamentary debate as based upon "immemorial use," "uninterrupted and undisputed ownership," and "long usage" rationales,

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despite some scholarly comment to the contrary.

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The

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148. Concerning the guano islands and Spitzbergen precedents, see note 139 supra. Although neither of these claims went beyond resource jurisdiction, claims of sovereignty over *terra nullius* islands were sustained, *inter alia*, in the Legal Status of Eastern Greenland Case, [1933] P.C.I.J. Ser. A/B, No. 53, at 22; the Clipperton Island Arbitration (Mexico v. France), 2 R. Int'l Arb. Awards 1105 (1931); and the Palmas Islands Arbitration (United States v. Netherlands), 2 R. Int'l Arb. Awards 829 (1928). None of these cases furnishes any basis for exclusive seabed tracts, as there is no land-based equivalent to the freedom of the seas doctrine, which is the context for any sovereign or quasi-sovereign claim to the seabed.


150. An Act to Carry into Effect a Convention Between Her Majesty and the Emperor of the French Concerning the Fisheries in the Seas Adjoining the British Islands and France, and to Amend the Laws Relating to British Sea Fisheries, 1868, 31 & 32 Vict., c. 45, § 67, at 98.


158. 8 Report from the Select Committee on Oyster Fisheries 166 (1876) *cited in O'Connell, supra* note 149, at 515.

159. "Qui doutera que les pêcheries des perles de Bahrem et de Ceylan ne puissent légitimement tomber en propriété?" Vattel, *supra* note 129, at 84. See also Oda, *supra* note 120, at 24.


claims of Bahrein and other states to pearl fisheries in the Persian Gulf have been known for over 2000 years, and were also referred to by Vattel in 1758. Although Venezuela, Panama, Mexico, the Philippines, and Malaysia are newer states, the oyster fishery claims of their inhabitants have been known for several centuries. Finally, both Tunisia and Sardinia have asserted historic usage in support of their claims, both of which were well known long before Fulton dealt with them in his seminal treatise of 1911.

The appeal to historic rights by these states in asserting their claims, therefore, must be interpreted as indicating that they perceive their claims to be specially justifiable as a derogation from the customary norm which mandates the freedom of the seas. The International Court of Justice has recognized such derogations based on historic usage in the Anglo-Norwegian Fisheries Case, but the high seas and deep seabed, with some limited historical exceptions, remain free for general use and exploitation pursuant to the freedom of the seas principle. Clearly there can be no claim of historic rights to manganese nodule tracts. The fact that all claims to exclusive jurisdiction have been made to areas near the claiming state's coast further militates against the establishment of exclusive or sovereign resource tracts in the deep seabed. Thus, although there is no norm prohibiting the unilateral capture of manganese nodules, the freedom of the seas principle prohibits exclusive claims to seabed tracts. The deep seabed, in short, is not a terra nullius.

In addition to these considerations, the doctrines of effective control

Although it is traditional to base some of these cases on the ground of prescription, it is not inconsistent with principle, and is more in accord with practice, to recognize that, as a matter of law, a State may acquire, for sedentary fisheries and other purposes, sovereignty and property in the surface of the sea-bed, provided that in so doing it in no way interferes with freedom of navigation and with the breeding of free swimming fish. This is a case in which the requirement of effectiveness of occupation must be interpreted by reference to the reason of the thing and to the judicial and arbitral pronouncements in which such effectiveness is treated as a matter of degree determined by the nature of the area in question.

162. McDougal & Burke, supra note 122, at 648.
164. Id. at 109-10.
165. O'Connell, supra note 149, at 516; H. Smith, supra note 142, at 122.
166. J. Fulton, supra note 157, at 692.
167. O'Connell, supra note 149, at 156; Hurst, supra note 142, at 40-43. See also Convention on Fisheries and Conservation of the Living Resources of the High Seas, art. 13, done April 29, 1958, 1 U.S.T. 138, T.I.A.S. No. 5969, 559 U.N.T.S. 285 (in force March 20, 1966) (exclusive rights to sedentary fisheries are justified only by regard to the principles of adjacency and long historic usage). Concerning the applicability generally of high seas freedoms to the seabed, see the statements of Hsu and Scelle in 1955 1 Y.B. Int'l L. Comm'n 4, 58.
168. In that case, Norwegian claims to a four-mile territorial sea measured from straight baselines were recognized based on Norway's long historic assertion of such claims, and despite the general practice of other states to the contrary. Fisheries Case, supra note 110, at 116.
169. O'Connell, supra note 149, at 517.
170. See text accompanying note 197 infra.
and reasonable regard for conflicting uses of the sea affect the manner in
which nodule recovery may legally occur. While effective control is
established over a res nullius resource through capture, the test of
capture has been applied with varying degrees of severity. In 1844, the
Queen's Bench, in the leading case of *Young v. Hutchins*, applied a
strict standard for the requisite degree of control. The court decided
that even when fish were almost surrounded by a net, they had not been
reduced to effective possession as against a stranger who rowed a boat
through the opening in the net and began gathering up the fish.

This, of course, raises the issue of interference between nodule mining
ships of different states, or between a nodule mining ship and fishing or
shipping vessels. For two reasons, the strict test set forth in *Young v.
Hutchins* does not state customary international law. First, the fish in
question were taken in the territorial sea of the United Kingdom, and
were therefore not subject to international law. Second, and more
important, customary international law requires "reasonable regard for
the interests of other states" in the use of the sea.

Freedom of the seas is not absolute. Most of the recognized freedoms
are inherently in conflict. Net fishing, navigation, scientific research,
the anchoring of ships, the dredging of manganese nodules, and the
operation of submarine cables and pipelines can all interfere with each
other. In applying the "reasonable regard" doctrine, the reasonabil-
ity of a use must be balanced against the reasonability of competing
uses. If the uses conflict, a balance must be struck, maintaining the
best possible use of the oceans along with the rights of other states to
exercise their freedoms.

The inherent interference of nodule recovery with the other freedoms
of the seas is controllable. The presence of a nodule recovery expedition
at points quite remote from land would produce minimal impediments
to navigation. Furthermore, those claims already made have been
carefully selected to minimize interference with shipping lanes.
Although in theory nodule recovery could interfere with cables and
pipelines, the early claimants to nodule beds have been careful to lay
claim to areas where no cables or pipelines are known to exist. Since the
most valuable nodule beds are remote from land in the abyssal

171. See note 130 supra.
173. *Id.* This occurred despite the facts both that several boats had been placed at the net
opening in order to prevent the fish from escaping and that the interloper had to row between
these boats in order to get to the fish.
174. See, in this regard, art. 2 of the Convention of the High Seas, supra note 125, which in
this issue represents a codification of a pre-existing norm of customary international law.
*McDOUGAL & BURKE*, supra note 122, at 763; L. OPPENHEIM, supra note 161, at 585.
175. *McDOUGAL & BURKE*, supra note 122, at 83, n.185.
176. *McDOUGAL & BURKE*, supra note 122, at 85, 691-93, 758.
depths and not on continental shelves or on shallow banks were fish are likely to feed, any direct interference with freedom of fishing would likely be de minimis.

Any activity in the oceans, of course, is likely to have some adverse effects somewhere. In determining the reasonability of nodule recovery, the policy factors supporting nodule exploitation become critical. The present land supply of three of the metals available in manganese nodules is already in short supply. Based upon present rates of consumption, land reserves of copper will expire in twenty-two years; land reserves of nickel will expire in fifty-one years; and land reserves of cobalt will expire in fifty-five years. Assigning a low relative value among the various freedoms of the seas to nodule mining would hasten the depletion of land resources. Encouragement of nodule mining, on the other hand, is likely to stimulate the growth and improvement of technology. Freedom of the seas is not impervious to reasonable requirements of economic life and scientific progress. Thus, nodule mining is clearly a legal use of the seas, when carried on with reasonable regard for the interests of other states.

As has been indicated, the nodules are subject to appropriation through capture, which is an application of the "effective control" requirement to a res nullius. Several scholars, however, have applied the occupation theory (which is the application of the "effective control" requirement) to the deep seabed. These commentators conclude that, if the occupation of the seabed may actually or constructively be

177. See note 3 supra.
178. The potential impact on fishing caused by deep seabed disruptions of the ocean environment is addressed in the text accompanying note 87 supra. See text accompanying notes 85–97 supra.
180. See generally McDougal & Burke, supra note 82, at 750–51; Stang, Political Cobwebs Beneath the Seas, 7 Int'l Law. 1, 14 (1973).
181. G. Hackworth, supra note 133, at 403.
182. By analogy, Oda has suggested that exploitation of sedentary fisheries, even from a permanent installation, would not unreasonably interfere with other uses of the high seas, since the difference between a permanent installation and fishing vessels stationary for great lengths of time is negligible. Oda, supra note 120, at 26. For an analogy to fisheries for purposes of applying the "reasonable regard" doctrine, see Kronmiller, supra note 28, at 455–57.
183. See text accompanying notes 118–45 supra.
184. Lauterpacht, for example, has written that: It is . . . in accord with practice to recognize that, as a matter of law, a State may acquire, for sedentary fisheries and other purposes, sovereignty and property in the surface of the sea-bed, provided that in so doing it in no way interferes with freedom of navigation and with the breeding of free swimming fish. This is a case in which the requirement of effectiveness of occupation must be interpreted by reference to the reason of the thing and to the judicial and arbitral pronouncements in which such effectiveness is treated as a matter of degree determined by the nature of the area in question.
L. Oppenheimer, supra note 161, at 628, 629. In accord with this conclusion, see also Goldie, supra note 134, at 796, 797; Laylin, supra note 145, at 433; Young, supra note 109, at 645.
achieved, it is properly the subject of state claims to either exclusive resource rights or possibly even to sovereignty.\textsuperscript{185} Support for this theory is found in a variety of precedents.

Land based precedents are often cited for the proposition that "occupation" is a flexible standard which may permit constructive occupation of the deep sea floor.\textsuperscript{186} The \textit{Clipperton Island Arbitration},\textsuperscript{187} the \textit{Palmas Island Arbitration},\textsuperscript{188} and the \textit{Status of Eastern Greenland} cases\textsuperscript{189} all suggest a flexible standard of constructive occupation when the area involved is remote. Similar considerations underlie states' claims to Antarctica.\textsuperscript{190} Most of such claims, exclusive of the few "sector principle" claims, are based on discovery and exploration exclusively, and do not rely upon a permanent population.\textsuperscript{191} This supports the conclusion that the requirements of "effective control" change with the geographic character of the areas claimed.

While the flexibility of the occupation standard is unquestionable, any theory founded on land based precedents contains two flaws. First, all of the cited precedent pertains to areas which, unlike the deep seabed, are at least potentially available for human habitation.\textsuperscript{192}

\begin{enumerate}
\item L. \textsc{Oppenheim, supra note 161, at 629}.
\item Concerning this issue, for example, Lauterpacht has written: effectiveness is not a magic formula which can be applied with mathematical precision. It is effectiveness relative to the situation and to the circumstances. It may range from the requirement of intensive administration in every "nook and corner" in a densely populated and developed area to mere "state activity" manifesting itself in the conclusion of treaties and conferment of concessions by an authority situated in a narrowly circumscribed part of the territory or even outside it. Lauterpacht, \textit{supra} note 119, at 429.
\item \textit{Sie Clipperton Island Arbitration} (Mexico v. France), 2 R. Int'l Arb. Awards 1105 (1931). This decision held the French claim to Clipperton Island, a remote rock in the eastern Pacific, superior to that of Mexico. It was based upon the fact that France had a publicized claim and had conducted continuous diplomatic assertion of its rights, even though the French seldom visited the island.
\item Palmas Islands Awards (United States v. Netherlands), 2 R. Int'l Arb. Awards 831 (1928). In this case, Judge Huber found that the "intermittance and discontinuity compatible with the maintenance of the right necessarily differ . . . as inhabited or uninhabited regions are involved." \textit{Id.} at 840.
\item \textit{Sie Legal Status of Eastern Greenland Case} (Denmark v. Norway), [1933] P.C.I.J. Ser. A/B, No. 53, at 22. In this case, Danish acts of sovereignty had mainly been performed in the more habitable western and southern regions of Greenland, but these acts were found sufficient to preclude Norwegian claims to the desolate northeastern coastal region. The two primary considerations in achieving this results were "the absence of any prior claim to sovereignty by another Power, and the Arctic and inaccessible character of the uncolonized parts of the country." \textit{Id.} at 50-51.
\item 1 G. Hackworth, Digest of International Law 452-65 (1940).
\item Man's ability to effectively examine the deep seabed has expanded greatly since William Beebe's bathysphere descents in the 1930s. The small submarine \textit{Alvin} has been used in two expeditions to the East Pacific Rise at 21\textdegree N and in the Galapagos Rift in 1979. Those expeditions, to depths in excess of 8,000 feet, involved the collection of animate as well as
\end{enumerate}
Second, and more important, the attempted application of land-based precedent generally fails to appreciate that the freedom of the seas doctrine operates ipso facto to remove the seabed as a whole from terra nullius status. 193

Several publicists have argued that this conclusion is impeached by precedent specifically allowing unilateral claims to seabed tracts. The international recognition of exclusive claims to oyster fisheries, sponge fisheries, coral beds, and the continental shelf, for example, are urged to support the conclusion that the flexible terrestrial occupation standard applies as well to the seabed. 194

These contentions can be rebutted on three levels. First, although exclusive claims to sedentary fishery tracts and coral beds have been recognized internationally, the basis for these claims is predominantly historical, not occupational. 195 Second, all of these claims are to areas contiguous to the claiming state. While Judge Huber in the Palmas Island case rejected contiguity standing alone as a basis for title, 196 others have concluded that contiguity contributes to the validity of a claim, if it has a cumulative effect along with the other indicia of "effective occupation." 197 Third, insofar as continental shelf claims are inanimate specimens and the photography of hydrothermal vents in the ocean floor. Sophisticated as this technology is, man's intrusion into the deep seabed is still temporary in nature and limited in scope, and no direct human contact with the nodule beds, at depths of from 12,000 to 20,000 feet, has yet been established. See Ballard & Grassle, Return to Oases of the Deep, NAT'L GEOGRAPHIC, Nov. 1979; Corlis & Ballard, Oasis of Life in the Cold Abyss, NAT'L GEOGRAPHIC, Oct. 1977. See also text accompanying note 23 supra.

Lauterpacht, supra note 119, at 415–16. 194. Professor Lauterpacht, for example, referring to the Palmas and Greenland precedents, has written:

Any attempt to base the title to submarine areas on the accepted notion of effective occupation must result either in a denial of the legality of the title thus claimed or in depriving the notion of effective occupation of its natural meaning. For it is clear that in all cases in which the title to submarine areas has been proclaimed there has been no approximation to effective occupation. There has been only a proclamation and, in some cases, a conferment or concession in respect of the areas in question. This absence of effective occupation is in no way fatal to acquisition of territorial title over submarine areas . . . .

What is true is that, all other things being equal, effective occupation constitutes, except as against the lawful sovereign, a title superior to any competing title. Lauterpacht, supra note 119, at 415–16. 195. See text accompanying notes 149–67 supra.

196. See note 188 supra.

197. Professor Waldock applied this reasoning not only to seabed claims, but found it relevant to certain land-based precedents as well, most notably in the Eastern Greenland case, where the contiguity of Eastern Greenland to portions of Southern Greenland occupied by the Danes undoubtedly has an unquantifiable impact upon the members of the Court. Waldock, The Legal Basis of Claims to the Continental Shelf, 36 GROTIUS SOCIETY TRANSACTIONS FOR THE YEAR 1950 at 115, 141, 142 (1951). See also J. Briely, supra note 112, at 165; P. Fauchille, supra note 142, at 17–19; Kronmiller, supra note 28, at 203; O'Connell, supra note 149, at 420; Hurst, supra note 142, at 40; Lauterpacht, supra note 119, at 420.
Excited in support of a flexible occupation standard, it must initially be noted that the contiguity principle may be used to justify such claims. In the Truman Proclamation of 1945 — the first continental shelf claim — jurisdictional extension was justified in the following language:

Whereas it is the view of the Government of the United States that the exercise of jurisdiction over the natural resources of the subsoil and sea-bed of the continental shelf by the contiguous nation is reasonable and just, since the effectiveness of measures to utilize or conserve these resources would be contingent upon cooperation and protection from the shore, since the continental shelf may be regarded as an extension of the land-mass of the coastal nation and thus naturally appurtenant to it, since these resources frequently form a seaward extension of a pool or deposit lying within the territory, and since self protection compels the coastal nation to keep close watch over activities off its shores which are of the nature necessary for utilization of these resources.\(^{198}\)

Occupation has never been the basis for international recognition of such claims. The International Law Commission, in its 1950 report to the United Nations General Assembly, stated its view that the exercise of jurisdiction over the continental shelf was independent of the concept of occupation.\(^{199}\) It had previously adopted a text stating that “the submarine area of the Continental Shelf off the coast of the littoral State and outside the area of its territorial waters is subject \textit{ipso jure} to the control and jurisdiction of the littoral State.”\(^{200}\) The final formulation of the continental shelf doctrine which emerged in article 2 of the 1958 Convention on the Continental Shelf is consistent with this position:

The rights referred to in paragraph 1 of this article are exclusive in the sense that if the coastal State does not explore the continental shelf or exploit its natural resources, no one may undertake these activities, or make a claim to the continental shelf, without the express consent of the coastal State.\(^{201}\)

Furthermore, even assuming \textit{arguendo} the applicability of the occupation standard to portions of the non-adjacent deep seabed, and the inapplicability of the freedom of the seas doctrine to it, a residual


\(^{200}\) Id.

issue concerns the nature of the occupation necessary to vest exclusive rights. The deep seabed can only be used or occupied by locating operations on the ocean bottom or through dredging by ships. In the first case, it would be difficult to maintain that any effective occupation exists outside the mining site, while in the second, it would seem that no occupation over time exists at all. The impracticality of exercising "effective control" or of "occupying" the deep seabed, along with the freedom of the seas doctrine, therefore operates to relegate the seabed, along with the air and the surface of the sea, to res communis status.

Finally, even assuming the possibility of occupation of the deep seabed, the freedom of the seas doctrine would alone limit the physical extent of exclusive resource claims to areas under the immediate and proximate control of the nodule recovery operation and would preclude extensive claims to areas where no current exploitation is occurring. As so limited, it is likely that similar protection, without the necessity of an exclusive tract claim, would be afforded to recovery operations by the doctrine that any use of the seas must have reasonable regard for other permissible uses of the sea. Just as no fishing vessel may interfere with the reasonable fishing rights of another vessel, no nodule recovery vessel may interfere with the reasonable exploitation rights of another nodule recovery vessel. This limitation lies at the very heart of the concept of freedom of the seas.

In conclusion, manganese nodules historically are res nullius, and are therefore subject to appropriation by anyone through capture. The doctrine of freedom of the seas is a prohibitory norm of customary international law which precludes the extension of terra nullius status to the seabed and which therefore precludes claims to exclusive jurisdiction or sovereignty over specific nodule beds. Like fish, nodules may

204. Nyhard, The Interplay of Law and Technology in Deepsea Mining Issues, 15 Va. J. Int'l L. 827, 865 (1975). Nyhard provides a description of the historic approach that exclusively was limited to areas physically displaced. As an example of an extreme claim which may be cognizable if this limitation is ignored, Deepsea Ventures, a United States mining firm, has already claimed exclusive mining rights to a nodule bed of some 60,000 square kilometers in the mid-Pacific ocean. See Letter from John E. Flipse to Henry A. Kissinger (Nov. 14, 1974), reprinted in 14 Int'l Legal Mats. 51 (1975). Pursuant to the foregoing analysis, this claim is not supportable given the current status of customary international law, both because Deepsea Ventures has no international capacity, and because it cannot satisfy the effective control requirement over 60,000 square kilometers, even assuming the seabed to be terra nullius. On the issue of the capacity of Deepsea Ventures to assert such a claim, see Burton, supra note 125, at 1145 nn. 43, 44.
205. See text accompanying notes 174–82 supra; Burton, supra note 125, at 1177.
therefore be harvested by anyone, as long as the exploitation does not unreasonably interfere with the exercise by others of their respective freedoms of the seas.

B. The Impact of the Convention on the High Seas

The first significant multilateral statement concerning the international law of the oceans occurred in 1958, with the adoption of the four Geneva Conventions on the Law of the Sea. Although these conventions covered the continental shelf, territorial sea, fisheries, and the high seas, only the last convention is directly relevant to deep seabed mining, which by definition relates to mining beyond the national jurisdiction of any state.

The Convention on the High Seas (Convention), which was intended by its drafters to constitute a codification of customary international law, provides in relevant part as follows:

Article 1: The term "high seas" means all parts of the sea that are not included in the territorial sea or in the internal waters of a state.

Article 2: 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, for both 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.

These provisions raise four issues central to the development of seabed law. First, does the term "high seas," as used in article 1, include seabed areas in its definition, so as to extend to such areas the "freedom of the seas" protections set forth in article 2? Second, do the

206. See note 201 supra.
208. See note 167 supra.
209. See note 125 supra.
210. Id. preamble.
211. Id. arts 1, 2.
freedoms of the seas described by article 2 include the freedom to recover manganese nodules? Third, what is the impact of the "reasonable regard" doctrine expressed at the end of article 2? Fourth, do any of the Convention's provisions provide any affirmative protections to United States nationals wishing to mine the deep seabed?

The first issue concerns the physical areas covered by the Convention. Although article 2 precludes sovereign claims to any part of the high seas, it does not specifically include the seabed in this prohibition. Article 1 defines the "high seas" as "all parts of the sea not included in the territorial sea or internal waters of a state." It is important to note that the high seas are residually defined only in terms of the territorial sea and internal waters, which relate only to the surface of the water. Although the continental shelf was covered by a corresponding 1958 Convention, article 1 of the Convention on the High Seas did not include the continental shelf (itself a seabed area) as an area against which the high seas were to be residually defined.

Furthermore, where no ambiguity exists, treaties must be interpreted in light of the ordinary meaning of their words. Critical additional terms not included in the text are not ordinarily to be implied. Thus, since the ordinary meaning of "high seas" refers only to the surface, and since "high seas" is defined residually only with reference to surface ocean regimes, many commentators have concluded that the convention furnishes no protection for seabed activities.

Two criticisms may be made of this position. First, if the Convention was intended to apply only to surface activities, the anomaly of including the freedom to lay submarine cables and pipelines, clearly a seabed activity, cannot be explained. Second, even if the Convention itself does not explicitly support the proposition that the seabed is res communis and therefore entitled to the protection of the freedom of the seas doctrine, it does not follow that this premise cannot be amply supported by pre-1958 precedent which the Convention clearly does not disturb. Even if the convention does not specifically guarantee "freedom of the seas" status to the seabed, the cables and pipelines provision makes clear the intent of the drafters to refrain from detracting from that status, assuming its existence prior to 1958.

The effect of the Convention on the substantive content of freedom


of the seas must now be examined. Article 2, it will be noted, sets forth an absolute prohibition of sovereign claims to any part of the high seas, but allows four specified activities to be carried on as freedoms of the high seas. When such an enumeration was being considered by the International Law Commission in 1955, concern arose that the enumeration might imply that the list was exclusive. To clarify the issue and allay these fears, the International Law Commission included the following comments in its report:

The list of freedoms of the high seas contained in this article is not restrictive; the Commission has merely specified four of the main freedoms. It is aware that there are other freedoms, such as the freedom to explore or exploit the subsoil of the high seas and the freedom to engage in scientific research therein.

The following year, the International Law Commission, in commenting on the draft article which later became article 2 of the Convention, took a slightly different position and refrained from expressing an opinion as to the permissibility of deep seabed exploitation:

The list of freedoms of the high seas contained in this article is not restrictive. The Commission has merely specified four of the main freedoms. It is aware that there are other freedoms, such as the freedom to undertake scientific research on the high seas—a freedom limited only by the general principle stated in the third sentence of paragraph 1 of the commentary to the present article. The Commission has not made specific mention of the freedom to explore or to exploit the subsoil of the high seas. It considered that apart from the case of the exploitation or exploration of the soil or subsoil of a continental shelf... such exploitation has not yet assumed sufficient practical importance to justify special regulation.

The framers' decision to include the "inter alia" clause in the final draft further evidences their desire to render the list non-exclusive. Recalling the principle that restrictions on states will not be implied in the absence of specific prohibitory norms, the 1956 commentary cannot be interpreted to support the position that the Convention on the High Seas precludes nodule recovery on the deep seabed.

The third issue concerning the Convention relates to the meaning of the "reasonable regard" clause of article 2. While some commentators

216. Id. at 3 (emphasis added).
217. Id. at 24.
218. Lotus Case, supra note 115.
have maintained that this clause implicitly recognizes the legitimacy of any ocean use which is "reasonable,"219 it is not necessary to go this far in interpreting this language in order to sustain the argument. Ample precedent legitimating nodule recovery as a freedom of the seas can be found in the pre-1958 period,220 and such activity would be permissible in any case under the "absence of implied limitations" approach to state sovereignty.221

The final issue is whether the Convention provides any affirmative protections to United States nationals who desire to engage in seabed mining. Most notable among the Convention's relevant provisions is article 6, which provides, inter alia, that "Ships shall sail under the flag of one State only and, save in exceptional cases expressly provided for in international treaties or in these Articles, shall be subject to its exclusive jurisdiction on the high seas."222 Since no countervailing rule has been adopted subsequently, article 6 still protects ships flying the United States flag from interference by the ships of other states on the high seas.

C. The Moratorium Resolution and the Declaration of Principles

In 1969, the United Nations General Assembly passed the "Moratorium Resolution," which attempted to prohibit the recognition of any immediate unilateral right to mine the deep seabed.223 One year later, it passed the Declaration of Principles Governing the Seabed and the Ocean Floor, and the Subsoil Thereof, Beyond the Limits of National Jurisdiction (Declaration of Principles).224 The resolution declared the deep seabed to be the "common heritage of mankind," and demanded that this common heritage be exploited for the benefit of mankind as a whole. It further precluded any appropriation of or sovereign claims to the seabed except under an international regime contemplated by the resolution.225

Third world states have advanced two rationales for the strict observance of these resolutions. First, it is asserted that both resolutions, but especially the Declaration of Principles, are binding per se, apparently as a manifestation of positive international law.226 Second, these states

219. McDougal & Burke, supra note 122, at 758.
220. See text accompanying notes 132-45 supra.
221. Lotus Case, supra note 115.
223. See Moratorium Resolution, supra note 13.
225. Id.
226. See, e.g., the statement of Sataya Nardan of Fiji, Chairman of the Group of 77, in which the binding character of the Declaration of Principles and the corresponding illegality of unilateral
maintain that these instruments are evidence that the "freedom of the seas" doctrine, as applied to seabed resources, has become obsolete. The result, they assert, is to transform the nodules from *res nullius* to *res communis* status by the operation of the "common heritage" principle, which is suggested to be a newly emergent norm of customary international law.

These arguments are less than convincing for several reasons. First, whatever the political implications of these resolutions may be, they clearly have neither the status nor impact of positive international law. The powers of the United Nations General Assembly are specified by chapter IV of the United Nations Charter which, apart from certain specified powers such as budget approval and the establishment of subsidiary organs, grants the General Assembly power only to discuss and to recommend.227 The General Assembly, in short, has no legislative power.228 A proposal that the General Assembly be empowered to enact rules of international law was rejected by a vote of twenty-six to one at the San Francisco conference in 1945.229 Furthermore, in defining the sources of international law to be considered by the International Court of Justice, the Statute of the International Court of Justice makes no reference to the resolutions of the General Assembly or any other international body.230 In the *South West Africa Cases*,231 the International Court of Justice was careful to distinguish the political effect from the legal effect of a given General Assembly resolution: "The persuasive force of Assembly resolutions can indeed be very considerable, — but this is a different thing. It operates on the political not the legal level: it does not make those resolutions binding in law."232 This conclusion is clearly consistent with the International Court of Justice's earlier conclusion in the *Voting Procedures Case*, wherein it stated, "it is in the nature of recommendations that they do not create a legal obligation to comply."233 Neither the Moratorium Resolution nor the Declaration of Principles, therefore, has any binding effect as positive international law.

In examining the resolutions for customary legal impact, in contrast,
a more sophisticated analysis must be applied. Initially, the components which contribute to the recognition of a binding customary international norm must be described. These components may then be used as a standard against which the resolutions may be tested.

The creation of a new norm of customary international law requires four elements. First, a number of states — sufficient to evidence a “general practice” — must refrain from certain conduct. Second, the self-restraint must be the result of the state’s perception that it is obligatory, and not the result of politics, comity, or incapacity. Third, the practice must be adhered to by a significant majority of the specially affected states. Finally, the practice must be continuous over a reasonable length of time, although this requirement appears relatively flexible.

The first element requires a generalized practice, habit, or usage. This aspect, being quantitative, is largely empirical and presents the fewest analytical problems of the four. The second element, the psychological element, requires that the acts or forbearances which assertedly comprise a general practice be performed because they are deemed legally binding. This rule, which has been referred to as the *opinio juris* principle, is reflected in the Statute of the International Court of Justice, which requires that the court apply “international custom, as evidence of a general practice accepted as law.” This concept can be traced back as far as Roman law, and was applied in the late 18th and early 19th centuries by Puchta, Savigny, Hugo, and Austin. The *opinio juris* principle has often been alluded to in international adjudication. In the *Lotus* case, for example, the court was required to determine whether the so-called “passive personality” basis for jurisdiction was internationally cognizable, despite the fact that only Turkey and a very few other states applied it. With regard to the forbearance of other states to exercise such jurisdiction, the court reasoned thus: “[O]nly if such abstention were based on their being conscious of

234. This principle has been phrased differently by different publicists. Some have referred to it simply as the "mental element" in custom. See M. Sørensen, MANUAL OF PUBLIC INTERNATIONAL LAW 133 (1968). Others have attempted to distinguish "law consciousness" or "oughtness" from "mere usage." See, e.g., I. Brownlie, supra note 116, at 440; A. D’Amato, THE CONCEPT OF CUSTOM IN INTERNATIONAL LAW 66–72 (1971); H. Kelsen, PRINCIPLES OF INTERNATIONAL LAW 440 (2d ed. R. Tucker 1966); G. von Glahn, LAW AMONG NATIONS 15 (3d ed. 1976). Still others have considered this principle to require that actions or forbearances be the "product of the conscience of a State." O’Connell, supra note 149, at 4, 6, 16.

235. For a discussion of *opinio juris et necessitatis* (in the belief that it is mandated by law), see generally I. Brownlie, supra note 116, at 440; Chaumont, Cours general de droit international public, [1970] RECUEIL DES COURS 335, 434–35.

236. I.C.J. STAT. art. 38.

237. M. Sørensen, supra note 234, at 133.

238. A. D’Amato, supra note 234, at 47 n.1.

239. See Lotus Case, supra note 115.
having a duty to abstain would it be possible to speak of an international custom.” In the Asylum case, when confronted with a Colombian contention that a regional custom regarding asylum existed in the Latin American states, the court concluded:

The Colombian government must prove that the rule invoked by it is in accordance with a constant and unified usage practiced by the States in question, and that this usage is the expression of a right appertaining to the State granting asylum and a duty incumbent upon the territorial State. This follows from Article 38 of the Statute of the Court, which refers to international custom “as evidence of a general practice accepted as law.”

The principle has been reaffirmed recently in the North Sea Continental Shelf Cases, where the court was emphatic about its application:

The essential point in this connection — and it seems necessary to stress it — is that even if these instances of action by non-parties to the Convention were much more numerous than they in fact are, they would not, even in the aggregate, suffice in themselves to constitute the opinio juris; — for, in order to achieve this result, two conditions must be fulfilled. Not only must the acts concerned amount to a settled practice, but they must also be such, or be carried out in such a way, as to be evidence of a belief that this practice is rendered obligatory by the existence of a rule of law requiring it. The need for such a belief, i.e., the existence of a subjective element, is implicit in the very notion of the opinio juris sive necessitatis. The States concerned must therefore feel that they are conforming to what amounts to a legal obligation. The frequency, or even habitual character of the acts is not in itself enough.

The third element requires adherence to the norm by a majority of the specially affected states. This element may be deemed the “qualitative” aspect of consensus. While this requirement is founded largely in common sense, commentators have often overlooked it. The premise nevertheless is easy to illustrate: should, for example, a less developed state have as much input into the law of space exploration as the United States or the Soviet Union? Should landlocked states have an equal voice with coastal states concerning, for example, the delimitation of

240. Id. at 28.
242. Id. at 277. This conclusion was cited approvingly by the Court in deciding the Case Concerning Rights of Nationals of the United States of America in Morocco, [1952] I.C.J. 199, 200.
the continental shelf? This latter issue was part of the problem confronting the court in the North Sea Continental Shelf Cases, wherein the court was compelled to examine state practice in order to determine whether the equidistance principle for delimiting the continental shelf, as set forth in the Convention on the Continental Shelf, had coalesced into a customary norm. In evaluating the precedent, the court concluded that:

With respect to the other elements usually regarded as necessary before a conventional rule can be considered to have become a general rule of international law, it might be that . . . a very widespread and representative participation in the convention might suffice in itself, provided it included that of States whose interests were specially affected.245

Publicists have also shared this interest of the court in finding a qualitative as well as a quantitative consensus, since it is not possible to determine whether or not a customary rule has emerged merely by counting the number of states supporting the existence of the norm. The adherence must be widespread and representative and must include, at the very least, a majority of the interested parties. As Professor Lauterpacht has written, in discussing the then emergent continental shelf doctrine:

What matters is not so much the number of States participating . . . as the relative importance, in any particular sphere, of the States inaugurating the change. In a matter closely related to the principle of freedom of the seas, the conduct of . . . major maritime powers, such as Great Britain and the United States, is of special importance.246

The final element of international custom is time.247 While the flexibility inherent in this requirement is unquestionable, especially in rapidly developing areas such as the continental shelves and outer space, the North Sea Continental Shelf Cases demonstrate that the principle retains vitality and that, to the extent that the time element

244. See note 201 supra.
246. Lauterpacht, supra note 119, at 394. See also O'CONNELL, supra note 149, at 18.
247. In an early leading English case on this issue, for example, Lord Stowell commented, "The period of a hundred years which has elapsed is amply sufficient to have enabled what may have originally vested in custom or comity, courtesy or concessions, to grow, by the general assent of civilized nations, into a settled rule of international law." The Young Jacob and Johanna, 165 Eng. Rep. 81 (1798).
248. 1. BROWNlie, supra note 234, at 5.
is shortened, the quantitative aspects of consensus must be increased.249

A final procedural issue concerning both resolutions relates to the effect of protest by a state upon the applicability of a newly emergent norm as to that state. Persistent, timely, and invariant protest by a state to an emerging customary norm may render the norm inapplicable against that state.250 This premise was applied by the International Court of Justice in the Anglo-Norwegian Fisheries Case, where the court held the generally recognized three-mile limit on the territorial sea inapplicable as to Norway, which had continuously and emphatically maintained a four-mile territorial sea during the time at which the three-mile norm was coalescing.251 More recently, in the Fisheries Jurisdiction Case, the court reaffirmed the vitality of the protest principle, although distinguishing the particular facts involved.252 Thus, even assuming arguendo the customary legal significance of the Declaration, and assuming further that it effects a change in the pre-existing customary law, the emphatic and continuous protest of the United States253 may render legally insignificant any deviation from the historic customary practice. These are the standards by which the Moratorium Resolution and the Declaration of Principles must be judged in determining their possible effect as customary international law.

The Moratorium Resolution was passed on December 15, 1969, by a vote of sixty-two in favor, twenty-eight abstaining, twenty-eight

249. [1969] I.C.J. 44:

a short period of time is not necessarily, or of itself, a bar to the formation of a new rule of customary international law on the basis of what was originally a purely conventional rule, an indispensable requirement would be that within the period in question, short though it might be, State practice, including that of States whose interests are specially affected, should have been both extensive and virtually uniform in the sense of the provision invoked.

250. "The general body of states has no machinery . . . which allows a majority to outvote a dissenting minority and to pass measures into law which will then become binding on all, whether they have agreed or not." J. BRIERLY, OUTLOOK FOR INTERNATIONAL LAW 99 (1944). See generally M. SØRENSEN, supra note 234, at 137; MacGibbon, Some Observations on the Part of Protest in International Law, 30 BRIT. Y.B. INT'L L. 293 (1953).


252. United Kingdom v. Iceland, [1974] I.C.J. 3, 58 (separate opinion of Judge Dillard). In this case, Iceland, in exchange notes of 1961, indicated its willingness to abide by a 12-mile territorial sea. The court held this to be acquiescence rather than protest, and Iceland's subsequent 50-mile claim was held non-opposable in respect to the United Kingdom, which had continually protested that claim.

253. See, e.g., notes 254–58 & 269 infra. See also KRONMILLER, supra note 28, at 7. That the United States may intend to invoke its protests as a defense to these alleged norms was suggested by Ambassador Elliot Richardson on September 25, 1978, when, in addressing the final Plenary Meeting of the Seventh Session of UNCLOS III, he stated that "the United States could not accept the suggestion that, without its consent, other States would be able, by resolutions or statements, to deny or alter its rights under international law." Record of the 109th Plenary Meeting, supra note 226, at 10.
opposed, and eight not voting. Of the 126 members actually eligible to vote on the issue, only about forty-eight percent actually voted “yes.” Furthermore, the negative votes included those of certain specially affected states, such as Australia, Canada, France, Japan, the Netherlands, Norway, the Soviet Union, the United Kingdom, and the United States. During the debates on the Moratorium Resolution, the United States' representative stated his opinion that the resolution would be without binding legal effect. President Nixon later clarified the position of the United States:

I do not believe that it is either necessary or desirable to try to halt exploration and exploitation of the sea-beds beyond a depth of 200 metres during the negotiation period. Accordingly, I call on all other nations to join the United States in an interim policy . . . . The regime should accordingly include due protection for the integrity of investments made in the interim period.

United States opposition to the binding effect of the Moratorium Resolution has been continuous and emphatic. As of 1974, the nonbinding effect of the Moratorium Resolution was maintained by representatives from both the executive and legislative branches of government. In 1977, prior to the Carter administration's support of unilateral seabed mining legislation, it agreed with the conclusion of the

254. E. Brown, supra note 133, at 30; Kronmiller, supra note 28, at 29, n.54.
255. Laylin, Development of International Law of the Sea and Seabed, 5 Int'l Law. 442, 446 (1971). Ceylon, one of the co-sponsors of the draft resolution, concurred in this opinion. Id. at n.9. Other states have also taken the position that the resolution is of no binding legal effect. See, e.g., 29 U.N. GAOR, U.N. Doc. A/PV.1833, at 4, 5 (1969).
257. The Executive Branch continues to hold the view that deep sea-bed mineral exploitation constitutes a reasonable use of the high seas and is presently permitted under international law. We have made this position clear to other nations on many occasions. In this connection, the United States has repeatedly expressed its position that the so-called moratorium resolution is without binding legal effect.
Letter from John Norton Moore, Department of State, to Senator Lee Metcalfe (Mont.) (April 9, 1974), reprinted in Hearings Before the Senate Subcomm. on Minerals, Materials, and Fuels, 93d Cong., 2d Sess. 994 (1973). This letter, in turn, confirmed the 1973 United States State Department position, issued by Charles N. Brower, Acting Legal Adviser, that “at the present time, under international law and the High Seas Convention, it is open to anyone who has the capacity to engage in mining of the deep seabed subject to the proper exercise of high seas rights of other countries involved.” Hearings Before the House Subcomm. on Oceanography of the Comm. on Merchant Marine and Fisheries, 93d Cong., 1st Sess. 50 (1974).
258. S. Rep. No. 93–1116, 93d Cong., 2d Sess. 1 (1974): “to the extent that nodules are located outside the territorial limits and beyond the continental shelf of any nation, the nodules are available for utilization by any nation with the ability to develop them.”
previous administration that mining the deep seabed was a freedom of the seas. The United States continues to adhere to this position.

Subjecting these facts to customary legal analysis yields consistent conclusions. First, the fact that the Moratorium Resolution was supported by only forty-eight percent of the states eligible to vote strongly suggests that the first requirement of a generalized practice is not satisfied. Second, that the *opinio juris* requirement is unsatisfied can be inferred from the statement of one of the resolution's sponsors that it was without legal effect. If the drafters' expressed intent was not to legally bind other states, it is difficult to see how the psychological aspect of consensus may be found. Nor did the sixty-two states favoring the resolution include a majority of the "specially affected states" so as to satisfy the qualitative consensus requirement. Among the states voting in opposition were all of the states with a potential for deep ocean mining on their own in the short term. In summary, the Moratorium Resolution, which reflected the views of a minority of states, none of which had or now has a capacity to exploit the seabed, cannot be considered evidence of customary international law.

The Declaration of Principles was passed by the General Assembly on December 17, 1970, by a vote of 108 in favor, none opposed, and 8 abstaining. Because of the lack of formal opposition to this resolution, it presents a more difficult analytical problem than that posed by the Moratorium Resolution. The first requirement of a generalized practice may therefore be at least facially satisfied. Whether the Declaration of Principles reflects an actual as well as an articulated consensus will be examined further in the following subsection concerning "current practice."

The *opinio juris* analysis suggests that the Declaration does not articulate a customary international norm. Such norms, as has been indicated, can only be based on usages which are regarded by the practicing state as having an obligatory character. Even among those states actively supporting the Declaration, however, most were careful to limit its legal, as opposed to political, significance. These limita-
tions are significant insofar as they evidence the lack of intent by states to recognize the Declaration as legally obligatory. Australia, for example, which voted in favor of the Declaration, indicated that it provided "general guidance for the establishment of a . . . sea-bed regime . . . but we would not see it as having any binding or mandatory effect upon States in the meantime." 268 The Soviet Union, which abstained in the vote, expressed a similar opinion: "Approval by the General Assembly of this draft cannot impose legal consequences on States since such decisions are merely of a recommendatory character." 269

Second, as part of the opinio juris analysis, the language of the Declaration must be examined in order to determine the exact contours of the obligations to which the supporters of this pronouncement have allegedly bound themselves. First, it must be noted that the Declaration, although specifically reaffirming Resolution 2467 of December 21, 1968, 270 did not reaffirm the Moratorium Resolution, which was passed in 1969. This fact has led some commentators to conclude that this omission was intentional, and therefore operates as an implied repudiation of the moratorium principle.

It has been suggested by some that the "common heritage" clause of the United Nations 1970 Declaration Governing the Sea-bed provides a legal basis for a state to deny title to nodules taken from the deep sea-bed and to intervene on the high seas so as to prevent unauthorized exploitation of the "common heritage." This is clearly contrary to the policies of the major maritime states, and had such interpretation been given to the "common heritage" clause, it would not have received the voting support that it did. 271

Furthermore, the nature of the language used in the Declaration lends support to the conclusion that opinio juris is lacking as to it, and that its residual impact is political, not legal. 272

270. G.A. Res. 2467, 23 U.N. GAOR (23d Sess., Agenda Item 26) 1, U.N. Doc. A/Res./2467 (1969), reprinted in 8 INT'L LEGAL MATS. 201, 205 (1969). The resolution provided that the seabed and ocean floor should be used exclusively for peaceful purposes, and for the benefit of mankind as a whole, but did not call for a moratorium on deep seabed exploitation.
272. Joint Hearings on S. 493, supra note 24, § 2(a)(2). This section indicates the United States' position on the Declaration, when it states that the United States "anticipated that this [common heritage] principle would be legally defined under terms of a comprehensive international Law of the Sea Treaty to be agreed upon in the future" (emphasis added). See also id. §§ 2(b)(1), 3(b)(1); Kronmiller, supra note 28, at 39, 40; Murphy, supra note 145, at 531:

The Declaration is filled with general and ambiguous language, and the history of its formulation makes it clear that such uncertainties were purposeful. They were designed to
Finally, it is important to note that the Declaration of Principles is primarily prospective, looking toward the time when an international seabed regime may be created:

No State or person, natural or juridical, shall claim, exercise or acquire rights with respect to the area or its resources incompatible with the international regime to be established and the principles of this Declaration.

All activities regarding the exploration and exploitation of the resources of the area and other related activities shall be governed by the international regime to be established.

The area shall be open to use exclusively for peaceful purposes by all States, whether coastal or land-locked, without discrimination, in accordance with the international regime to be established.  

The prospective nature of these provisions, interpreted according to their ordinary meaning, leads to the conclusion that, even assuming arguendo that these provisions reflect international custom, they are incapable of violation pending the adoption of a generally accepted sea treaty. While interim legislation has been considered at length at various sessions of UNCLOS III, no such legislation has been adopted.

The question remains as to the effect of the Declaration if and when UNCLOS III concludes a new sea treaty. If the United States and other developed states have proceeded unilaterally in the interim, the prohibitions cited above would have at least potentially current rather than prospective effect. However, the same difficulties which the Declaration encounters in satisfying the customary norm tests, including the impact of statements of protest by the United States and others against its binding effect, would blunt the legal effect of the Declaration even if a new treaty is forthcoming from UNCLOS III. As a result, any new seabed regime which is not acceptable to the United States could legally be ignored by it under the res inter alios acta principle.

obscure the differences among the nations of the world, and to allow each party to interpret it in accord with its political and legal position.

274. See note 212 supra.
275. See generally KRONMILLER, supra note 28, at 251, 252; Burton, supra note 125, at 1154, 1155.
276. Oxman, supra note 8, at 31–35.
277. See text accompanying notes 234–49 supra.
278. See text accompanying notes 255, 256–61 supra.
279. This principle is codified in art. 34 of the 1969 Vienna Convention on the Law of Treaties, supra note 212, which states, "A treaty does not create either obligations or rights for a third State without its consent." Concerning the potential for political harassment which the passage of a new sea treaty would create, however, see text accompanying notes 433–42 & 526–29 infra.
D. Current Practice

As has been indicated, nodule recovery beyond the limits of national jurisdiction is a freedom of the sea, as is fishing. Since restrictions on the sovereignty of states will not be presumed, the only way in which this status may change is by the emergence of a new general practice, recognized as binding by a large majority or near consensus of specially affected states. In order to update the status of customary international law, the current policies and practices of the states of the world must therefore be examined, in order to determine whether any change in the nodules' res nullius status has occurred since the convening of UNCLOS III in 1973.

The strongest statement opposing the legality of unilateral ocean mining endeavors was made by Ambassador Satya Nandan of Fiji, Chairman of the Group of 77. He, with the support of the less developed states and the socialist bloc, contended that the Declaration of Principles was binding, and that any unilateral legislation purporting to authorize seabed mining would therefore be illegal. This position, however, was rejected by another group of states, including the western industrialized states, which supported the legality of unilateral exploitation. A third group of states counselled restraint but did not expressly endorse the legal conclusions of the Group of 77. These statements, and their underlying policies, may usefully be examined more closely.

First, the cautionary statements of the latter group of states are limited by their express language to expressing political, not legal, conclusions. These statements, therefore, cannot be interpreted as evidence of an intent to be bound by a prohibitory norm.

Second, the group of states specifically affirming the legality of...
unilateral appropriation includes states which account for a substantial portion of the world’s wealth, as well as a disproportionately high percentage of the world population. Furthermore, four of these states — the United States, the United Kingdom, Japan, and the Federal Republic of Germany — are among the few states in the world with a short term seabed mining capacity. In addition, French, Dutch, Belgian, and Italian firms are among those involved with ocean mining consortia. Certainly, these states must be deemed “specially affected” for purposes of fulfilling the qualitative consensus requirement.\(^2\)

Combining this group of states with that group which has refrained from declaring the illegality of unilateral exploitation produces an interesting result: the alleged consensus prohibiting unilateral nodule recovery is supported by a majority of the Asian, African, and South American states, and fails to achieve even a simple majority of the European, Australian, and North American states. This pattern may suggest not only the failure of the moratorium to achieve a qualitative consensus among the specially affected states, but also its failure to satisfy even the most basic customary requirement of a generalized practice.

The group of states which has asserted the illegality of unilateral appropriation includes the Group of 77, China, the Soviet Union, and the Eastern European Bloc. Alan Berlind, Director of the Office of the Law of the Sea Negotiations of the United States Department of State, has recently estimated that this group consists of approximately 119 to 130 states.\(^2\) The common position of this number of states cannot be summarily dismissed; however, it should be re-emphasized that all but the Soviet Union lack the technical capacity to exploit, a substantial industrial need for the metals, or a present interest in seabed mining concerns. As such, they do not constitute “specially affected” states. The Soviet Union’s position, however, presents a more difficult analytical problem.

The Soviet Union voted against the Moratorium Resolution of 1969,\(^2\) and, although abstaining in the vote on the Declaration of Principles, was careful to point out that it had no legally binding effect.\(^2\) As of 1978, however, it had changed that position, concluding that unilateral nodule recovery had become illegal. This switch led one delegate to remark:

One great Power, which had refused to accept the Declaration

\(^{286}\) See text accompanying notes 244–46 supra. Even if the category of “specially affected states” is broadened to include those states which import or consume large quantities of the metals contained in the nodules, these same states would meet those criteria as well.

\(^{287}\) Joint Hearings on S. 493, supra note 24, at 105.

\(^{288}\) See note 261 supra.

\(^{289}\) See text accompanying note 269 supra.
adopted by the General Assembly in 1970 and had tried to undermine the work of the Conference, now stated that it was opposed to any unilateral legislation. It would be well, therefore, to examine the real motives and intentions of that Power, which might be to compete with other great Powers in sea-bed mining.290

Along the same lines, a noted scholar has observed that “the Soviet Union would also be reluctant to encourage early U.S. development of deep sea-bed mining because they would like more time to develop their own technology to compete with the United States.”291 In an absence of adequate technology, the Soviet Union cannot be included in the category of “specially affected states.” If this hypothesis is correct, then none of the specially affected states is on record as supporting any international norm which impairs the legality of unilateral nodule recovery as an exercise of freedom of the seas.

Second, the Soviet Union currently has little need for the metals contained in manganese nodules. It has ready reserves of several of the metals involved, and is a major exporter of manganese to the United States.292 Thus, its decision to oppose unilateral nodule recovery may actually be political rather than legal — especially given the fervor with which its earlier legal conclusion was maintained293 — and thus does not satisfy the opinio juris requirement of customary law.294

Finally, Professor Gregory Tunkin, the leading Soviet authority on international law,295 had indicated that the Soviet approach to international law holds that acquiescence in its norms is voluntary.296 The more general issue may therefore be raised concerning whether any state which does not recognize the binding force of any international custom can ever satisfy the opinio juris requirement and thereby contribute to the development of new customary norms.

290. Record of the 109th Plenary Meeting, supra note 253, at 14 (statement of Mr. Ke Tsei-shuo of China).
291. Charney, Law of the Sea: Breaking the Deadlock, 55 FOREIGN AFF. 598, 624 (1977). Kronmiller has gone still further and has asserted that the Soviet Union presently does not have the technology to proceed with nodule recovery on its own. KRONMILLER, supra note 28, at 88.
292. KRONMILLER, supra note 28, at 88; Charney, supra note 291, at 624.
293. “The political decision to reverse what had been a strongly held legal position could not have been a difficult one to take, although it did appear that this reversal was a subject of some embarrassment among Soviet lawyers.” KRONMILLER, supra note 28, at 88. In referring to the Moratorium Resolution in 1969, the Soviet Union had taken the traditional freedom of the seas approach, stating that “the operative part is so phrased that it can be interpreted as infringing the freedom of the open seas sanctioned by international law.” 24 U.N. GAOR 15, U.N. Doc. A/C.1/PV.1709 (1969).
294. See notes 234–43 supra.
295. See, e.g., VON GLAHN, supra note 234, at 14, n.5.
In addition to maintaining that a new customary norm now prohibits unilateral nodule recovery, the Group of 77 has further contended that a new peremptory norm has emerged which mandates that all new areas of human exploitation, the seabed included, be subject to a "common heritage" regime. This principle is perceived by the LDCs as consistent with the "new international economic order," which calls for the redistribution of the world's wealth, with significant resource transfers from the developed states to the LDCs. Support for this theory is found in the Declaration of Principles, the proposed International Code of Conduct on Transfer of Technology, which refers to technology as part of the "universal human heritage," and the Draft Moon Treaty. The Antarctic Treaty, although not mentioning the words "common heritage" anywhere in its text, is also cited to support a "common heritage" regime in the Antarctic. Finally, all these precedents are seen to coalesce in the Charter of Economic


298. See, e.g., the Declaration on the Establishment of a New International Economic Order, which states as one of its primary goals worldwide economic cooperation "whereby the prevailing disparities in the world may be banished and prosperity secured for all." The Declaration concludes by calling on all United Nations members "to exert maximum efforts" toward the implementation of the Declaration, "which is one of the principle guarantees for the creation of better conditions for all people to reach a life worthy of human dignity." G.A. Res. 3201 (S-VI), U.N. GAOR, Supp. (No. 1) 4, U.N. Doc. A/9559 (1974) at 5. See also the Programme of Action on the Establishment of a New International Economic Order, G.A. Res. 3202 (S-VI), U.N. GAOR, Supp. (No. 1) 5, U.N. Doc. A/9559 (1974), which is designed to provide guidelines for the implementation of the aforementioned Declaration.

299. See note 224 supra.


301. Draft Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, art. 11, ¶ 1, U.N. Doc. A/34/664 (1979): "The Moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, and, in particular, in paragraph 5 of this article." Part 5 of art. 11, referred to in the text, makes specific some of the rights and duties appertaining to States, and may evidence the fact that the "common heritage" principle requires further specificity before it can ripen into a legal norm. Serious objections have been expressed in the Senate debate on S. 493 concerning the designation of celestial areas as "common heritage." See Letter of Sen. Frank Church to Hon. Cyrus Vance (Oct. 30, 1979), reprinted in 125 CONG. REC. 518, 546 (daily ed., Dec. 14, 1979) (remarks of Sen. Javits). See also 21 HARV. INT'L L.J. copy to come (1980).


303. In fact, the 12 original signatories were most careful to do no such thing. While arts. 1 and 2, respectively, provide that Antarctica be used exclusively for peaceful purposes and be open to free scientific investigation, art. 12 provides that the treaty is a 30-year interim measure. Article 4 is quite specific that "Nothing contained in the present treaty shall be interpreted as . . . a renunciation by any contracting party of previously asserted rights or of claims to territorial sovereignty in Antarctica."
Rights and Duties of States,\textsuperscript{304} passed on December 12, 1974, by a vote of 120 to 6, with 10 abstentions. The Charter, in its preamble, states as one of its fundamental purposes the promotion of "the establishment of the new economic order"\textsuperscript{305} and is replete with provisions aimed at the economic growth of developing states and at preventing their further exploitation.\textsuperscript{306} While these aspirations clearly command the attention of the world, and will be considered fully in their policy aspects in Section V infra, their application as legal principles must meet the four part test for customary norms set out above.\textsuperscript{307} As the International Court of Justice pointed out recently in the South-West Africa Cases, "Rights cannot be presumed to exist merely because it might seem desirable that they should."\textsuperscript{308}

In order to constitute peremptory norms of customary law, a norm must enjoy a high degree of acquiescence and be moral or humanitarian in character.\textsuperscript{309} Should such a norm be found, there can be no derogation from it by any state. Any treaty is void \textit{ab initio} if it conflicts with such a norm,\textsuperscript{310} and existing treaties which come into conflict with a subsequently emerging peremptory norm become void to the extent of the conflict.\textsuperscript{311} Should the "common heritage" or "new economic order" principles coalesce into peremptory norms, therefore, the United States could be bound to them even without its consent, and any nodule recovery treaties between it and other states would be rendered void.

The peremptory norm analysis consists of two issues. First, is the common heritage norm moral, humanitarian, or "deeply rooted in the human conscience?"\textsuperscript{312} Second, since only general customary law can create such a norm,\textsuperscript{313} is the four part test for customary law satisfied as to the universal application of the common heritage principle and the creation of a new economic order?

The answer to the first of these questions is a qualified "yes." The most widely recognized peremptory norms concern slavery, genocide,


\textsuperscript{305} \textit{Id.} preamble.

\textsuperscript{306} \textit{Id.} arts. 2, 7, 8, 19, 25.

\textsuperscript{307} See text accompanying notes 234–49 supra.


\textsuperscript{310} See Vienna Convention on the Law of Treaties, supra note 212, art. 53.

\textsuperscript{311} \textit{Id.} art. 64.


\textsuperscript{313} Verdross, \textit{supra} note 309, at 61.
war crimes, and inhumane treatment of peoples, all of which affect human life and freedom directly. There is also authority for concluding that piracy, which does not necessarily involve similar harm to human beings, is also precluded by such a norm. Even if the more restrictive approach is followed, and direct human harm is required as the necessary focus of such norms, it would still be possible to contend that such harm may accrue (although indirectly) as a result of a historic pattern of exploitation of the less developed states by developed states.

Even assuming arguendo the humanitarian basis of the asserted norm, however, the customary standard, which requires a general practice recognized as binding by a large proportion of the specially affected states, would still have to be met. In this regard, it is useful to note that the Code of Conduct on Transfer of Technology and the Moon Treaty are still in their formative stages and that their precedential value is therefore still speculative. Similarly, the Antarctic Treaty, while creating an interim "common heritage" status for the continent, expressly disclaims any intent to derogate from pre-existing claims of sovereignty. The Charter of Economic Rights and Duties, therefore, provides the most focused forum for international dialogue concerning the policies of states on the "new international economic order." Not surprisingly, many of the states which expressed serious misgivings about the seabed Declaration of Principles have also expressed dissatisfaction with the content of the Charter of Economic Rights and Duties. These states constitute a substantial portion of the world economic community and a high percentage of the world's population. It is difficult to see how a generalized practice, let alone a qualitative consensus of the specially affected states, can be found absent acquiescence by these states. It is also difficult to perceive which states would be more "specifically affected" by a principle whose goal is banishing disparities in world wealth distribution than the economically powerful states of North America, Western Europe, and Japan. In the absence of a qualitative consensus including a majority of the "specially affected states," no new customary norm can emerge.

Furthermore, several of those states which either voted in favor or

315. Article 14 of the Convention on the High Seas, supra note 125, suggests that piracy may be a crime of universal jurisdiction. Such jurisdiction usually accompanies only violations of international peremptory norms. Article 15 then defines piracy as "any illegal act of violence or depredation, committed for private ends [on the high seas] . . . and directed . . . against persons or property on board such ship. . . ." (Emphasis added.)
316. See note 303 supra.
317. These states include the United States, the Federal Republic of Germany, Great Britain, Austria, Luxembourg, the Netherlands, Denmark, Norway, Canada, Ireland, Spain, France, Belgium, Italy, Israel, and Japan. 14 INT'L LEGAL MATS. 251, 265 (1975).
abstained refused to acknowledge the binding force of the Charter of Economic Rights and Duties of States. For example, while the representative of Fiji, which voted in favor, said that the document "would indeed be a Magna Carta in the sphere of international economic and social cooperation if it were accepted by a genuine consensus of all member states," he expressed "regret" that this was not the case.\textsuperscript{318} Even more directly, the representative of Canada, which abstained, stated:

In view of the manner in which this document has been adopted, I must make it clear that, in the view of my delegation, the document cannot be considered as a basis for the evolution of international law in the controversial areas where the Charter did not gain general acceptance.\textsuperscript{319}

These statements, \textit{inter alia}, evidence the absence of the \textit{opinio juris} of states concerning the prospective effect of the Charter of Economic Rights and Duties of States.

Thus, in the absence of either \textit{opinio juris} or a qualitative consensus, despite vehement and multi-faceted protest by the Group of 77, the socialist bloc, and others, no new norm prohibiting the unilateral recovery of nodules has emerged since the convening of UNCLOS III in 1973. Even had such consensus emerged, the United States and other states with nodule recovery potential would probably have been able to preserve their rights through protest.

\section*{E. The Application of International Law to United States Legislation}

\subsection*{1. The Legislative Scheme}

As has been indicated, the United States Congress has passed legislation to regulate and license United States citizens who wish to explore and exploit the mineral resources of the deep seabed.\textsuperscript{320} For purposes of this analysis, only the earlier Senate version, entitled the "Deep Seabed Mineral Resources Act" (Act), has been examined.

In section 2(a)(1), the Act articulates the United States' interpretation of the current state of customary and positive international law:

\begin{quote}
The Congress finds that . . . exploration for and commercial recovery of hard mineral resources of the deep seabed is a freedom of the high seas to be exercised with reasonable regard for the
\end{quote}

\textsuperscript{319} Id. at 61.
\textsuperscript{320} See Deep Seabed Mineral Resources Act, \textit{supra} note 1.
interests of other states in their exercise of those and other freedoms of the high seas recognized by general principles of international law. . . .

The legislative scheme contemplated by the Act is straightforward. All United States citizens are precluded from exploring or exploiting deep seabed hard mineral resources except as provided by the Act.\(^{322}\) In addition, a "reciprocating states" system is created, with mutual recognition of licenses granted by other states.\(^{323}\) Any United States citizen may apply to the Administrator of NOAA for an exploration license or a work permit.\(^{324}\) This application consists of a work plan for a particular area,\(^{325}\) proof of the technological\(^{326}\) and financial\(^{327}\) ability to exploit, and any other data which the Administrator may require to assure that international legal standards, including environ-

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321. Id. § 2(a)(1). Concerning the conclusion that this premise in fact states customary international law, see generally text accompanying notes 115–319 and especially 119–74 supra.

322. Id. § 101(a)(1)(A). Scientific research, mapping, the furnishing of equipment, and the testing of equipment without recovery of a significant quantity of nodules, however, are exempted from this prohibition. Id. § 101(a)(2). The United States has international authority to so regulate, of course, pursuant to the "citizenship" basis of international jurisdiction. See, e.g., Sachs v. Government of the Canal Zone, 175 F.2d 292 (5th Cir. 1949); United States v. Aluminum Co. of America, 148 F.2d 416 (2d Cir. 1945); 6 M. Whiteman, Digest of International Law 118 (1968).

323. Deep Seabed Mineral Resources Act, supra note 1, §§ 101(a)(1)(B), 102(b)(2), 117. Speculation at the UNCLOS sessions has run rampant that, should the United States implement this provision, and should the alternative ICNT regime prove unduly burdensome to the technically advanced states, several such states, including France, Great Britain, and the Federal Republic of Germany would join in this United States-sponsored "reciprocating states" regime. The net result of such action would be to effectively create an alternative international regime, thereby severely limiting the impact of the UNCLOS regime. No formal support, however, has emerged as of this time for this course of action, and the affected states have carefully limited their policy statements to prospective suggestions concerning the ICNT so as not to make this threat express. For examples of the most recent policy statements by these states, see note 253 supra.

324. Such applications by applicants with appropriate financial and technical resources are required to be approved unless the size of the area is not a logical mining unit, or exploitation would result in an unavoidable and significant adverse impact on the environment, or another applicant has previously filed an acceptable claim to the same mining area. Deep Seabed Mineral Resources Act, supra note 1, §§ 103(a)(2)(D), 103(b). In addition, § 105(a) allows permit denial for five specified international legal and political grounds: (1) where the activity would unreasonably interfere with the exercise of the recognized high seas freedoms of other states; (2) where the activity would place the United States in delict of a treaty obligation; (3) where the activity might reasonably be expected to lead to a breach of international peace involving armed conflict; (4) where the activity could reasonably be expected to result in a significant adverse effect on the environment; and (5) where the activity would pose an inordinate threat to the safety of life and property at sea. The effect of these provisions in bringing the legislation into conformity with international law will be examined in the text accompanying notes 344–56, 376–78 infra.

325. The work plan shall describe an area selected by the applicant, of sufficient size to allow for intensive exploration, and shall include the intended schedule for commercial recovery, environmental safeguards and monitoring systems, details as to the area and the resources thereof, and the methods and technology to be used in exploitation. Deep Seabed Mineral Resources Act, supra note 1, §§ 103(a)(2)(B), 103(a)(2)(C), 103(a)(2)(D).

326. Id. § 103(c)(2).

327. Id. §§ 103(a)(2)(B), 103(c)(1), 108.
mental standards are satisfied. In case of conflicting applications concerning the same area, the Administrator shall consider, inter alia, the time of the application, the time at which exploration was commenced, the continuity of exploration, and the amount of funds expended on exploration. The Administrator's authority to deny permits is limited to narrowly specified grounds, and the Act provides procedural due process safeguards to persons whose applications are denied.

Once issued, exploration licenses and exploitation permits are valid for ten and twenty years, respectively, and are valid as against all citizens of the United States or any reciprocating state. Permits may be issued effective January 1, 1982. The legal regime established by the Act is provisional pending the adoption of a new international sea treaty which is ratified by the United States.

In subjecting this legislation to international legal analysis, five basic restrictions on the recovery of manganese nodules may be discerned. First, the area subject to exploitation must be beyond the national jurisdiction of any state. Second, no claims of sovereignty or exclusive exploitation rights may be made to any particular seabed area. Third, any nodule-recovery regime must operate with reasonable regard to the exercise by other states of their freedoms of the seas. Fourth, to the extent that the Declaration of Principles creates

328. Id. §§ 103(a)(2)(A), 103(a)(2)(B), 103(a)(2)(C).
329. Id. §§ 101(b), 103(b).
330. Before denial of any license or permit applications, or before taking any administrative enforcement action pursuant to § 106(a)(2) of the Act, the administrator of NOAA is required to publish notice of his pending decision in the Federal Register, allow the applicant or permittee up to 180 days to correct the relevant deficiency, and in any case to take no action until 30 days from the date of the required notice. Id. §§ 106(b)(3), 106(b)(4). These provisions, however, shall not apply when the President determines that immediate action is necessary to avoid either a treaty violation or a breach of the peace, or when the Administrator of NOAA determines that immediate action is necessary to protect the environment from significant adverse impact or to protect the safety of life and property at sea. Id. §§ 106(a)(2)(B), 106(c). Absent such exigent circumstances warranting summary action the Act provides for both administrative review and judicial review pursuant to the Administrative Procedure Act, 5 U.S.C. §§ 704–06 (1966). Deep Seabed Mineral Resources Act, supra note 1, §§ 106(b), 106(d).
332. Id. § 102(b)(2).
333. Id. § 102(c)(1)(D).
334. Should the United States ratify such a treaty, its controlling effect is specifically stipulated by § 201(3) of the Act, which provides "that this Act should be transitional pending the adoption of an international agreement at the United Nations Conference on the Law of the Sea, and the entering into force of such agreement, or portions thereof, with respect to the United States. . . ." This provision may not even be necessary, due to the automatic effect of the "latest expression of congressional intent" approach long applied by the Supreme Court where an inconsistency between a treaty and congressional legislation has been found. See Chae Chan Ping v. United States, 130 U.S. 581 (1889). Concerning the international legal cognizability of the United States' refusal to be bound by a subsequent international sea treaty which it refuses to ratify, see text accompanying notes 277–79 supra.
335. See text accompanying notes 146–70, 183–203 supra.
336. See text accompanying notes 174–82 supra.
new customary obligations to which no protest has been expressed, states must attempt to comply with such obligations in good faith.\textsuperscript{337} Finally, as in all international situations, the United States has an obligation to resolve all outstanding issues consistent with the principle of peaceful settlement of disputes.\textsuperscript{338}

2. Jurisdictional Definition of the Deep Seabed

The first issue concerns the delimitation of the seabed area subject to exploitation. In order to ascertain the precise area claimed by the United States as subject to general exploitation, a circuitous route of legal constructs must be traversed. The basic definition of the deep seabed area is provided by section 4, paragraph 4 of the Act: "'deep seabed' means the seabed, and the subsoil thereof to a depth of ten meters, lying seaward of and outside the Continental Shelf of any nation." The continental shelf is in turn defined by the 1958 Convention on the Continental Shelf,\textsuperscript{339} to which the United States is a signatory. The Act takes cognizance of the possible future development of this doctrine at UNCLOS III.\textsuperscript{340}

The Act also excludes from the deep seabed any area beyond the continental shelf, if the United States recognizes it to be under the jurisdiction of another state.\textsuperscript{341} This provision, of course, is intended to cover those areas which, although not covered by the conventional definition of the continental shelf, are included in other zones of exclusive coastal state resource control, such as the 200-mile exclusive economic zone. This cryptic language is the result of the so-called "Gentlemen’s Agreement," endorsed by UNCLOS III when it adopted

\begin{itemize}
\item \textsuperscript{337} Concerning this issue, Kronmiller has written that, at the very least, exploitation must result in some benefit to the international community. KRONMILLER, supra note 28, at 9. That not only the LDCs but also the highly developed states acknowledge this obligation is evidenced by the revenue sharing provisions of title V of the Act, although the United States' official position continues to be that the "common heritage" principle has no legal meaning whatsoever. If the United States inclusion of revenue sharing provisions stems from a sense of obligation rather than eleemosynary concerns — clearly a question of fact — then the \textit{opinio juris} requirement would be satisfied, and at least this much of the "common heritage" principle may arguably have coalesced into a customary international norm. Concerning the official position, \textit{see}, e.g., Deep Seabed Mineral Resources Act, \textit{supra} note 1, § 2(a)(2):
\begin{quote}
The Congress finds that . . . the United States supported United Nations General Assembly Resolution 2749 (XXV) declaring the principle that the mineral resources of the deep seabed are the common heritage of mankind, but anticipated that this principle, with other freedoms of the high seas, would be legally defined under the terms of a comprehensive international Law of the Sea Treaty to be agreed upon in the future.
\end{quote}
\item \textsuperscript{338} \textit{See}, e.g., U.N. CHARTER art. 33.
\item \textsuperscript{339} See note 201 supra.
\item \textsuperscript{340} Deep Seabed Mineral Resources Act, \textit{supra} note 1, § 4(2).
\item \textsuperscript{341} \textit{Id.} § 4(2)(c) includes in the definition of "continental shelf": "any area of national resource jurisdiction of any foreign nation, if such area extends beyond the continental shelf of such nation and such jurisdiction is recognized by the United States."
\end{itemize}
its Rules of Procedure. The UNCLOS negotiations have been conducted on the assumption that the results will be a "package deal," and that no final decision on any issue will be taken until all parts of the treaty are acceptable to the Conference by consensus, or, if necessary, by a two-thirds vote. This fact has led many commentators to contend that a linkage exists between seabed consensus and acceptance by the developed world of other new principles, such as the 200-mile zone, which have emerged from UNCLOS III and which arguably are of primary benefit to the LDCs. The qualifying language — "if . . . such jurisdiction is recognized by the United States" — suggests that the United States intends to preserve its right to reject such claims if seabed consensus is not achieved; moreover, section 3(a)(2) of the Act indicates that the United States "exercises its jurisdiction in accordance with generally accepted principles of law recognized by the United States." (Emphasis added.) Finally, section 105(a)(2) provides that the Administrator may refuse to issue a permit on the ground of a conflict with international obligations established by a treaty or convention to which the United States is a party; international customary norms are not included in this section. By retaining for the United States such significant discretion to interpret international law and conduct, these provisions give rise to a potential conflict between the application of the Act and international law.

The potential of the Act to produce an international delict may be examined in the following scenario. First, let us assume that the United States has implemented the Act and is pursuing a unilateral seabed policy. Let us further assume that a hypothetical coastal state (state X) has claimed an economic zone of 200 miles, but that the United States has refused to recognize the claim because, having received no benefits from an UNCLOS regime to which it does not adhere, it also does not recognize any positive law obligations flowing from that regime. Finally, let us assume that a United States national has filed a claim under the Act to a nodule bed, say, 175 miles from the coast of state X. Under these circumstances, the workings of the Act, as written, would compel the United States to commit an international delict.

First, the Administrator of NOAA would be required to issue a license to a qualified applicant if no violation of a treaty is involved. Here, there would be no such violation absent United States ratification

343. Charney, supra note 291, at 599.
of the international sea treaty. However, international law draws no such distinction between treaty obligations and customary obligations; a violation of either will result in an international delict. Thus, whether the United States is delictual in our hypothetical case is contingent upon whether state X's claim to a 200-mile economic zone is cognizable pursuant to customary international law. That such a claim may be cognizable as an aspect of international custom may be seen from the following analysis.

Despite the "Gentlemen's Agreement," new customary norms may arise if the four part test for customary international law is satisfied.\textsuperscript{345} The first requirement of a generalized practice is probably met due to the general acceptance of the economic zone by the states of the international community at UNCLOS III.\textsuperscript{346} Even the United States, which formerly opposed any exercise of resource jurisdiction (other than that based on continental shelf claims) past the territorial sea has now claimed a 200-mile zone for purposes of fishing.\textsuperscript{347} Thus, the evidence favoring the existence of a generalized practice is substantial, and the United States may also be estopped to deny the validity of other 200-mile claims due to its own similar claim.\textsuperscript{348} Second, the category of "specially affected states" is much broader as applied to the economic zone than as applied to nodule recovery. All of the more than 100 coastal states of the world are "specially affected" by economic zones which they themselves have the power to create. Therefore, even should the United States be able to distinguish its own 200-mile claim as applicable only to living resources, its impact on the formation of a customary norm would be much smaller on the economic zone issue than its impact on the norm concerning nodule recovery generally. Third, the \textit{opinio juris} character of the United States' refusal to extend an economic zone for purposes of non-living resources is subject to question, since most of the areas subject to such a zone are already covered by continental shelf claims previously asserted by the United States.

Thus, section 4(4)(B) of the Act, by defining the deep seabed without reference to third state claims recognized by international custom but not treaty, presents the danger of compelling the United States to commit a breach of international law. The solution, of course, is to reword the aforementioned provisions to require the Administrator

\textsuperscript{345} See text accompanying notes 234–49 supra.
\textsuperscript{348} Estoppel has been recognized as a "general principle of law recognized by civilized nations" in, \textit{inter alia}, \textit{The Case Concerning the Factory at Chorzow (Merits)}, [1928] P.C.I.J. Ser. A, No. 17 at 33–34.
to consider customary as well as conventional international law in his decisions as to the issuance of permits and licenses.

3. Claims of Exclusive Jurisdiction

A second requirement under international law is that no claims of sovereignty or exclusive exploration rights may be asserted over deep seabed sites. With respect to this issue, the bill is carefully drafted. Section 3(a)(3) sets out the jurisdictional bases of the Act, which are citizenship jurisdiction as applied to United States nationals, and consent jurisdiction as applied to the nationals of reciprocating states. Section 3(a)(4) expressly disclaims any intent to assert sovereign or exclusive rights of any deep seabed areas. Even section 109(e), which attempts to create stable reference areas for environmental monitoring purposes, only precludes mining in those areas by United States citizens. While the effectiveness of such areas is open to question, especially if other mining states choose not to "reciprocate," no international legal flaws may be found in these provisions. In fact, no exclusive claims may even be necessary, due not only to the limited number of states possessing nodule recovery technology but also to the protections afforded United States licenses by the "reasonable regard" doctrine and the Convention on the High Seas.

4. Reasonable Regard for Other Freedoms of the Seas

Third, international law requires that any nodule recovery regime must operate with reasonable regard to the exercise of other permissible exercises of the freedoms of the seas. The structure of the Act obviates the potential legal problems in this area, although the strictness with which it will be enforced is speculative. Section 105(a)(1), concerning eligibility for a license or permit, provides: "Before the Administrator may issue a license or permit, he must find, in writing . . . that the exploration or commercial recovery proposed . . . will not unreasonably interfere with the exercise of the freedoms of the high seas.

349. See text accompanying notes 184-204 supra.
351. Although only four or five states have current unilateral nodule recovery capacity, best estimates currently estimate the number of available mine sites at between 76 and 400. See Ocean Mining Administration, U.S. Department of the Interior, Manganese Nodule Resources and Mine Site Availability 11 (1976).
352. See text accompanying notes 174-82, 205 supra.
353. "Ships shall sail under the flag of one State only and, save in exceptional circumstances expressly provided in international treaties or in these articles, shall be subject to its exclusive jurisdiction on the high seas." Convention on the High Seas, supra note 125, art. 6 (emphasis added).
354. See text accompanying notes 174-82 supra.
The inclusion of customary as well as positive norms of international law, and the omission of the "if . . . recognized by the United States" language referred to above, is significant. The international legal obligation is recognized categorically not only in this general provision but also in the more specific applications referred to in the Act. Section 103(a)(2), in enumerating the reasons for permit denial, includes "serious adverse impact on the quality of the environment which cannot be avoided by the imposition of reasonable restrictions." Section 105(a)(5) further includes the posing of "an inordinate threat to the safety of life and property at sea." The freedoms of fishing, navigation, and the emplacement of submarine cables and pipelines, are clearly protected by the general language of sections 105(a)(1) and 111 of the Act. It must again be emphasized, however, that the enforcement of these provisions may prove to be as critical as their express terms, especially in the area of environmental protection.

The legislation adopts as one of its purposes the acceleration of an environmental assessment program to assure that commercial mining and recovery activities are "conducted in a manner which will encourage the conservation of such resources, protect the quality of the environment, and promote the safety of life and property at sea." The Administrator of NOAA is specifically charged with the acceleration of the environmental assessment program so that he may become familiar with an "as accurate as practicable" evaluation of mining effects. The Administrator will then use these assessments for the implementation of the licensing procedures, including the filing of an Environmental Impact Statement by the applicant.

A complete assessment of potential mining effects is essential to effectuate the purposes of the legislation. Without such a standard, meaningful assessment of Environmental Impact Statements would be impossible. Should mining be permitted before the Phase II studies complete the DOMES program of environmental evaluation, those operations should be strictly limited to the tonnage used for the Phase I short range projections. Further, the operations should be limited in both time and area to the test areas employed in the Phase I research. Continuous monitoring of the system, with particular attention to the amount of toxic discharges, should be used to control adverse environmental impact. Radical deviation from normal patterns

355. See also Deep Seabed Mineral Resources Act, supra note 1, § 111.
356. See also id. § 105(a)(4).
357. Id. § 2(b)(3).
358. Id. § 109(a).
359. See generally id. § 110–112.
already discerned should cause the immediate cessation of mining operations.

The Act provides for the monitoring of mining operations by agents of the Secretary. Those officers are authorized to board vessels to ensure that all applicable rules and regulations are being obeyed and to report any violations to the Secretary. The Secretary is vested with the power to fine and to bring civil suit, or to suspend or revoke the permits of non-complying operators. Additionally, the Administrator is vested with emergency powers to immediately suspend a permit or license if there is danger of a significant adverse effect on the environment or if the preservation of life and property warrants immediate action. The Administrator may also direct an immediate suspension or modification of a particular activity without revoking the company's right to operate.

The efficacy of these safeguards depends directly on the Administrator's ability to rapidly assess the effects of a particular activity in a particular area. If the effects of a mining operation are not discerned until damage is already done, the effectiveness of the remedy is significantly diminished. In light of this emergency power, the need for a complete environmental assessment becomes even more critical. Without an adequate standard to judge the magnitude of the mining effects, the Administrator would have to estimate both the extent and the severity of the environmental damage. This is clearly contrary to the stated purpose of the legislation and potentially violative of the "reasonable regard" international norm as well. However, if a standard is provided in conformity with the purpose of the DOMES studies, the Administrator may effectively evaluate the reports of his officers. If the mining operations were systematically monitored and the Secretary were given accurate assessments of their impacts on the surrounding environment, the emergency powers would be an effective protective device, the exercise of which would forestall any potentially catastrophic results of deep seabed mining.

Large scale mining operations should not be licensed until adequate environmental standards based on the conclusions of the Phase II studies may be promulgated. If mining operations are permitted in the interim, strict regulations should restrain the nature and extent of the mining within the presently established limits. Without such a restrictive approach, the United States would be disregarding both the

360. Id. § 114.
361. Id. § 303.
362. Id. § 302(a).
363. Id. § 106(a)(2)(A).
364. Id. § 106(c).
avowed purpose of the legislation and its legal obligations to the international community. 365

5. Acquiescence in the Common Heritage Principles

The fourth legal requirement deals with the elusive “common heritage” principle discussed above. Although the conclusion that the principle does not impose a moratorium on unilateral nodule recovery is amply supported by state practice, 366 the United States may well be in the process of acquiescing in the principle that some sort of international benefit is legally required by the “common heritage” concept. 367 In UNCLOS III, the United States has taken negotiating positions which have considered the need for some type of payments by contractors into a “common benefit” fund. 368 Title V of the Act imposes a tax of 3.75% of the imputed value of the resources, measured by taking twenty percent of the fair market value of the manganese, nickel, cobalt, and copper contained in the nodules. 369 The amounts collected by this tax constitute the “Deep Seabed Fund,” which shall be appropriated at the will of Congress, and which may include “the payment of any financial obligations which may be assumed by the United States pursuant to an international deep seabed treaty adopted by a United Nations Conference on the Law of the Sea which is ratified by, and in force for, the United States.” 370

Although the LDCs have contended that a small royalty payment standing alone is insufficient to satisfy the “common heritage” principle, 371 this position may be criticized on two levels. First, the Declaration of Principles, in which the “common heritage” principle is set forth, ambiguously articulates the content of that principle and how it will operate in practice. 372 Second, since the United States has indicated its intent to rely on its protests, inter alia, as a defense to any

365. See Hearings on H.R. 3350, supra note 29, at 131. The magnitude of the environmental considerations was summarized by Samuel Levering of the United States Committee for the Oceans: “The pollution you put in the water off the coast of Africa soon appears in the Caribbean and later off the shores of Norway. As difficult as it was (sic), you have to deal with ocean pollution both ways, nationally and worldwide.”

366. See text accompanying notes 267–70 supra.

367. See note 340 supra.


369. Deep Seabed Mineral Resources Act, supra note 1, § 502(a). The enacted legislation imposes a tax of 0.75% of the value of the recovered metals. The proceeds therefrom are to be deposited in the “common benefit” fund. Wall St. J., June 27, 1980, at 4, col. 1.

370. Deep Seabed Mineral Resources Act, supra note 1, § 503(d). The annual aggregate amount of this tax has been estimated at approximately $8 million. See 125 CONG. REC. S18,510 (daily ed. Dec. 14, 1979) (remarks of Sen. Long) [hereinafter cited as Long on S. 493].

371. KRONMILLER, supra note 28, at 341 n. 622.

372. See text accompanying notes 270–75 supra.
evolutionary "common heritage" norm, any such norm will be applicable to it only as to the extent of its acquiescence. In this case, such acquiescence is limited to the revenue-sharing offer. While the generosity of this offer will be evaluated infra in its policy context, it appears sufficient to satisfy any legal requirements which, arguendo, may have emerged from the "common heritage" principle.

6. Peaceful Settlement of Disputes

The final requirement of international law concerning nodule recovery is that of peaceful settlement of disputes. On this issue, the language of the Act limits the extent of protection to be afforded to miners to diplomatic, as opposed to military, protection. Furthermore, a permit may be denied if the Administrator finds that licensing might "create a situation which may reasonably be expected to lead to a breach of international peace and security involving armed conflict." These provisions provide an escape from the otherwise inexorable workings of the Act in a highly sensitive area of international relations.

Thus, the Act, with the caveats enumerated above, provides a framework for nodule recovery which is or can be made harmonious with the requirements of international law. If enforced as carefully as it is written, the Act and operations thereunder should not subject either the United States or its nationals to international legal sanction.

IV. STRATEGIC ADVISABILITY OF A UNILATERAL UNITED STATES APPROACH

An analysis of the relative merits of the unilateral and international approaches may be divided into three categories. The first includes those issues as to which the two approaches produce approximately similar results. The resolution of many of the issues included in this category is predetermined by already existing norms of customary international law. Included in this group are provisions guaranteeing the safety of life and property at sea, guaranteeing that reasonable regard will be taken to protect the exercise by other states of their respective freedoms of the seas, as well as provisions imposing minimum performance and expenditure requirements on licensees,

373. See text accompanying notes 255, 256-61 supra.
374. See generally Deep Seabed Mineral Resources Act, supra note 1, tit. V.
375. Compare note 370 supra with the text accompanying notes 298-407 infra.
376. See, e.g., U.N. CHARTER art. 33.
378. Id. § 105(a)(3).
379. Deep Seabed Mineral Resources Act, supra note 1, § 112; ICNT, supra note 4, art. 146.
380. Deep Seabed Mineral Resources Act, supra note 1, § 111; ICNT, supra note 4, art. 147.
381. Deep Seabed Mineral Resources Act, supra note 1, § 103(a)(2)(B); ICNT, supra note 4, Annex II, arts. 16(1)(iii), 16(2)(c).
and providing for on-ship inspections by agents of the licensing
authority.\footnote{Deep Seabed Mineral Resources Act, 
\textit{supra} note 1, \S\ 114; ICNT, 
\textit{supra} note 4, art. 162(2)(y).} In the critical area concerning environmental protection, both the Act and the ICNT leave open the specific questions concerning the tolerable level of environmental disruption, and delegate the resolution of these issues to future administrative processes.\footnote{Section 109 of the Act directs the Administrator of the National Oceanic and Atmospheric Administration to accelerate the program of environmental assessment, and to prescribe the actions which the licensee or permittee shall take in the conduct of exploration and commercial recovery activities to insure protection of the environment. Section 401(d) further provides that any regulations made pursuant to administrative rulemaking procedures under 5 U.S.C. \S\ 553, shall be "consistent with the requirements of the National Environmental Policy Act of 1969, Fish and Wildlife Coordination Act, Marine Mammal Protection Act, Migratory Bird Treaty Act, Endangered Species Act, and any other applicable Federal laws, treaties, or agreements or regulations promulgated pursuant thereto." By comparison, the ICNT, art. 145, provides that, with respect to activities in the area, "necessary measures shall be taken in order to ensure effective protection for the marine environment from harmful effects which may arise from such activities . . . to that end the Authority shall adopt appropriate rules, regulations, and procedures . . . ." Article 192 of the ICNT establishes a general obligation to protect and preserve the marine environment, which is to be fulfilled, in the case of the deep seabed, through the use of "the best practicable means at [states'] disposal and in accordance with their capabilities." ICNT 
\textit{supra} note 4, arts. 194(1), 194(3)(c). Although the qualifying language of the last clause is a concession to the maritime powers which felt that overly aggressive environmental protection might inhibit commerce, the proposed international regime would prevent any "flag of conven-ience" states from adopting their own less stringent environmental requirements, thereby endangering the deep seabed. See Charney, 
\textit{supra} note 291, at 604. For the full proposed international environmental protection regime, see ICNT, 
\textit{supra} note 4, arts. 192–237.} Both systems allow the denial of a license application upon a finding of an inevitable and serious adverse impact on the marine environment.\footnote{Deep Seabed Mineral Resources Act, 
\textit{supra} note 1, \S\ 103(2)(D)(ii); ICNT, 
\textit{supra} note 4, art. 162(2)(w).}

\section*{A. Advantages to the Unilateral Approach}

The second category of issues concerns advantages to the United States of the unilateral approach. The major benefits of this approach, listed in approximate descending order of importance, are (1) freedom from possible international political restraints on nodule recovery by United States nationals; (2) lower taxes for United States mining interests; (3) the absence of any transfer of technology requirements and related competition; (4) the absence of international controls on the quantity of minerals produced; and (5) the protection of mining investments. These policy advantages may now be examined in depth.

\subsection*{1. Arbitrary Restraints on Licensing of Mining Interests}

The first prospective advantage is the freedom from potentially arbitrary international restraints on the licensing of United States mining interests. Central to the significance of this benefit is the quantity of
discretion enjoyed by the proposed Authority under the ICNT approach. The decision to approve a license application is vested in the Council, the election procedures of which are particularly complex.\textsuperscript{385}

385. The ICNT proposes that an International Seabed Authority be created, to be composed of all signatories to the Convention. It is to be granted international legal personality. ICNT, supra note 4, art. 176. The Authority is to comprise four major organs: the Assembly, Council, Secretariat, and Enterprise.

The Assembly is to be composed of all parties to the Convention, each with one vote. \textit{Id.} art. 459. It is the supreme organ of the Authority with the power to establish general policies, to allocate shares of the financial benefits of seabed exploitation, to elect Council members, and to elect the Secretary General of the Authority and the Director General of the Authority from among the candidates proposed by the Council. \textit{Id.} art. 160. Substantive decisions of the Authority are to be made by two-thirds of those states present and voting. \textit{Id.} art 159.

The Council is the executive organ of the Authority, with its membership elected by the Assembly. Article 161 provides:

1. The Council shall consist of 36 members of the Authority elected by the Assembly, the election to take place in the following order:
   (a) Four members from among the eight States Parties which have the largest investments in preparation for and in the conduct of activities in the Area, either directly or through their nationals, including at least one State from the Eastern (Socialist) European region;
   (b) Four members from among those States Parties which, during the last five years for which statistics are available, have either consumed more than 2 per cent of total world consumption or have had net imports of more than 2 per cent of total world imports of the commodities produced from the categories of minerals to be derived from the Area, and in any case one State from the Eastern (Socialist) European region;
   (c) Four members from among countries which on the basis of production in areas under their jurisdiction are major exporters of the categories of minerals to be derived from the Area, including at least two developing countries whose exports of such minerals have a substantial bearing upon their economies;
   (d) Six members from among developing countries, representing special interests. The special interests to be represented shall include those of States with large populations, States which are land-locked or geographically disadvantaged, States which are major importers of the categories of minerals to be derived from the Area, and least developed countries;
   (e) Eighteen members elected according to the principle of ensuring an equitable geographical distribution of seats in the Council as a whole, provided that each geographical region shall have at least one member elected under this subparagraph. For this purpose the geographical regions shall be Africa, Asia, Eastern Europe (Socialist), Latin America and Western Europe, and others.

\textit{Id.} art. 161.

Voting in the Council on matters of substance is to be by three-fourths of those present and voting. \textit{Id.} art. 161(2). Its powers include the establishment of specific policies, the exercise of control over the Enterprise, the initiation of complaints before the Seabed Disputes Chamber, and the power to approve work plans submitted by states or their nationals for seabed mining permits. Such proposed plans are deemed to be approved unless rejected by a three-fourths majority within 60 days of the submission of the plan to the Council by the Technical Commission, a subsidiary organ of the Council. \textit{Id.} arts. 162, 163, 165.

The Secretary General is the chief administrative officer of the Authority. \textit{Id.} art. 166. He is to be elected from a list of candidates proposed by the Council, and provisions are set forth to insure the neutrality of the Secretary General. \textit{Id.} art. 168.

The Enterprise will be created to explore and exploit the seabed on behalf of the Authority. \textit{Id.} art. 170. The ICNT contemplates a parallel system of exploitation, whereby exploitation is to occur both by the Enterprise and by states or state-sponsored entities and nationals. \textit{Id.} art. 153(1). In order to assure that the Enterprise has the technology and the financing to exploit the resources, the text requires transfer of all applicable technology to the Enterprise as a condition of...
Based on these procedures, the United States must be able to enjoy support from more than twenty-five percent of the Council's thirty-six members in order to be able to insure the granting of licenses to United States nationals, since license applications are deemed granted unless rejected by a three-fourths majority of the Council. In order for the United States to enjoy this quantity of voting support, some adjustment in current ICNT Council selection procedures may be required.

386. From among the first category (states with the largest investment in nodule mining), the United States would likely be supported by at least three of the four members so selected (excluding the Eastern European representative). Of the second category (major consumers), the same result should obtain. Of the third group (major exporters including at least two developing countries), one or two supporters from among the four states thereby selected would not be an unreasonable expectation. From among the fourth group (six developing states), no support should be assumed. From the last group (18 states, geographically balanced), two or more supporters could hopefully be found. Although this analysis is purely conjectural, with all the attendant dangers of speculation, and support for the United States' position would, of course, vary depending upon the issue involved, the selection procedure implicitly makes similar assumptions about voting patterns, and attempts to insure an effective veto (25% of 36 plus 1, or 10 members) to the Western industrialized powers as a condition of gaining their assent to the international regime. Based on the calculations above, either 9 or 10 states might be called upon to support the United States on crucial issues. In order to insure an effective veto of adverse Council decisions, the United States should attempt to effect modification of ICNT art. 161(1e) to provide that at least two members shall be elected from each of the five geographical regions, thereby bolstering the position of the “Western Europe and others” group of which the United States is a member.

Concerning this issue, it should be noted that several of the medium-sized Western states have further objected that ICNT art. 161(e), which guarantees one seat on the Council to each geographic region, leaves them with virtually no opportunity for election to the Council. They have therefore also proposed to the Working Group of 21 and to the First Committee that two seats be allocated to each region rather than one. However, no significant discussion of this issue has recently taken place, as resolution of this issue is generally perceived to be contingent upon resolution of the broader issue concerning the mechanics of the decision-making process as a whole. See U.N. Doc. A/CONF.62/C.1/L.27 (Part IV) at 1, 2 (March 20, 1980).

387. ICNT, supra note 4, art. 162(2j).

388. See note 386 supra. Furthermore, serious reservation in the Senate has been expressed concerning both the lack of a guaranteed seat on the Council for the United States, and the ambiguity of Council powers in light of the designation of the Assembly as the “supreme” organ of the Authority. The LDCs have interpreted this language to mean that the Council’s role is merely the implementation of Assembly policies. If, for example, the LDCs in control of the Assembly were to declare as policy a strong application of the ambiguous antimonopoly language of the ICNT (cited in the text preceding note 290 infra), the Council might legally be powerless to override this interpretation. It is strongly suggested that a high priority be placed by the United States negotiating team on the reconciliation of these provisions with the “objective and nondiscriminatory standards” language of ICNT, annex II, arts. 1, 2. See 125 CONG. REC. S18,515 (daily ed. Dec. 14, 1979) (remarks of Sen. McClure).

It should be noted here that the Working Group of 21 has recently proposed to the First Committee changes in this article, which include as selection criteria the amount of previous investment and the number of past unsuccessful license applications; moreover, a new paragraph has been proposed to modify the offensive language of annex II, para. 3: “Selection shall be made taking into account the need to enhance the opportunity for all States Parties, irrespective of their social and economic systems or geographic locations, to participate in activities in the Area and to prevent monopolization of these activities.” U.N. Doc. A/CONF.62/C.1/L.27 (Part II) at 1
Even assuming that satisfactory voting procedures can be worked out, United States interests may be subjected to the discretion of the Authority under the current internationalist approach in other areas as well. Annex II, article 7 of the ICNT permits the Authority discretion in the applicant selection process. Paragraphs 1 and 2 of this article indicate that selection from among competing applicants is to be based upon "objective and non-discriminatory standards." These standards are to include the likely quality of performance and the immediate financial return to the Authority, but paragraph 3 goes on to provide, in ambiguous language, that:

Selection shall be made taking into account the need to provide for all States Parties, irrespective of their social and economic systems or geographical locations, opportunities to participate in activities in the Area, the need to prevent monopolization of such activities, and the need to exploit reserved sites, and on the basis of a determination of equitable merit, taking into account the resources and effort already invested by prospective operators in prospecting and in exploration, if any.

In addition, Annex II, article 6(3) provides that the Authority is to authorize work plans unless, inter alia, the proposed work plan is sponsored by a state which has already had approved either three work plans within a 400,000 square kilometer area around the requested site, or work plans for areas in excess of three percent of the unreserved seabed Area. Participation of developing states in activities in the Area is to be "promoted . . ., having due regard to their special needs and interests." The United States has strenuously resisted any international regime which would grant one applicant preference over another on the basis of nationality, and has suggested that such an approach might result in mining under flags of convenience. Nevertheless, the United States supports in principle any regime which is both equitable and non-discriminatory. Assuming that these "quota" or "anti-monopoly" provisions can be excised or modified by subsequent nego-
tiations, the inherent interference potential of the authority with the licensing of United States nationals to mine the deep seabed would be substantially reduced.

This problem is but a particular manifestation of the more general United States concern with the extent of the Authority's discretion to regulate mining activities. The difficulties with such extensive discretion have been noted:

Trained lawyers are familiar with the classic techniques for dealing with the delegation of powers of others. Those techniques include specificity regarding the delegated powers and their parameters, the "conditions precedent" to the exercise of those powers, prohibited results, and the factors and objectives that should guide the choice.393

While there is general agreement that certain restrictions on mining — most notably environmental controls — are properly subject to the Authority's discretion,394 as a general matter, specificity in the proposed sea treaty would serve United States interests better than administrative discretion. Even if acceptable treaty language can be negotiated, the procedures for selecting the Law of the Sea Tribunal and Seabed Disputes Chamber, both of which are elected by the Assembly,395 remain problematic. While the jurisdiction of both tribunals can be avoided in virtually every case by a number of devices,396 the presence of an impartial dispute settling agency would fortify the utility of specific treaty language as a defense against arbitrary exercises of power

393. Oxman, supra note 8, at 40.
394. These decisions, for example, cannot be determined with sufficient precision in advance, and should not be subject to complex treaty-amendment procedures. Id. at 39.
395. ICNT, supra note 4, annex V, arts. 3, 4. The Law of the Sea Tribunal, composed of 21 members, will be elected by the Assembly. Id. art. 4. At least three members must be from each of the five geographical groupings. Id. art. 3. Eleven members of the Tribunal will be designated by the Assembly as the Seabed Disputes Chamber. Id. art. 36. This Chamber will have authority over state-Authority disputes, disputes between parties to a seabed contract, and disputes between the Authority and a prospective contractor who has fulfilled the qualifications set forth but who has nevertheless been denied a license. Id. art. 187. If the Seabed Disputes Chamber concludes that a state has committed gross and persistent violations of the seabed regulatory scheme, it may suspend that party from voting in the Authority. Id. art. 185.
396. ICNT, supra note 4, art. 298(1) allows reservations to specific aspects of Tribunal jurisdiction. Article 287 further allows states, in selecting the dispute-settlement mechanisms to be applied in their disputes, to bypass the Tribunal entirely, and to opt for arbitration under annexes VI and VII of the ICNT. Interstate disputes may be referred to the Seabed Disputes Chamber only at the request of both parties. Id. art. 188(1). Although that Chamber is authorized to render advisory opinions when requested by the Assembly or the Council, it may only affect voting privileges in the Authority if its conclusions are adopted by the Assembly upon Council recommendation. Id. arts 189, 295; annex V, art. 39. The Chamber has no jurisdiction over the exercise by the Authority of its various discretionary functions, which may include decisions on the granting of a license to a particular applicant under the conditions described in note 385 supra. See ICNT, supra note 4, art. 190.
by the Authority. In summary, although the current drafting text provides standards for licensing which may discriminate against United States nationals, and although its provisions are not as yet specific enough to fully protect United States interests, the voting system involved in licensing decisions is designed to assure the major industrialized powers that their nationals will have access to seabed resources. Whether further negotiations will produce results on these issues acceptable to the United States should be discovered relatively soon, as UNCLOS III has expressed an intent to conclude negotiations and formalize the text during 1980.

2. International Taxation

A second advantage of the unilateral approach concerns the relative levels of taxation. While the Act, in addition to federal income taxes, imposes a revenue sharing tax of three-fourths of one percent, the financial obligations contemplated by the international approach are much greater. Initially, states will be assessed, in accordance with the United Nations scale of assessments, for the expenses of creating the Authority. In addition, although both the unilateral and international regimes impose an administrative processing fee, only the international regime imposes a $1 million annual flat fee or an alternative production charge substantially in excess of the three-fourths of one percent of the mineral value. Even though national taxes may be offset as a production cost, the representatives of

397. Oxman, supra note 8, at 40.
399. ICNT, supra note 4, arts. 158, 160(2)(e), 170(4), 171–173; id. annex III, arts. 9, 10. Concerning the amount of these costs, Senator Long has estimated, based on the current United States assessment rate of 25% of the United Nations budget, that the United States obligation could run in excess of $100 million per year. Precise figures are, of course, unavailable at this time, since the costs of creating the Enterprise cannot be predicted with certainty. The ICNT leaves the exact amount to be allocated for this purpose to be decided by the Assembly on a one state, one vote basis. Long on S. 493, supra note 370, at S18,511. Not surprisingly, serious reservations have been expressed concerning adherence to a proposed sea treaty the precise financial obligations of which are not ascertainable. Consequently, pursuant to negotiations following the publication of Revision I of the ICNT, the Working Group of 21 has proposed a compromise between the extremes of letting the Assembly fix the obligation at a later date (the approach of Revision I) and specifying the amount necessary to finance the Enterprise in the Convention. The compromise, proposed as an amendment to annex III, art. 10, delegates the precise financing details to the Preparatory Commission, which will allocate financial responsibilities in time to enable states to consider their obligations prior to ratification. U.N. Doc. A/CONF.62/C.1/L.27 (Part III) at 3, 4 (March 27, 1980).
400. Deep Seabed Mineral Resources Act, supra note 1, § 104; ICNT, supra note 4, annex II, art. 12(2).
401. ICNT, supra note 4, annex II, art. 12(3).
402. Reservations have, not surprisingly, been expressed concerning the payment of any fees for rights presently enjoyed without cost under the freedom of the seas doctrine discussed above. See, e.g., Long on S. 493, supra note 370, at S18,510.
403. Reports of the Committees and Negotiating Groups, Third United Nations Conference
France, the Netherlands, Italy, Belgium, and the United Kingdom have specifically objected to the current ICNT tax rates as excessive. Industry sources have suggested that, in order to be economically feasible, seabed mining must be able to provide at least a fifteen percent return on investment, which the present ICNT figures will arguably not permit. Since there has been increasing international recognition that the total amount of taxes paid should not be so high as to deter mining, a situation which would produce no benefits for anyone, it is to be hoped that accommodation on the production fee figures can be reached during the upcoming negotiating session.

3. Transfer of Technology

A third advantage of the unilateral approach is that it would not subject United States nationals to transfer of technology requirements. The ICNT obliges the miner to agree, upon the consummation of a contract, to make available to the Enterprise, on fair and reasonable commercial terms and conditions, the technology he is using in the area and legally entitled to transfer. With respect to technology not owned by the miner, he would be required to obtain assurances from the owner of his willingness to sell it to the Enterprise. In case of a failure to comply with this obligation, arbitration is mandated, and the contract may be revoked for failure to comply with the arbitral decision. Similar obligations require transfer of technology to developing states which have applied for a mining contract pursuant to the treaty. The United States has presented general, though less than categorical, objections to mandatory technology transfer. It has specifically noted that the obligation to transfer continues indefinitely, long beyond the time needed to put the Enterprise in business. On this issue, however, it must be noted that the "reason-
able commercial terms and conditions” language of the ICNT should permit mining concerns to recoup a reasonable return on their investments.

A related issue concerns the benefits of preempting or excluding competition from either the LDCs or an international Enterprise, should the United States pursue a unilateral approach. Both the advantages and the political costs of monopolization may be significant, a fact recognized by the United States when it agreed to the “parallel exploitation” system in principle, and when it further agreed to the reservation of one mining site for the Enterprise for each site which is made available to private exploitation.

4. Limitations on Mineral Recovery

A final advantage of the unilateral approach concerns the absence of limitations on the quantity of mineral resources to be produced. While the ICNT sets forth a rather complex formula of production controls based on nickel production (effectively a limit on the other metals as well) to last for an interim period of twenty-five years, the Act contains no similar restrictions. Again, although the benefits of unrestricted production to the United States may be substantial, the political costs, due both to the disruption of world commodity prices and to the substantial decrease in the export revenues of land based producers, would also be significant. In an attempt to reach accommodation, the United States has supported the principle of production limitations at UNCLOS III, although it has not as yet taken a position concerning the interim production limitations provided by the ICNT.

recently proposed a limit of 10 years on the transfer of technology obligation, measured from the time at which the enterprise begins commercial production. U.N. Doc. A/CONF.62/C.1/L.27 (Part II) at 15 (March 27, 1980). Should this provision be incorporated into Revision 2 of the ICNT, it would constitute a significant benefit to United States mining interests. The only residual issue would then concern the reasonableness of the 10 year period.

Concerning this benefit, Senator Long has stated, “I do not believe the members of the Finance Committee, let alone the rest of [the Senate] are going to sit back and welcome the creation of a trans-national State enterprise which would be allowed to compete with American companies on a tax-free basis.” Long on S. 493, supra note 370, at S18,510. Concerning the potential political costs, see text accompanying notes 525–30 infra.

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414. Specifically, the level of nickel production shall not be allowed to exceed, during any production year, the increase in nickel consumption during the five years preceding commercial nodule processing, and 60% of the increase in consumption thereafter. ICNT, supra note 4, arts. 150(d), 150(e), 151(2); id. annex II, arts. 6, 7. Once granted, however, a contract to exploit cannot be modified without the consent of all contracting parties. Id. art. 155(6); id. annex II, art. 18.


416. Oxman, supra note 8, at 10.
5. Investment Protection and Incentives

The development of deep seabed resources under the authorizing legislation holds particular benefits for the private sector. The legislation proposes a system whereby companies may, with certain restrictions, hold licenses to explore and recover deep seabed minerals. The application for such license is subject to review by the Administrator of NOAA who is charged, inter alia, with the duty of ensuring that mining operations will be conducted consistent with environmental and international laws. Supporters of the legislation assert that it will secure the interests of United States mining companies by making a clear declaration that deep seabed mining is in the national interest, and by fostering a formal legal framework of exploitation. Without such an explicit statement of policy, companies face the problem of financing preliminary preparations with no guarantee that mining operations will later be permitted. United States companies, along with both foreign and domestic partners, have already spent more than $200 million to develop deep seabed mining technology. With an assurance that such substantial investments will be protected, deep ocean mining ventures may accelerate their efforts to the point that commercial production may result by the mid 1980s.

424. Id. at 116. See also id. at 110–13 (statement of Hon. Elliott Richardson). Ambassador Richardson here notes the faltering of the deep seabed mining developers after the failure of legislation in the 95th Congress. The Ambassador attributes this decline to the lack of an adequate legal framework, either national or international, which would "adequately protect the legitimate economic and political interests of the industrialized countries."
426. Joint Hearings on S. 493, supra note 24, at 181 (statement of Northcutt Ely). See also Nigrelli, supra note 30, at 166–74 (an assessment of the commercial value of the minerals and the net economic gain to the United States).
The legislation also provides that holders of permits must use only vessels documented under United States law for the transportation of minerals.\(^ {427}\) The permittee is required to use at least one such vessel in its operations.\(^ {428}\) These provisions would promote the United States' maritime interest by ensuring that United States flag ships will be used to recover the commercially produced minerals.\(^ {429}\) While some commentators, as well as the Carter administration, oppose this requirement on the ground that it unduly restricts the business operations of the mining companies,\(^ {430}\) the positive influence it would have on the United States shipping industry is significant.

While benefits to private concerns must be judged in light of the public interest,\(^ {431}\) it is clear that the legislation is an attempt, even though an imperfect one, to secure the rights of deep seabed mining companies to carry out their operations. The result of these operations would be independence for the United States from foreign suppliers of certain critical metals. This independence would, in turn, bolster the economic stability of the United States and insure its continued industrial productivity. The critical issue concerning whether this approach is preferable to the international regime now being negotiated at UNCLOS III, however, is a question which will now be considered.

**B. Advantages to the International Approach**

The final group of issues concerns advantages to the United States from participation in an international regime. Listed again in an approximate order of importance, the advantages are: (1) that the nodules recovered by United States nationals would be subject to clear, unencumbered, and undisputed ownership by the recovering party; (2) that exclusive claims to nodule resource beds would be permitted, and internationally recognized as consistent with international law; (3) that the United States, as part of the UNCLOS "package," would enjoy strategic benefits not otherwise available through the customary law process; and (4) that the United States would enjoy increased interna-


\(^{429}\) Joint Hearings on S. 493, supra note 24, at 91 (statement of Sen. Inouye).

\(^{430}\) Id. at 101 (statement of Rep. Bedell).

\(^{431}\) See, e.g., 3 R. POUND, JURISPRUDENCE 31 (1959):

> All the demands that press upon the legal order for recognition are to be recognized and secured so far as possible with the least sacrifice (i.e., claims, demands, desires) as a whole. We are to try to give effect to the whole scheme with the least sacrifice of the items of that scheme. We are to order the satisfaction of claims, demands, or desires with the least friction and waste. To do this requires an appraising, a weighing or valuing of the items.
tional goodwill because of its participation in the UNCLOS process. These prospective advantages may now be examined in detail.

1. Title to the Minerals

The first of these advantages may be stated rather briefly. Although there is strong precedential support for the conclusion that nodules are res nullius and therefore subject to ownership through capture, the amount of state opposition to this conclusion, as well as the Moratorium Resolution and Declaration of Principles, at least present a colorable argument that title may not vest upon capture. This conclusion would be reinforced by the adoption of a broadly supported sea treaty, even if unratified by the United States, which is likely to include language similar to article 137 of the ICNT:

No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, nor shall any State or person, natural or juridical, appropriate any part thereof. No such claim or exercise of sovereignty or sovereign rights nor such appropriation shall be recognized. . . .

No State or person, natural or juridical, shall claim, acquire, or exercise rights with respect to the minerals of the Area except in accordance with the provision of this Part. Otherwise, no such claim, acquisition or exercise of such rights shall be recognized.

Although the norm res inter alios acta generally operates to render treaty obligations binding only upon signatories to that treaty, the less developed states are likely to contend that a widely ratified sea treaty would constitute a "law-making treaty" which, because of its general and quasi-legislative nature, could arguably bind non-signatories even without their consent. The traditional international viewpoint has been that unless they codify pre-existing norms, only some such treaties evolve into binding customary norms, and then only if there has been sufficient subsequent acquiescence to render the norm truly

432. See text accompanying notes 115-35 supra.
433. See note 279 supra.
434. ICNT, supra note 4, art. 137, paras. 1,3.
436. C. FENWICK, supra note 266, at 95.
437. M. SORENSEN, supra note 234, at 296.
general. In defending the efficacy of protest by a state against a potentially normative treaty, Fenwick has written, "other states remain free to remain outside the agreement and be governed by the former law, if any." Nevertheless, authority exists to support the proposition that this norm of unanimity may be falling into desuetude, in light of the increasing complexity of international legislation.

Thus, a colorable argument can be formulated denying the miner's title to the nodules, despite the weight of precedent to the contrary. Manifestations of this argument might take the form of refusals by the LDCs and their supporters to pay for minerals mined by United States nationals and delivered subsequently to the consuming state. The harassment potential of such action should not be underestimated, especially since the ICNT provisions cited above facially impose a duty on signatories to refuse to recognize title other than as acquired pursuant to the international regime. Adherence to this regime by the United States would vest clear and undisputed title in the miner, thereby obviating this potential problem.

2. Exclusive Exploitation Rights

A second advantage of the international approach is that it grants exclusive exploitation rights to seabed nodule tracts, which the

438. C. Fenwick, supra note 266, at 94. See also North Sea Continental Shelf Cases, [1966] I.C.J. 3, 41-45. The Vienna Convention, supra note 212, at 496, recognizes this possibility in art. 38: "Nothing in articles 34 to 37 precludes a rule set forth in a treaty from becoming binding upon a third State as a customary rule of international law, recognized as such."

439. C. Fenwick, supra note 266, at 517.


442. ICNT, supra note 4, art. 137.

443. Id. annex II, art. 1.

444. Id. annex II, art. 3(1)(c).
unilateral approach, hampered by prohibitive norms of customary international law, cannot. The economic importance of claims of exclusive mining tracts should not be understated. "One of the most fundamental elements of any seabed regime is security of tenure over a specific mine site of sufficient size to provide an abundant supply of nodules for the useful life of the mining facility."

The ICNT not only provides exclusive rights, but also security of contract, by providing that, in the absence of a breach by the mining party, a contract shall not be modified or abridged without the consent of all contracting parties. Even if the United States pursues a unilateral policy, indirect protections of its miners' interests would be furnished by both the "reasonable regard" doctrine discussed above, and by article 6 of the Convention on the High Seas; nevertheless, the direct guarantees of mine site exclusivity furnished by the ICNT would clearly be an advantage to both the United States and its miners.

3. Strategic Benefits

The third advantage of the international regime is really a group of advantages. As has been indicated, the UNCLOS III negotiations have been conducted upon the assumption that the resultant ICNT draft represents a "package deal." The precise ramifications of this approach were recently spelled out by Ambassador Nandan of Fiji, speaking as Chairman of the Group of 77, who warned that if the United States and others attempted to pursue a unilateral approach, they could not expect to enjoy all the guarantees concerning the free international uses of the oceans which had already been agreed to at UNCLOS III. This group of advantages therefore concerns present benefits to the United States pursuant to the ICNT approach, which are subject to dissipation if the United States pursues a unilateral mining policy and refuses to ratify the new sea treaty. The most significant

445. See text accompanying notes 145-65 supra. See also Burton, supra note 125, at 1143-50.
446. Section 3(a)(4) of the Act specifically provides that the United States "does not thereby assert sovereignty or sovereign or exclusive rights over, or the ownership of, any areas of the deep seabed." While § 117 of the Act guarantees exclusivity against the nationals of any "reciprocating State," the number of such states is speculative, and unlikely to be very large.
448. ICNT, supra note 4, art. 155(6); id. annex II, art. 18.
449. See text accompanying notes 174-82, 219 supra.
450. See text following note 221 supra.
452. Record of the 109th Plenary Meeting, supra note 331, at 9.
of these advantages concern (1) guarantees of free transit — passage through international straits — and of innocent passage rights through the various other zones of coastal state jurisdiction; (2) limits to coastal state jurisdiction over its adjacent sea; (3) guarantees of the freedom to conduct scientific research in the exclusive economic zone; and (4) the existence of a comprehensive dispute settlement mechanism. The significance of these benefits must now be examined and quantified.

The ICNT provisions concerning transit passage through international straits constitute a significant compromise with United States strategic interests.454 While the “straits states” interests involve a high degree of coastal state control for safety and security purposes, the interests of the United States and the other major maritime powers involve a high priority upon near absolute freedom of movement. The ICNT, on balance, leans toward the latter approach. This orientation is especially significant since the extension of the territorial sea to twelve nautical miles455 now renders all straits of less than twenty-four miles in width potentially subject to coastal state control. These new limits would create over 100 new straits which, under the old three-mile limit, were governed by the high seas regime.456

From the standpoint of United States security interests, several problems inhere in the present straits regime, which is governed largely by customary international law and by the 1958 Convention on the High Seas.457 Article 14 of that Convention, in guaranteeing innocent passage rights, provides that passage is innocent if “it is not prejudicial to the peace, good order or security of the coastal State.” The ambiguity of this definition, and the subjectivity with which it has been applied, have allowed many straits states to refuse an unqualified right of innocent passage to warships even in peacetime,458 despite the contrary conclusion of the International Court of Justice in the Corfu Channel Case.459 The absence of a guaranteed freedom to overfly an international strait,460 and the prohibition on submarine subsurface

455. ICNT, supra note 4, art. 3.
456. See Pirtle, supra note 454, at 479.
458. This group of states includes Oman, the People’s Republic of China, Malaysia, Morocco, Yemen, and North Korea. The Soviet Union, Indonesia, and the Philippines require notice prior to passage. An unqualified right to peacetime innocent passage for warships is recognized by the United States, the United Kingdom, and France. Pirtle, supra note 454, at 481, 482. Concerning the subjectivity of the application of the Convention on the High Seas criteria, see Alexander, Cameron & Nixon, supra note 413, at 29; Charney, supra note 291, at 612.
460. Convention on the Territorial Sea, supra note 207, at 14. See also Charney, supra note 291, at 613; Pirtle, supra note 454, at 481.
transit through straits also are problematic under the current international regime, in that they constitute obstacles to the mobility and secrecy of United States armed forces deployment. The ICNT accommodates these interests by guaranteeing transit passage rights not only to all ships, but also to aircraft, by omitting any requirement of surface passage as to submarines, and by categorically prohibiting the suspension of transit passage rights by the straits state.

In addition to the problems concerning straits, other zones of coastal state jurisdiction present potential obstacles to national maritime and security interests as well. The problems presented by the creation of newly defined "archipelagic states" are analogous to the straits problems. If customary law were to govern the regime of archipelagic waters, significant obstacles to free navigation might well occur. Indonesia, for example, controls all of the deep water straits between Australia and Asia, and could effectively force maritime traffic to navigate between Australia and Antarctica absent an international free transit guarantee. While the ICNT recognizes a right of the archipelagic state to suspend temporarily the right of innocent passage for security reasons upon notice, it also guarantees a basic right of innocent passage to all ships and aircraft through "all normal passage routes used as routes for international navigation or overflight." The United States also has an interest in maximizing free transit through the 200-mile economic zone of coastal states, as it, along with other military and economic powers, often conducts naval and aircraft activities within 200 miles of other states' shores. As the economic zone had not been internationally recognized prior to the convening of UNCLOS III, no comparison with prior regimes is possible; however, it has been argued persuasively that the elaborate cross-referencing of the provisions of the ICNT, coupled with the dearth of previous law on the 200-mile economic zone, must be deemed to have simultaneously created the rights and duties of the coastal state in this respect. The premise of this argument is that the essence of the international consensus concerning the economic zone is in the detail.

462. ICNT, supra note 4, arts. 38, 39.
463. Id. art. 42(1)(A), however, permits the straits state to promulgate regulations on transit passage for the purpose of insuring the "safety of navigation and the regulation of marine traffic." It is possible, of course, to contemplate straits state regulation of submerged passage pursuant to these ends.
464. Id. art. 44.
465. See Charney, supra note 291, at 613.
466. Pirtle, supra note 454, at 483.
467. ICNT, supra note 4, art. 52.
468. Id. art. 53.
469. Charney, supra note 291, at 601.
470. This argument is constructed in order to distinguish the North Sea Continental Shelf
analysis would preclude any coastal state from both asserting the resource jurisdiction permitted by articles 56 and 57 of the ICNT and denying its obligation under article 58 to permit innocent passage for all ships and aircraft.471 Thus, United States navigational interests in the economic zone are likely to be preserved regardless of its adherence to the prospective international regime.

The provisions regarding international straits and archipelagic waters, do guarantee some benefits to United States strategic and navigational interests;472 nevertheless, in quantifying the significance of these benefits, it must be observed that alternatives to international navigational guarantees could be pursued.473 While it is true, for example, that a right of submerged transit passage through straits for submarines would facilitate secrecy and enhance the strategic deterrent, it can also be noted that the small surface area of straits makes them well suited to the use of devices capable of detecting submarine passage. Even if forced to navigate on the surface, as under the present, pre-ICNT regime, military submarines would likely be able to submerge and evade before an effective attack could be mounted. If the risks of surface passage were deemed unacceptable, bilateral submerged passage agreements could be negotiated,474 or submarine launched ballistic missiles could be designed with sufficient range to reach their targets at a firing distance great enough to obviate the need to pass through straits prior to launch.475

Furthermore, political circumstances are likely to be as relevant to promoting free navigation through straits as are international legal guarantees. The width of most critical straits makes them susceptible to blockage due either to a physical impediment or to land based attacks. The United States currently enjoys certain political advantages likely to affect its passage rights through international straits. Many of

Cases, [1969] I.C.J. 3, wherein the International Court of Justice concluded that, while arts. 1–3 of the Convention on the Continental Shelf constituted customary international law, art. 6, concerning shelf delimitations between opposite or adjacent states, was "merely detail."

471. Oxman, supra note 344. See also Charney, supra note 291, at 601.

472. See text accompanying notes 454-68 supra.

473. Dickey, supra note 346, at 24: "Our coastal economic interests are virtually assured regardless of the outcome [of UNCLOS III]. Our strategic requirements must and therefore will be maintained, though possibly at some substantially greater costs, regardless of the outcome." It may be noted in passing, however, that should the ICNT guarantees fail to reach fruition, the straits-bound Soviet Union's mobility interests would likely be more impeded than those of the United States. See Smith, Constraints of Naval Geography on Soviet Naval Power, 27, NAVAL WAR COLL. REV. 46, 46–57 (1974).

474. This is especially true since, although the United States Department of State has classified 16 straits as "of major importance," other informed publicists have suggested that only Gibraltar and the two Indonesian straits of Lombok and Ombai-Wetar are of great strategic importance to the United States. See Osgood, U.S. Security Interests in Ocean Law, in NEW ERA OF OCEAN POLITICS 95 (A. Hollick & R. Osgood eds. 1974); Pirtle, supra note 454, at 490, 491, 496 n.29.

475. Pirtle, supra note 454, at 488, 490, 491.
the straits states, including the Bahamas, Fiji, Indonesia, Spain, and the Philippines, conduct fifteen percent or more of their total world trade with the United States;\textsuperscript{476} nevertheless, political advantages, or even guarantees, are inherently less stable than legal ones, and the value of strong legal guarantees of free and unimpeded transit is not seriously open to question.

Thus, the ICNT contains advantages over the current legal regime in the area of free transit guarantees through international straits and archipelagic waters. Although these advantages do not appear to be essential to the United States strategic position, the alternatives, though viable, are more burdensome. Current political relations may produce favorable results similar to those available pursuant to international legal guarantees of free transit, but these advantages are subject to rapid dissipation, especially if the United States should choose to pursue a unilateral resources policy and fail to ratify a sea treaty perceived as reasonable by the straits and archipelagic states. Of course, since the actual benefit of the transit rights contemplated by the ICNT is contingent upon its ratification by the straits and archipelagic states without substantial reservations,\textsuperscript{477} the ultimate significance of these advantages must await future events.

A second benefit of the ICNT "package" is the acceptance by coastal states of limits on the exercise of ocean jurisdiction.\textsuperscript{478} While coastal states generally perceive benefits from jurisdictional extensions, perhaps even to the midpoint of the oceans, the interests of the major maritime powers have historically been better served by the "freedom of the seas" approach,\textsuperscript{479} with corresponding limitations on the seaward jurisdiction of coastal states. Although the 1958 Conventions attempted to provide limitations on the permissible extent of continental shelf,\textsuperscript{480} contiguous zone,\textsuperscript{481} and territorial sea jurisdiction,\textsuperscript{482} the definitions which they provided have generally been found unsatisfactory. Since the "economic zone" and "archipelagic waters" regimes have emerged only recently, no limits on their extent or scope can be found in positive international law. The ICNT provides these limits, initially by defining precisely the baseline against which maritime zones are to be measured,\textsuperscript{483} and then by limiting substantively the

\textsuperscript{476} Lest reality become too lost in theory, however it must be noted that Iran, until recently, could also be included in this category. See Pirtle, supra note 454, at 489.

\textsuperscript{477} See note 434 supra.

\textsuperscript{478} Concerning this issue, see generally Alexander, Cameron & Nixon, supra note 413, at 8, 17; Charney, supra note 291, at 598, 604.

\textsuperscript{479} See text accompanying notes 125–26 & 146–70 supra.

\textsuperscript{480} Convention on the Continental Shelf, supra note 201, art. 1.

\textsuperscript{481} Convention on the Territorial Sea, supra note 207, art. 24(2).

\textsuperscript{482} Id.

\textsuperscript{483} ICNT, supra note 4, arts. 5–7, 14–16, 47.
extent of coastal state claims to a continental shelf, territorial sea, contiguous zone, economic zone and archipelagic waters where applicable.

Absent these limitations, numerous legal ambiguities would persist. Concerning the delimitation of the baseline, for example, issues have been raised as to the permissible length of straight baselines and the circumstances permitting the designation of an area as a "historic" bay. Concerning the territorial sea, several states have notably persisted in their claims to 200-mile territorial seas pending resolution of the issue by UNCLOS III. Coastal states, absent international limitations, might extend their jurisdictional claims in the economic zone to the point where the distinction between the economic zone and the territorial sea would become blurred. Concerning the continental shelf, coastal states might also attempt to blur the distinction between resource jurisdiction and sovereignty over the area itself, and might even attempt to extend such jurisdiction to the midpoint of the oceans if the area were arguably "exploitable" within the meaning of article 1 of the Convention on the Continental Shelf. Wide acceptance of the jurisdictional limits provided by the ICNT would therefore best serve the interests of the United States. Such acceptance would not likely be forthcoming were the United States to reject the seabed provisions of the UNCLOS "package."

A third advantage of the "package" approach concerns the freedom to conduct scientific research in the area between 12 and 200 miles from the coast of another state. Under the former regime, this area was considered to be high seas, and freedom to conduct research was protected only generally by article 2 of the Convention on the High Seas. Although the 1955 and 1956 commentaries of the International Law Commission alluded to the freedom to conduct research, no specific mention was made of this freedom in the 1958 Convention. Under the regime contemplated by the ICNT, this area is transformed into the economic zone, and the freedom to engage in research is specifically protected and defined. Although the view of the United

484. Id. art. 76, incorporates the geologically imprecise concept of the "continental margin" in its definition, but precludes absolutely coastal-state claims to areas more than 350 miles from the baseline unless the claimed area is less than 100 nautical miles from the 2500 metre isobath. This may still be the least satisfactory and least precise of all the ICNT definitions.

485. Id. art. 3.
486. Id. art. 33.
487. Id. art. 57.
488. Id. arts. 47, 48.
489. Alexander, Cameron & Nixon, supra note 413, at 17.
490. Id. at 18, 29.
491. Id. at 18.
492. This article is reprinted in full in the text accompanying note 211 supra.
493. See text accompanying notes 216 & 217 supra.
494. Although ICNT arts. 56 and 58 permit coastal-state regulatory power over the conduct
States is that these guarantees should be stronger, and that the criteria for coastal state regulation should be more precisely defined, the inclusion in the ICNT of written research guarantees is a qualified advantage over the former regime.

The final advantage of the "package" concerns the creation of a formal dispute settlement process under the Authority. Absent such a process, the possibilities for conflict in the oceans are almost immeasurable. In order to insure maximum efficiency, the process must be non-political, comprehensive, and binding. Although the creation of a Law of the Sea Tribunal is certainly a step toward achieving these goals, the potential politicization of the selection process, as well as the limitations on its jurisdiction and the ease with which the process may be circumvented, may diminish its appeal as presently constituted.

4. International Goodwill

The final advantage of adherance to the international regime concerns the maximization of international political goodwill to the United States. Both the United States and the LDCs have significant interests—both strategic and symbolic—in the resolution of the seabed issue. In addition to the economic and strategic interests discussed above, the United States has symbolic interests in adhering to the traditional procedures of creating new international norms generally, as well as in adhering to the freedom of the seas doctrine as the basic ocean regime, with deviations based upon historic use or upon consensus.

of research, art. 238 provides a right to conduct such research subject to the rights and duties of other states, all of which are required to "promote and facilitate" such research pursuant to art. 239.

495. With respect to potential manifestations of such conflicts, apart from the obvious dangers of international friction per se, see text accompanying notes 411, 442 supra and 525–30 infra. See also Alexander, Cameron & Nixon, supra note 413, at 8; Charney, supra note 291, at 616; Dickey, supra note 346, at 24.

496. Charney, supra note 291, at 616; Oxman, supra note 8, at 7, 8.
497. See text accompanying notes 445–48 supra.
498. See note 385 supra.
499. See note 396 supra; ICNT, supra note 4, at 387(6).
500. Concerning this issue generally, see Alexander, Cameron & Nixon, supra note 413, at 8, 21–24; Burton, supra note 125, at 1139; Charney, supra note 291, at 699; Dickey, supra note 346, at 24–27.
502. See text accompanying notes 24 & 56 supra.
503. In Senate debate on S. 493, Senator Long succinctly stated some of the United States' symbolic interests as follows:

[T]he United States of America is entering a most difficult period in this second half of the twentieth century. We are a strong economic and military power. We can employ these advantages to protect our democratic heritage or we can concede basic principles of international law which in the years ahead will erode our present strength.

Long on S. 493, supra note 370, at S18,511.
The LDCs also have both economic and symbolic interests in the international sea regime. Absent international production controls on seabed mineral production, the losses to the LDCs from copper exportation alone would likely total almost $200 million, or sixty percent of the gross export earnings of the copper exporting states.\footnote{504} Similar losses would likely accrue to cobalt, nickel, and manganese exporting states as well. In addition, if revenue-sharing to the LDCs were internationally recognized as an obligation stemming from the "common heritage" principle, an increase in the per capita income of the LDCs would likely occur as well. Although the total amount of shared revenue is not likely to be large,\footnote{505} a significant multiplier effect could be generated through investment by the LDCs of these proceeds in such activities as food production technology and regional fishery management.\footnote{506} In addition, such contributions would further their symbolic goals of establishing a "New International Economic Order,"\footnote{507} and limiting the "freedom of the seas" doctrine, long perceived by the LDCs as no more than a code word for the protection of the naval requirements of the great powers.\footnote{508} In addition, the unilateral appropriation by the United States of what is arguably an exhaustible world resource\footnote{509} located far from United States territory is likely to be perceived by the LDCs as reminiscent of the 19th century race for colonization and exploitation.\footnote{510} Finally, the LDCs clearly have a stake in the success of UNCLOS III, the longest of all international conferences,\footnote{511} and in the success of the United Nations process as a whole. This process, with its one state, one vote premise, is of fundamental and understandable importance to the LDCs, whose sovereignty, for the most part, is recent and highly cherished. Were the United States to circumvent or reject this process, the LDCs would likely interpret this decision not only as a manifestation of economic greed, but also as a political affront to the principle establishing the sovereign equality of states.\footnote{512} Thus, since both United States and Third World prestige are on the line at UNCLOS III, ultimate United States participation in the new legal regime would likely accrue long term political capital to the United States.\footnote{513}

\footnote{504. Alexander, Cameron & Nixon, supra note 413, at 21.}
\footnote{505. Vincent Nigrelli has recently calculated, based on conservative revenue sharing estimates, an added annual value of only 25¢ per capita to all states with less than a $250 per capita income. Nigrelli, supra note 30, at 174.}
\footnote{507. See text accompanying notes 298, 304–06 & 317–19 supra.}
\footnote{508. See Dickey, supra note 346, at 24.}
\footnote{509. See notes 27 & 28 supra.}
\footnote{510. Burton, supra note 125, at 1139. See also Statement by President Lyndon B. Johnson, 2 WEEKLY COMP. OF PRES. DOC. 930, 931 (July 18, 1966).}
\footnote{511. See Alexander, Cameron & Nixon, supra note 413, at 8.}
\footnote{512. See, e.g., U.N. CHARTER art. 2(1).}
\footnote{513. 1980 could prove to be a turning point for the United States in its political relations with
VI. CONCLUSION

Adherence to either a unilateral approach or the proposed international regime carries with it both benefits and detriments to United States interests. The optimal situation, of course, would lie in adherence to an international regime from which the provisions most offensive to United States interests had been excised or substantially modified.

The United States' negotiating goals, as has been indicated, include (1) more favorable voting provisions in the Council concerning initial licensing decisions, and more specific provisions concerning the applicable criteria;\(^{514}\) (2) selection procedures and priorities which do not discriminate against United States nationals in form or in fact;\(^{515}\) (3) generally lower taxes, with a smaller proportion of the tax payable at the front end, and with a greater percentage of the tax based on profitability rather than on the quantity of minerals produced;\(^ {516}\) (4) exclusion of national liberation movements from the class of potential revenue-sharing beneficiaries;\(^ {517}\) (5) an agreed-to ceiling on the amount of financing necessary to create the Enterprise;\(^ {518}\) (6) a specified time limit on the obligation to transfer technology to the Enterprise;\(^ {519}\) (7) production limitations better suited to promoting efficient world economic growth,\(^ {520}\) and (8) a more satisfactory method for selecting the Law of the Sea Tribunal and the Seabed Dispute Chamber, possibly including some form of weighted voting, and more precise delimitations of their powers.\(^ {521}\)

Assuming that symbolic interests do not override substantive ones at the upcoming UNCLOS sessions, the United states should be able to effect many of these alterations, since it has several inherent bargaining strengths which it should be prepared to assert. Initially, the United States can present a forceful legal argument concerning the legality of

the LDCs. In the context of the Soviet invasion of Afghanistan, the United States has the opportunity to project a moderating image on the international political screen. In addition, United States actions regarding the Panama Canal and establishing maritime boundaries with Mexico and Cuba have heightened Latin American perceptions of United States reasonableness. See 17 INT'L LEGAL MATS. 110 (1978); 17 INT'L LEGAL MATS. 1073 (1978); 16 INT'L LEGAL MATS. 1022 (1977). While the United States need not acquiesce in a regime antithetical to its strategic or economic interests, it should have enough leverage at UNCLOS III in order to harmonize the proposed regime with these interests. See text accompanying notes 522–24 infra.

514. See notes 385 & 386, and text accompanying notes 391–95 supra.
515. See text accompanying notes 391–94 supra.
516. See text accompanying notes 391–406, 407 supra.
A new clarifying amendment proposed by the Working Group of 21 to annex II, art. 3 clearly provides that only states may sponsor license applicants or themselves petition to exploit. U.N. Doc. A/CONF.62/C.1/L.27 (Part II) at 11 (March 27, 1980).
518. See note 399 supra.
519. See note 411 supra.
520. See text accompanying notes 415 & 416 supra.
521. See text accompanying notes 383, 385, 497–99 supra, and note 396 supra.
unilateral exploitation, even assuming the creation of an alternative international regime.\textsuperscript{522} The United States has made significant and widespread concessions during the last several negotiating sessions, which should evidence the good faith nature of its participation.\textsuperscript{523} Finally, absent participation in the international regime by the United States and its principal allies, many of which are currently considering unilateral legislation of their own, it is unlikely that nodule recovery would occur at all under that regime;\textsuperscript{524} this would render illusory any advantages which the LDCs may have written into the final draft treaty. Absent recovery under the international regime, there would effectively be no Enterprise, no technology transfer, no production controls, and no revenue to be shared. The significance of these factors should not be underestimated by the United States negotiating team at the 1980 UNCLOS negotiating sessions.

Of course, the LDCs have negotiating strengths of their own. Should the United States pursue a unilateral approach, some of the benefits of the UNCLOS “package” would unquestionably be lost.\textsuperscript{525} A new race to claim sovereignty over the oceans could ensue, with corresponding erosions of the freedom of the seas doctrine through the customary law process.\textsuperscript{526} Economic boycotts could ensue, with the LDCs attempting to deprive the United States and other nonparticipating states of vital mineral or energy requirements.\textsuperscript{527} Suits might be instituted before the International Court of Justice in an attempt to legitimate the denial of title obtained by United States mining concerns.\textsuperscript{528} Even the possibility of expropriations or sabotage cannot be ruled out,\textsuperscript{529} although these actions are certainly not among those currently discussed by the LDCs.\textsuperscript{530}

Against this background, the passage of unilateral legislation by the House of Representatives may be seen as a calculated political gamble. While it is impossible to predict whether such action would promote or impede the UNCLOS negotiations,\textsuperscript{531} it is generally felt that recent Carter administration support for unilateral legislation has contributed

\textsuperscript{522} See generally text accompanying notes 115–319 supra.
\textsuperscript{523} See 125 CONG. REC. S18,525 (daily ed. Dec. 14, 1979) (remarks of Sen. Hatfield); id. at S18,552, S18,553 (remarks of Sen. Jackson); id. at S18,516 (remarks of Sen. McClure); Oxman, supra note 8, at 8–16.
\textsuperscript{524} See text accompanying notes 21–22 and 290–91 supra.
\textsuperscript{525} See generally text accompanying notes 452–99 supra.
\textsuperscript{526} See text accompanying notes 478–501 supra.
\textsuperscript{527} See Alexander, Cameron & Nixon, supra note 413, at 24; Charney, supra note 291, at 624.
\textsuperscript{528} Charney, supra note 291, at 624. See also text accompanying notes 432–42 supra.
\textsuperscript{530} Joint Hearings on S. 493, supra note 24, at 108 (statement of Alan Berlind).
\textsuperscript{531} Id. at 96–97 (statement of Rep. Bedell).
to a sense of greater urgency in the negotiations.\textsuperscript{532} It must be noted that, although the Congress has passed the Act, no action may be taken pursuant to the Act pending the outcome of the negotiations. In any case, regardless of the "grandfather clauses" of title II,\textsuperscript{533} a subsequent Congress could amend the result by later ratification of a more suitable international agreement.\textsuperscript{534} Thus, passage of the legislation may serve the twofold purpose of demonstrating to the LDCs a willingness on the part of the United States a confrontational stance if necessary, while providing mining entrepreneurs with important if revocable psychological assurances that their interests will be fully considered in future international policy decisions. Unfortunately, its simultaneous impact may be to sacrifice some of the international political capital which the United States has accumulated due to its relatively moderate and non-confrontational posture toward the LDCs in recent years. Consequently, the President must consider the implications of the fact that, to the LDCs, signing the Act would symbolize the adoption of a confrontational rather than a cooperative world view. While the adoption of this view might ultimately prove necessary if the United States is faced with LDC intransigence at the upcoming UNCLOS sessions, the United States should not necessarily sacrifice the opportunity for reasserted world political leadership which has been presented to it by current historical circumstances.\textsuperscript{535}

\textsuperscript{532} See generally KRONMILLER, supra note 28, at 80–99. During the first few weeks of the Sixth UNCLOS Session in 1977, intensive informal negotiations under the leadership of Jens Evensen of Norway produced a set of articles which was widely regarded as providing a basis for more productive negotiations. Nevertheless, Chairman Engo of Cameroon refused to accept the Evensen draft in the then current ICNT. With the assistance of a small extremist group of LDCs, Engo produced a text radically different from the Evensen drafts. In the view of the United States and others, this maneuver substantially impaired the progress of serious and nonpolemic negotiations. See KRONMILLER, supra note 28, at 80, 81. See also Joint Hearings on S. 493, supra note 24, at 107 (statement of Alan Berlind).

\textsuperscript{533} Deep Seabed Mineral Resources Act, supra note 1, §§ 201, 202.

\textsuperscript{534} See text accompanying notes 101, 102 supra.

\textsuperscript{535} See note 513 supra.