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> Around the entire length of the coastline there is scarcely a square mile that is not being used for some purpose and usually for more than one purpose. The chief tenant is the Department of Defense, but not in every case. There are bombing and gunnery ranges, test and calibration ranges, carrier operation areas, torpedo firing ranges, transit lanes, and vast and complicated underwater sound surveillance systems tied to each other and to the shore by a network of cables. On the Atlantic and Pacific coasts, there are also a great many more commercial shipping routes than in the Gulf, and the number of clear days is measurably less. There are commercial cables, oyster beds, and fishing shoals to be considered and a growing number of privately owned submersible craft operating in the relatively shallow waters above the shelf. . . .[1]

About 6,000 oil installments are located on the continental shelf in the Gulf of Mexico alone, some 2,000 of them near shipping lanes and within 50 miles of shore. Ships have already collided some 50 times with these offshore platforms,[2] and the common danger to navigation and petroleum production has been considered serious enough to justify the affected industries to agree informally to the establishment of navigational fairways within which no drilling platforms are to be erected.[3] At the time of

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[1] U.S. DEP'T OF THE INTERIOR, PETROLEUM PRODUCTION, DRILLING AND LEASING ON THE CONTINENTAL SHELF 20 (1966).

[2] *See generally* Griffin, *The Emerging Law of Ocean Space,* 1 INT. LAW. 548 (1967).

[3] By mutual agreement of the affected parties, shipping takes priority over petroleum production within navigational fairways. In such areas the Department of the Army does not grant structural permits in deference to navigational interests.

this writing, deep water supertanker ports, to be constructed on the continental shelf beyond the three-mile limit, are being proposed, and legislation has been introduced in Congress which would authorize mining of the ocean floor.[4]

The picture briefly sketched here tends to dispel any notion that the continental shelves and the waters above them are vast, uncrowded dominions where passing ships and an occasional offshore oil well alone disturb the ocean's tranquility. Already the world's oceans and continental shelves sustain a sizeable number of uses which often are in conflict, and use pressures undoubtedly will intensify in the future. Fortunately, disputes which have arisen, as with the Gulf of Mexico petroleum-shipping controversy, have been settled in an informal manner and in a spirit of mutual cooperation. However, that particular incident may prove to be only the beginning of a spiraling increase in the number of conflicts between users, conflicts which will have to be resolved on some rational basis. Various studies[5] have already foreseen the eventual necessity of determining whether, for example, petroleum should have priority over an oyster bed, but not over ocean commerce, or whether all uses should be of equal priority. After pondering such problems the conclusions seem to be clear. Federal legislation, more comprehensive than the existing Outer Continental Shelf Lands Act,[6] will be required for the development and regulation of the various uses likely to be made of the portion of the continental shelf under the exclusive jurisdiction of the United States. The studies have also indicated that a major objective of future federal policy should be the administration of the region for numerous uses in order to achieve maximum benefit for the public.[7]

The problem of proper uses of the resources of the continental shelf has also received attention by the courts. In *Natural Resources Defense Council v. Morton*,[8] an environmental impact statement describing the effects of proposed offshore leasing of oil and gas tracts was held inadequate on the ground that insuf-

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[4] For further discussion of these developments, *see* note 112 *infra*.

[5] *See, e.g.*, BATELLE INSTITUTE, DEVELOPMENT. POTENTIAL OF U.S. CONTINENTAL SHELVES (1966); PUBLIC LAND LAW REVIEW COMM'N, STUDY OF THE OUTER CONTINENTAL SHELF LANDS OF THE UNITED STATES (1968) [hereinafter cited as PLLRC STUDY].

[6] 43 U.S.C. §§ 1331-43 (1970).

[7] 1 PLLRC STUDY 598 (1968).

[8] 3 ERC 1558 (1972).

ficient consideration was devoted to possible alternative methods of obtaining oil. The court suggested reduction of oil import quotas, increased on-shore drilling, nuclear power, and exploitation of oil shale as additional sources of oil reservoirs. Perhaps one of the rationales underlying the decision was the feeling that no comprehensive overview had been taken of the most efficient uses of outer continental shelf resources and that, by suggesting alternatives which the Department of the Interior had no statutory authority to implement, the court could emphasize the need for new legislative initiatives.

However, little thought has been devoted to whether existing legislative policy will accommodate a more comprehensive use policy or whether a different approach will be required. The purpose of this article, therefore, is to point out the insufficiency of the Outer Continental Shelf Lands Act for dealing with increased use pressures and to propose a new legislative philosophy for the continental shelf based on the multiple use principle.[9] The multiple use resource management concept, which has been the cornerstone of federal public land legislative policy for the better part of a decade,[10] presumes both the establishment of a comprehensive legislative use policy based on the premise that all authorized uses are of equal priority and the existence of an administrative agency with responsibility for regulating private activity and making use allocation decisions.

Multiple use is both a theory of resource management, founded on the principle of efficiency, and a management system in the sense that it envisions an objective, quantitative approach to resource allocation decision making wherever possible. As an economic theory, multiple use seeks to maximize the public benefit from a given region and its resources. Thus the principle is primarily an efficiency concept based on the premise that an area will be used optimally and yield greater benefits per unit

[9] *See* Delogu, *Land Use Control Principles Applied to Offshore Coastal Waters*, 59 KY. L.J. 607 (1971) for a discussion of the general applicability of land management techniques to offshore areas.

[10] OUTDOOR RECREATION RESOURCES REVIEW COMM'N, MULTIPLE-USE OF LAND AND WATER AREAS Study Report No. 17 (1961), provides a comprehensive but somewhat dated treatment of the utilization of the multiple-use concept in federal land management. The Multiple Mineral Development Act, 30 U.S.C. §§ 521 *et seq.* (1970), the Multiple Use-Sustained Yield Forestry Act, 16 U.S.C.A. §§ 528-31 (Supp. 1973), and the Multiple Surface Use Act, 30 U.S.C. §§ 601-05 (1970), are examples of application of the multiple use concept in federal land management.

of management cost when a large number of uses can be made of a tract, recognizing the conflicting physical demands of each use. The concept does not necessarily imply maximization of the benefits from each possible use, but rather the integration of many activities whose sum total of goods and services will exceed the benefits achievable by managing the entire area for a single use. To devote an entire region, the continental shelves for example, to a single dominant use such as mineral recovery, would be inconsistent with multiple use management principles. Since the concept presupposes the need to accommodate numerous activities within a given management system, multiple use is suited for a region whose use demand is expected to continually increase.

As a resource management system, multiple use facilitates the utilization of objective analysis in the making of allocation decisions. Recognizing, for example, that a national forest is valuable for timber, recreation, watershed preservation, grazing, and wildlife, what combination of those activities will generate the greatest social benefits and consequently best serve the public interest? The question is raised because multiple use theoretically seeks that use combination which will produce the maximum benefit from the region. Thus, quantitative techniques are useful in attempting to establish priorities which will be of assistance in evaluating various use combinations; the task lends itself readily to the use of benefit-cost analysis. As a result, the problem of determining the most beneficial use combinations can be approached in a systematic fashion, instead of being handled purely through subjective value judgment.

With these characteristics, the multiple use concept is a logical basis for the administration of any publicly owned or controlled region valuable for several conflicting uses, whether dry land or sea bottom. The concept's specific application to the administration of the outer continental shelf is best demonstrated in light of the probable future uses of the region and the weaknesses of present policy.

The Future Uses of the Continental Shelf

The Public Land Law Review Commission has comprehensively documented the continental shelf's enormous development potential.[11] Though full utilization of this vast resource

reservoir may be years or even generations away, man's deepening reliance on the continental shelf seems certain. As the resources of the land mass of the United States are gradually depleted, their recovery and purification will become increasingly expensive as industry is forced to resort to more efficient and sophisticated processes. At the point where recovery of relatively high-grade deposits from the seas and continental shelves becomes more economical than continued reliance on low-grade material from the land, the oceans and the sea bottom may become a significant supplier of resources. The point at which the shift will occur obviously differs for each resource, but offshore petroleum recovery is already technically and economically feasible. Furthermore, as the country's population continues to increase and simultaneously becomes generally more prosperous, greater value will be placed on "non-development" land uses such as recreation. An increasingly larger percentage of federally owned land may acquire value of sufficient magnitude to make its retention in an undeveloped state competitive with its value for natural resources. The long term effect of both factors will likely be a shift toward greater reliance on the oceans and the continental shelf as providers of society's material sustenance.

Already that movement is in progress throughout the world. In the United States alone, petroleum recovered from the continental shelf is a major revenue producer, contributing in the neighborhood of $100 million annually to the federal treasury in oil and gas bonus payments and royalties.[12] While little interest has as yet been expressed in tapping mineral resources other than oil, gas, and sulphur, an intensive underwater technology research program is being promoted by the government to stimulate private investment.[13] Attractive opportunities have already been found. An estimated one billion tons of phosphate, in the form of recoverable phosphite nodules, lies on the surface of the continental shelf off southern California alone.[14] Limestone is being mined offshore in several areas, including the Gulf of Mexico, Iceland,

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[11] *See generally* 1 PLLRC STUDY.

[12] Barry, *The Administration of the Outer Continental Shelf Lands Act*, 1 NATURAL RESOURCES LAW. 38, 44 (1968). Since 1954, when leasing first started, total revenue from all shelf mineral leases has exceeded two billion dollars.

[13] The basic thrust of the program is spelled out in the provisions of the Marine Resources and Engineering Development Act, 33 U.S.C. § 1101 (1970).

[14] BATELLE INSTITUTE, *supra* note 5, at III-31.

and the Bahamas.[15] From submerged beaches come magnetite, gold, columbite, ilmenite, zircon, platinum, silica, and many other commercially important minerals.[16] Magnetite has been mined off the coast of southwest Japan, diamonds are found off South Africa, and gold is being recovered near Nome, Alaska.[17] By tonnage, sand and gravel are probably the most important minerals consumed in the world and their recovery is becoming prohibitively expensive near large urban areas where land values are soaring. The continental shelf is an obvious source of supply for coastal areas such as the Boston-Washington metropolitan corridor.

The living resources of the region are important as well. At present most of the fish taken in North American waters are caught over the confines of the continental shelf, representing an annual gross value of 500 million dollars.[18] The figure denotes only current catch levels; the ultimate sustained yield harvest is estimated at about ten times greater than present yields.[19] Besides being a supplier of resources, the continental shelf is a vast dumping ground for a variety of civilization's waste products, both civilian and military.[20] By way of contrast, undersea parks already have been created to preserve unique recreational opportunities and ecological values.[21]

All of these activities have their own particular characteristics and spatial demands which may come into conflict, even within a single use category, such as mineral extraction. For example, oil and gas recovery involve a fixed platform occupying a relatively small amount of space. On the other hand, recovery of phosphite nodules found on the surface of the shelf requires a suction

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[15] Mero, *Mineral Deposits in the Sea*, 1 NATURAL RESOURCES LAW. 130, 133 (1968).

[16] *Id.* at 130.

[17] *Id.* at 131.

[18] 1 PLLRC STUDY 352.

[19] *Id.* at 370.

[20] Numerous coastal cities, such as New York, use the sea bottom for solid waste disposal under the authority of the Rivers and Harbors Act of 1899, 33 U.S.C. §§ 401-13 (Supp. 1973), which empowers the Secretary of the Army, acting through the Corps of Engineers, to grant permits for such activities. However, the recently enacted Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C.A. §§ 1401-44 (Supp. 1973), shifted authority over all ocean dumping except dredged material to the Environmental Protection Agency and imposed stringent controls on dumping.

[21] Florida has established underwater state parks for the enjoyment of diving enthusiasts.

operation over a wide area, while sand and gravel production necessitates the use of a dredge, similar to an open pit mining operation.[22] If each mineral exploitation venture is considered mutually exclusive on a territorial basis, where oil is recovered, surface nodules such as phosphite and sand and gravel may remain unavailable, resulting in inefficient resource utilization. Similar conflicts among other uses can easily be envisioned; for example, indiscriminate dumping of industrial wastes or dredge spoils could damage marine life. To adequately control the diverse uses which are and will be made of the continental shelf, and to resolve use conflicts, will require a much more elaborate regulatory mechanism than the Outer Continental Shelf Lands Act now provides. It is from this perspective of future use pressures that present policy should be examined in order to demonstrate its weakness as a basis for the ongoing regulation and development of the continental shelf.

The Evolution of United States Continental Shelf Legislative Policy and Its Primary Objectives

When sufficient technology had been developed in the late 1940's to make the recovery of some continental shelf resources economically attractive, the United States had to satisfy two legal prerequisites before widespread production was possible. First, the development of the region and the exploitation of its resources would have been seriously hindered without the assumption of some degree of jurisdiction by the government to protect the interests of those who might invest in development projects. Jurisdiction was also necessary to provide a regulatory framework for the conservation of resources. Second, any assumption of jurisdiction, since it would be extraterritorial, had to respect the principle of freedom of the seas by avoiding an actual claim of sovereignty over the continental shelf itself beyond territorial waters.[23]

These requirements were satisfactorily met by the two primary statements of United States policy: the Truman Proclamation[24]

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[22] For a comprehensive discussion of underwater resources recovery technology, *see generally* 1 PLLRC STUDY.

[23] W. BISHOP, THE EXERCISE OF JURISDICTION FOR SPECIAL PURPOSES IN HIGH SEAS AREAS BEYOND THE OUTER LIMITS OF TERRITORIAL WATERS 8, 13 (1949).

[24] Presidential Proclamation No. 2667, 10 Fed. Reg. 12303 (1945) [hereinafter cited as Proclamation].

and the Outer Continental Shelf Lands Act.[25] The Proclamation regarded the natural resources of the portion of the continental shelf adjacent to the nation's coasts as "appertaining to the United States, subject to its jurisdiction and control."[26] No express claim of control over the shelf itself was made; the declaration was confined exclusively to natural resources. The Proclamation was followed in 1953 by the Outer Continental Shelf Lands Act, which went a step further and assumed control over both the resources of the shelf and the shelf itself. In the language of the enactment, "[I]t is hereby declared to be the policy of the United States that the subsoil and seabed of the outer Continental Shelf appertain to the United States and are subject to its jurisdiction, control, and power of disposition. . . ."[27] The legislative history of the Act indicates that assertion of jurisdiction and control was thought to be preferable to a claim of sovereignty since the latter action would have been regarded as an infringement on both freedom of the seas above the continental shelf and the airspace above the seabed.[28] As to the exact legal status of that portion of the continental shelf claimed as subject to the jurisdiction of the United States, the Senate Report on the Outer Continental Shelf Lands Act stated that passage of the act would give the United States ". . . neither absolute sovereignty nor absolute ownership,"[29] but only plenary jurisdiction and control.

This assumption of jurisdiction by the Truman Proclamation and the Outer Continental Shelf Lands Act was at least partially justified on the basis that the actions were consistent with previous assertions of extraterritorial jurisdiction by the United States.[30] Support for such acts has stemmed largely from *Church v. Hubbart*,[31] an 1804 United States Supreme Court decision which established the principle that a nation has the power, under certain circumstances, to exercise authority beyond its territorial limits. The Court, speaking through Chief Justice John Marshall, was of the opinion that legislative acts of extraterritorial effect

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[25] 43 U.S.C. §§ 1331-43 (1970).
[26] Proclamation, *supra* note 24.
[27] 43 U.S.C. § 1332(a) (1970).
[28] *See generally* S. REP. No. 411, 83d Cong., 1st Sess. (1953).
[29] *Id.* at 41.
[30] *See* W. BISHOP, *supra* note 23, at 17, for a complete discussion of United States extraterritorial actions.
[31] 6 U.S. (2 Cranch) 165 (1804).

would be recognized by other nations as long as they are reasonable and necessary to secure compliance with a country's laws and policies and administered in a manner not calculated "unnecessarily to vex and harass foreign lawful commerce."[32] The *Church* decision has proved an accurate predictor of international reaction to unilateral assertions of extraterritorial jurisdiction by the United States. In the past, the federal government has exercised its power beyond territorial waters for several purposes, among them customs inspections on the high seas and enforcement of prohibition. Since none of these actions has constituted an extension of the nation's sovereignty, they have neither significantly affected freedom of the seas nor run afoul of the still pulsing controversy over the proper width of territorial waters.[33]

However, to view the Truman Proclamation and the Outer Continental Shelf Lands Act as merely another in a series of extraterritorial acts justified by the *Church* decision is not an entirely adequate analysis. Legislation based directly on the case has been of extremely limited effect, and has arisen from the need to resolve a specific problem in the enforcement of federal laws, such as searching ships on the high seas to prevent the entry of alcohol into the country during prohibition. Legislation of this nature differs significantly from the Outer Continental Shelf Lands Act, so much so that the difference is more than one of degree. By virtue of the Truman Proclamation and continental shelf legislation, the United States has assumed exclusive jurisdiction over the continental shelf for all purposes,[34] not merely for the accomplishment of a single, limited objective. The continental shelf policy of the United States is thus related to past extraterritorial actions only by virtue of the common denominator of exercise of national authority beyond territorial waters. In other respects the policy is conceptually unique. It is unrelated to traditional law of the sea concepts except by virtue of recognition of freedom of the seas, and differs from federal statutes

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[32] *Id.* at 235.

[33] At present, both Iceland and Ecuador have claimed territorial waters extending beyond the twelve mile limit to protect their fishing industries. Canada has considered extending its jurisdiction over coastal waters in the Artic Ocean in order to regulate possible oil pollution from tankers carrying Alaskan North Slope oil. Malaysia and Indonesia are considering a similar action in the Straits of Malacca.

[34] 43 U.S.C. § 1332(a) (1970).

regulating public land because the United States does not "own" the continental shelf as it does the public domain.[35]

The United States' scheme of assumption of extraterritorial jurisdiction for the purpose of exploiting the natural resources of the continental shelf was rapidly accepted by other nations and served as a general pattern for an international regime, the Geneva Convention on the Outer Continental Shelf.[36] The Convention recognizes that each coastal state has, with regard to its own continental shelf, ". . . sovereign rights for the purpose of exploring it and exploiting its natural resources. . . ."[37] The rights affirmed in each coastal state are characterized as "exclusive"[38] in the sense that, should a coastal state not choose or be unable to exploit its adjacent shelf resources, no other nation or entity can do so without the express consent of the coastal state.[39] The "sovereign rights" concept, utilized instead of full sovereignty, is designed, of course, to guarantee freedom of the seas for the waters above the shelf. To further insure that principle, the Convention's drafters carefully defined "natural resources" to include only " the mineral and other non-living resources of the seabed and subsoil together with living organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or subsoil."[40] A coastal state's authority is thus carefully limited to include only the continental shelf and not the waters above it.

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[35] Argument over whether this difference has any practical effect has been extensive. For a representative sample *see* W. GRIFFIN, THE LAW OF THE SEA AND THE CONTINENTAL SHELF 9 (1967); E. KATIN, THE LEGAL STATUS OF THE CONTINENTAL SHELF AS DETERMINED BY THE CONVENTION ADOPTED AT THE 1958 UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA: AN ANALYTICAL STUDY OF AN INSTANCE OF INTERNATIONAL LAW MAKING 108 (1962); Grunwalt, *The Acquisition of the Resources of the Bottom of the Sea—A New Frontier of International Law*, 34 MIL. L. REV. 101, 111 (1966); Lauterpacht, *Sovereignty over Submarine Areas*, 27 BRIT. Y.B. INT'L L. 413 (1950); Stang, *Wet Land, The Unavailable Resources of the Outer Continental Shelf*, 2 J.L. & ECON. DEVELOP. 153, 167 (1968); Waldack, *The Legal Basis of Claims to the Continental Shelf*, 36 GROTIUS SOC. TRANS. 128 (1950); S. REP. No. 411, 83d Cong., 1st Sess. (1953).

[36] Geneva Convention on the Outer Continental Shelf, April 29, 1958, 151 U.S.T. 471, T.I.A.S. No. 5578 [hereinafter cited as Geneva Shelf Convention].

[37] *Id.* art 2(1).

[38] *Id.* art. 2(2).

[39] *Id.*

[40] *Id.* art. 2(4). For an argument that the drafters were wrong to include jurisdiction over sedentary species in a convention dealing primarily with exploitation of mineral resources, *see* Goldie, *Sedentary Fisheries and Article 2(4) of the Convention on the Continental Shelf—A Plea for a Separate Regime*, 63 AM. J. INT'L L. 86 (1969).

The Geneva Shelf Convention mirrors in its provision the same constraints that shaped the policy of the United States. On the one hand existed the desire and ability to exploit the natural resources of the continental shelf; on the other hand, any legal regime designed to facilitate the achievement of that objective had to recognize the internationally accepted limits for extraterritorial actions on or under the high seas. Federal policy evolved in response to those considerations, producing a continental shelf legislative arrangement which has allowed the United States to recover significant quantities of natural resources from an area which it does not "own" in the normal sense.

The United States is simultaneously pursuing a number of objectives in administering that portion of the continental shelf subject to its jurisdiction and control. Included are the advancement of marine technology,[41] pollution control,[42] increased food production,[43] and the recovery of mineral resources.[44] The federal government does, of course, receive a direct monetary benefit from mineral resources extracted from the continental shelf through statutory royalty and bonus payment arrangements; maximization of revenues also appears to be a definite policy objective. The Bureau of Land Management, the agency responsible for the granting of all shelf mineral leases, has consistently considered the fiscal requirements of the federal government as a major factor in its decisions to lease offshore tracts.[45]

From among these multiple policies, encouragement of the recovery of mineral resources by the private sector must be singled out as of foremost importance. The Truman Proclamation indicated that mineral exploitation was a primary justification for asserting jurisdiction over the continental shelf. The Proclamation stated that the United States, being ". . . aware of the long range world-wide need for new sources of petroleum and other minerals, holds the view that efforts to discover and make available

[41] Marine Resources and Engineering Development Act of 1966, 33 U.S.C.A. § 1101 (1970).

[42] 1899 Rivers and Harbors Act, 33 U.S.C. § 407 (Supp. 1973).

[43] 1 PLLRC STUDY 352.

[44] Proclamation, *supra* note 24; Outer Continental Shelf Lands Act, 43 U.S.C. § 1337 (1970). For an analysis of the Federal Government's numerous continental shelf policy objectives, *see* Krueger, *The Development and Administration of the Outer Continental Shelf Lands of the United States*, 14 ROCKY MT. MIN. L. INST. 643 (1968).

[45] *See generally* Krueger, *supra* note 44; 1 PLLRC STUDY 598.

new supplies of these resources should be encouraged. . . ."[46] Congress has faithfully attempted to execute that charge. The Marine Resources and Engineering Development Act,[47] the main policy directive on federal ocean research and development efforts, provides that United States marine science activities should contribute to ". . . the encouragement of private investment and enterprise in exploration, technological development, marine commerce, and economic utilization of the resources of the marine environment."[48] Further, of the various uses which could be made of the continental shelf, the Outer Continental Shelf Lands Act has legislatively set apart one activity, mineral recovery, to be of singular importance. A statutory leasing procedure exists only for the recovery of minerals,[49] even though the act itself assumed jurisdiction for all purposes.

That promoting mineral recovery by private enterprise has been the prime objective of federal policy should, of course, be no surprise. Petroleum extraction from offshore sites was the first venture to be technically and economically attractive, thus the government's course of action has been an entirely logical response to a promising opportunity. However, a continuation of that policy may not be wise. Elevation of mineral recovery to a position of dominance relative to other activities has in effect allowed private operators to obtain mineral leases on practically any area of the continental shelf under federal jurisdiction. As a practical matter, mineral recovery seemingly has priority over all other non-defense activities, including fishing, research, and perhaps even over environmental protection; mineral extraction, therefore, has been recognized as the dominant use[50] to be made of the continental shelf. As a corollary of the government's singular concentration on the encouragement of mineral extraction, practically no administrative machinery has been created to regulate non-mineral activities. While the Department of the Interior has been delegated the responsibility of administering mineral recovery,[51] the only other federal agencies having direct

[46] Proclamation, *supra* note 24.
[47] 33 U.S.C. § 1101 (1970).
[48] *Id.* at § 1101(b)(3).
[49] 43 U.S.C. §§ 1334-37 (1970).
[50] The term "dominant use" is used here in its land management sense, which is that use having priority over other activities in case of conflict.
[51] 43 U.S.C. § 1334(a)(1) (1970).

control over private uses of the continental shelf are the United States Army Corps of Engineers and the Environmental Protection Agency. The Corps has authority over all activities which affect the navigability of the waters covering the continental shelf under the Outer Continental Shelf Land Act[52] and fulfills that responsibility through a permit procedure[53] established by the 1899 Rivers and Harbors Act.[54] The Environmental Protection Agency, by virtue of the Marine Protection, Research, and Sanctuaries Act of 1972, controls waste disposal in the oceans.[55] Consequently, the only formal regulatory mechanism in existence for all non-mineral activities aside from EPA control over ocean dumping is the Corps' permit procedure. Completely aside from the fact that the Corps of Engineers is a military oriented agency engaged in the regulation of civilian operations, the agency's permit system is simply not a sufficient regulatory basis for dealing with the future use pressures projected for the continental shelf.

These two characteristics of existing federal legislation, the de facto establishment of use priorities and an inadequate regulatory framework for non-mineral activities, are the two areas of policy most in need of new legislative initiatives. The possible ramifications of these characteristics are of great significance to the future development of the continental shelf and deserve further analysis.

The Weaknesses of Present Legislative Policy

(1) *The Effect of a Continuation of the Dominant Use Policy*

At present, relatively little is known about the environment of the continental shelf and the natural forces which maintain the equilibrium among its various components. The region's interrelationships and delicate balances remain largely undiscovered, and information about the sea as a total environment is sparse. This lack of knowledge extends into another, equally critical area. While a veritable wealth of data exists about the oceans and the continental shelf as resource reservoirs, and while this country certainly will be forced to rely increasingly on those

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[52] 43 U.S.C. § 1333(f) (1970).

[53] For the procedural details of obtaining a Corps permit, *see* U.S. ARMY CORPS OF ENGINEERS, PERMITS FOR WORK IN NAVIGABLE WATERS (1968).

[54] 33 U.S.C. §§ 401-07 (1970).

[55] Act of Oct. 23, 1972, 86 STAT. 1052 (codified in scattered sections of 16, 33 U.S.C.).

resources in the future, exactly what demands will be placed on the continental shelf ten, or even fifty, years from now are extremely difficult to determine. Will food production be of greater urgency than mineral extraction? Will undersea mining become as important as petroleum recovery? Will the continental shelf be needed more for aquaculture than for waste disposal? The question of priorities seems to be one of the most fundamental continental shelf policy issues in need of legislative resolution. The question is in one sense unanswerable simply because no one "right" set of use priorities can be identified which will remain valid for the indefinite future. For example, federally owned lands were valuable a century ago almost exclusively for their mineral and timber resources. Today the same property is increasingly valuable for recreational uses and as undeveloped tracts of wilderness. Social values have changed, and use priorities for the public lands have changed with them.

Accordingly, to establish by legislation that one use is dominant or that one resource shall have priority carries with it the inherent risk that as national needs change, resource allocation decisions may be controlled by a legislative priority system which no longer reflects current societal demands. This, then, is precisely one of the great dangers in the adoption and continuation of a dominant use legislative policy for any publicly controlled region which might be valuable for several different uses, and the ramifications of this danger should be fully realized. Considered in the abstract, a dominant use policy, which purposefully elevates a particular use to a position of priority relative to other uses which could be made of the same public tract, is normally initiated in response to political or economic pressure in order to exploit a particular resource. To facilitate the endeavor, legislation may be passed which is tailored to the needs of the special interests desiring to recover the resource. The legislation both regulates private exploitation of the resource and recognizes the particular activity as a legitimate use of public property. Certain rights, interests and privileges are normally created in order to protect necessary investments and encourage efficient, profitable recovery.[56] With the passage of time, other needs and demands

[56] This pattern is reflected in United States Outer Continental Shelf Policy. *See* 1 PLLRC STUDY 598.

arise and other resources may become profitable to exploit. At that point, the special interest legislative process may repeat itself, generating a separate statute designed for the particular requirements of the new use to be made of public property. That activity, too, acquires a protective legal canopy with certain privileges relative to other private operations.

In the course of such a legislative response to use pressures on public property, conflicts may often arise between the rights granted earlier uses and those given subsequently when the same tract is valuable for more than one activity.[57] The natural response to such conflicts is to structure legislation sanctioning later uses around the rights granted earlier uses in order to respect the legal rights already created. The result is the establishment of use priorities which, when conflicts occur, tend to favor the earliest recognized use. In effect then, the oldest use may become dominant and retain priority over all other activities even though resource needs have evolved to the point where newer uses are actually more vital to the public interest. Administrators saddled with the inbred priority system consequently may not be able to make allocation decisions which are fully responsive to current and future needs. As an inevitable corollary of this process, little motivation exists to take an overview of the conflict and interrelationships being generated as each successive use is recognized by its own statute. Consequently, a comprehensive use policy may not be formulated. This absence of an overall legislative use policy may of itself be as damaging as the creation of use priorities, because agencies charged with administering the land must act without statutory standards relating use interrelationships to a central management objective.

This abstract picture is not without considerable historical support, found in the evolution of federal public land legislative policy. The first private demand made on federally owned land was for mineral resources.[58] In response, Congress enacted the General Mining Law[59] which allows any person engaged in the recovery of certain minerals to acquire fee simple title to prac-

[57] *E.g.*, the Gulf of Mexico shipping-petroleum disputes settled by mutual agreement, *see* text accompanying note 3 *supra*.

[58] For an historical treatment of this development *see generally* B. HIBBARD, A HISTORY OF THE PUBLIC LAND POLICIES (1969).

[59] 30 U.S.C. §§ 21-54 (1970).

tically any tract of federal land on which those minerals are found.[60] When timber resources subsequently commanded interest, Congress again responded by establishing the national forest system in 1897.[61] The statute provided that, within areas designated as national forests, timber production and water resources development were to be the chief land uses.[62] However, in case of conflict, timber production remained subordinate to mineral recovery, since mine operators retained the right to acquire title to land for mining operations, even within the confines of the national forest system;[63] the use recognized earlier took priority over the later one. The process repeated itself in 1934 when the Taylor Grazing Act[64] authorized the use of federal land for the purpose of grazing livestock. Beneficiaries of that legislation can acquire only the rights of a licensee,[65] thus subordinating grazing to mineral recovery. Finally, the National Wilderness Preservation Act[66] enacted in 1964, which set aside certain tracts of land as wilderness areas, provides that even those areas remain subject to entry for mineral operations until 1983.[67] In case of conflict, the later use, wilderness, is of lower priority than mineral production. Thus, the General Mining Law, which recognized mining as a legitimate use of public property, has served for a century to maintain mineral recovery as the dominant use of federal land.

The public land experience would indicate that past legislative response to use pressures on public tracts has produced an elaborate system of priorities favoring those uses recognized longest. Priorities once created have exhibited an ability to remain operative in spite of the subsequent enactment of legislation recognizing other uses. The special interests protected often become so powerful that to change legislative priorities when realignment is needed becomes exceedingly difficult. It would be hard today to justify the favored position which mining occupies relative to other uses of federal property, in light of the demand

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[60] *Id.* § 22.
[61] Act of June 4, 1897, 30 Stat. 35.
[62] *Id.*
[63] 30 U.S.C. § 22 (1970).
[64] 43 U.S.C. § 315 *et seq.* (1970).
[65] *Id.* § 315.
[66] 16 U.S.C.A. §§ 1131-36 (Supp. 1973).
[67] *Id.* at § 1133(d)(3).

for recreational opportunities and the apparent timber shortage, yet mining retains its dominant position. Public land administrators consequently have a reduced flexibility to meet present and future land use pressures because legislative priorities created one hundred years ago still affect allocation decisions. Accommodations among conflicting uses cannot be made entirely in light of present conditions, but reflect the influence of earlier needs and values.

There are obvious parallels between the public land legislative pattern and the present continental shelf situation. By virtue of the Outer Continental Shelf Lands Act, a mineral lease may be obtained on practically any portion of the continental shelf.[68] Assuming, for example, that sea farming becomes technologically and economically attractive within ten years, what will be the legislative response to private pressure to license use of the seabottom for that activity? Because of the relative economic benefits to be gained from mineral production, the result might well be a statute authorizing use of the seabottom for aquaculture only in areas not otherwise valuable for mineral resources. Use priorities will have been established which may affect allocation decisions from that point onward, resulting in some of the same rigidity which now characterizes public land regulation.

For the continental shelf, the surest way to avoid the problems created by a dominant use policy is to avoid the pattern of legislatively responding to each particular private activity as it becomes feasible. A preferable alternative would be the initial adoption of a comprehensive continental shelf use policy based on a principle of equal priority for all recognized uses. That course seems to be the safest response to the reality that use priorities eventually become outdated and, when they have been created by statute, may not be readily reordered. An equal priority policy could assure that, in case of conflicts, allocation decisions can be based on factors operative at the time instead of being influenced by earlier legislative dictates which may no longer be appropriate to existing conditions. The adoption of a comprehensive continental shelf use policy at a time when private use pressures remain relatively low would not, of course, be a typical legislative response to the problem. The legislative process is normally trig-

[68] 43 U.S.C. § 1331 (1970).

gered by pressures generated by a problem in need of immediate treatment, and the continental shelf situation does not necessarily fall into that category. Yet, precisely because that happens to be the case, the time is ripe for considered legislative initiative directed toward establishing a continental shelf use policy which contains the capability to respond adequately to future use pressures.

(2) *The Inadequacy of Present Regulatory Procedures in Light of Expected Continental Shelf Use Pressures.*

Largely because federal policy has concentrated almost exclusively on encouraging the recovery of continental shelf mineral resources, a comprehensive regulatory procedure has been created only for that particular use. Development of an equally comprehensive regulatory mechanism for other activities has, for all practical purposes, been neglected. However, use conditions of the shelf have changed considerably since the 1953 passage of the Outer Continental Shelf Lands Act with its mineral lease provisions. Already the region is being used by many coastal metropolitan areas as a convenient waste disposal area and several organizations have attempted to construct hotels and gambling casinos on the shelf.[69] Undoubtedly non-mineral uses will continue to increase and diversify, creating the necessity for providing protection for investments and a regulatory mechanism to oversee the public interest. Currently for all non-mineral activities, except ocean dumping, both of those functions are being fulfilled by the navigable water permit procedure of the United States Army Corps of Engineers.[70] The task has fallen to the agency more by default than by design, and it is questionable whether the permit procedure is capable of adequately handling future use pressures.

The Corps' regulatory authority over navigable waters of the United States stems from the 1899 Rivers and Harbors Act[71] and has been extended to include the waters over the continental shelf by the Outer Continental Shelf Lands Act.[72] The Corps has promulgated standards providing that:

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[69] For an account of one such thwarted effort *see* United States v. Ray, 423 F.2d 16 (5th Cir. 1970).

[70] *See* note 20 *supra.*

[71] 33 U.S.C. §§ 401-13 (1970).

[72] 43 U.S.C. § 1333(f) (1970).

> The decision as to whether a permit [to erect a structure on the continental shelf] will be issued must rest on an evaluation of all relevant factors, including the effect of the proposed work on navigation, fish and wildlife, conservation, pollution, aesthetics, ecology, and the general public interest.[73]

One of the fundamental difficulties involved with continued use of the Corps-issued permit is the question of its exact legal status, and the situation is more complex than the statutes would indicate. On the face of the Outer Continental Shelf Lands Act, the Corps of Engineers has authority only to prevent obstructions to navigation by regulating the safety and location of structures erected on the continental shelf.[74] In practice, however, the permit is being used in a much broader context. For example, on those occasions when private organizations have attempted to make use of the continental shelf without first obtaining a permit,[75] the United States has threatened or sought injunctive relief to prohibit the actions on dual grounds: that a permit is a condition precedent for erecting structures on the shelf and that failure to obtain a permit is an indication that the action is not authorized by the United States.[76] Thus the permit itself is also being used as a type of authority granting device. The Corps of Engineers seems to be determining not only whether structures needed for particular activities constitute a danger to navigation and the marine environment, but also the much broader question of whether the activity itself should or should not be allowed. The agency is consequently making basic use policy decisions.

The situation has, of course, arisen because the only official authorization obtainable for non-mineral uses of the continental shelf is the permit itself, and both the Geneva Shelf Convention and the Outer Continental Shelf Lands Act contemplate that any private use of the continental shelf should be authorized by the affected government.[77] Presumably then, one desiring to use the

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[73] U.S. ARMY CORPS OF ENGINEERS, *supra* note 53.

[74] 43 U.S.C. § 1333(a)(1) (1970).

[75] *See, e.g.*, United States v. Ray, 423 F.2d 16 (5th Cir. 1970). The case is discussed in Comment, 6 SAN DIEGO L. REV. 487 (1969).

[76] United States v. Ray, 423 F.2d 16 (5th Cir. 1970).

[77] Article 2 of the Convention provides that no state or entity may utilize any portion of a coastal state's continental shelf without that state's "express consent." Geneva Shelf Convention art. 2. The Outer Continental Shelf Lands Act declares that the portion of shelf appertaining to the United States is subject to its jurisdiction and control, the implication being that all activities on the shelf are subject to regulation. 43 U.S.C. § 1332(a) (1970).

continental shelf for any purpose would be required to obtain the necessary consent or authorization of the United States and, in fact, that position has been taken to prohibit private activities which the federal government has viewed as inimical to its interests.[78] The question becomes whether obtaining a Corps of Engineers permit is equivalent to obtaining the permission of the United States to use the continental shelf for a particular purpose.

Nothing clearly points to the conclusion that obtaining a Corps permit is legally synonymous with a grant of authority from the government to pursue a particular activity. First of all, the authority of the Corps of Engineers over the continental shelf is confined specifically to regulation of navigation hazards under the Outer Continental Shelf Lands Act,[79] and the act's legislative history fails to indicate whether Congress even considered the legal status of the permit. The Rivers and Harbors Act[80] provides no additional guidance. The permit itself evidently confers no vested right or privilege of occupation as against another prospective user of the shelf; rather, its intended function seems to be solely to insure that any structure erected on the continental shelf is not a navigational hazard and will not unreasonably disrupt the environment. Thus whether the permit carries governmental permission to use the continental shelf or whether it is merely an administrative determination of fact that the proposed use is not a navigation or environmental hazard is most unclear.

The very uncertainty of the situation imports some undesirable ramifications. The prime motives behind the initial adoption of a regulatory statute for the outer continental shelf were to protect private investment in offshore ventures and to provide a framework for their regulation,[81] yet those objectives are certainly not being met with regard to non-mineral uses. From the point of view of private enterprise, to base the legality of a large operation, with its concomitant investment, solely on a Corps permit would be unwise. From the perspective of the government, to rely on the permit procedure in its present form to police all private uses

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[78] United States v. Ray, 423 F.2d 16 (5th Cir. 1970).

[79] 43 U.S.C. § 1333(f) (1970). Zabel v. Tabb, 430 F.2d 199 (5th Cir. 1970), has interpreted the Corps' authority under the 1899 Rivers and Harbors Act to include the power to consider both navigational and environmental considerations in its permit decisions. Presumably, this decision would apply to outer continental shelf activities as well.

[80] 33 U.S.C. §§ 401-13 (1970).

[81] W. BISHOP, *supra* note 23, at 8, 13.

of the continental shelf seems equally fraught with difficulties. Initially, the statutory authority for granting or denying permits is limited to navigational and environmental considerations, a framework seemingly too narrow to handle the varied problems that private uses might create. Secondly, a single procedure for the regulation of all private activities most probably will prove to be inadequate. Specialized regulatory mechanisms may be needed for various uses because of their particular characteristics, as has proved necessary for the administration of the public lands.[82] Finally, and of highest importance from the standpoint of the public interest, continued reliance on the Corps permit procedure means lack of direct public control over basic continental shelf use policy. Clearly, the formulation of use policy should be a legislative responsibility. However, that function is now vested, for most non-mineral uses, in an administrative agency operating with essentially no congressional guidelines.

Although these difficulties are serious enough, another significant issue is involved with use of the Corps of Engineers as the regulatory body of continental shelf activities. That lies in the obvious reality that the Corps, while exercising authority over various aspects of the civilian use of navigable waters, is primarily a defense agency.[83] This dual allegiance has in some instances already corrupted the agency's normal permit granting operations. Perhaps the most conspicuous example involved the leasing of some offshore tracts for oil production in the Santa Barbara Channel. When the Department of the Interior made the decision to lease the particular area in 1968, it consulted, according to normal procedure, the Department of Defense to ascertain whether civilian use of any of the proposed lease sites conflicted with national security considerations. With regard to certain tracts the Department of Defense argued against leasing because the areas lay beneath a missile test range and any accident might subject the government to legal liability. The Defense Department suggested that if the particular tracts were leased at all, hold harmless clauses should be placed in each lease to release

[82] For example, the numerous federal agencies such as the Forest Service, the Bureau of Land Management, and the National Park Service, each with its own regulatory procedures, which have been established to oversee the various uses of federal land.

[83] In addition to its numerous civilian functions, the Corps of Engineers is the military's chief construction agency.

the United States from liability in case of a missile accident. The Department of Interior refused the advice and leased the tracts without the suggested provision. Thereupon, the Defense Department announced it would have the clause inserted in the Corps of Engineers permit which all lessees were required to obtain before oil drilling platforms could be erected on the continental shelf.[84]

The significance of the particular incident is that extraneous considerations may directly affect the Corps' permit procedure and thereby influence the only administrative mechanism now in existence for regulating most non-mineral uses of the continental shelf. The wisdom of continuing to utilize one agency serving both military and civilian purposes which may be diametrically opposed is subject to serious question. Perhaps the most significant drawback associated with a continuation of the policy is its possible detrimental effect on the formulation and execution of a consistent civilian use policy for the continental shelf. As a preferable alternative, a single administrative agency, perhaps the Interior Department or a newly created Department of Natural Resources, should be given the authority to regulate non-military aspects of continental shelf activities in order to end the almost total reliance on the Corps of Engineers permit procedure.

This rather cursory examination should demonstrate that the current continental shelf regulatory system will have to be modified and expanded to accommodate increased use pressures. New legislation appears necessary both to establish a comprehensive use policy and to provide a regulatory framework for safeguarding the public interest and resolving use conflicts as they arise. The remainder of this discussion will concentrate on how the multiple use concept as a basis for a comprehensive continental shelf program could serve to accomplish those objectives.

The Application of the Multiple Use Concept to the Outer Continental Shelf

As noted earlier, the multiple use concept offers several obvious advantages as the basis for continental shelf legislative

[84] For a detailed discussion of this particular incident *see* 1 PLLRC STUDY 259.

policy. Perhaps the primary benefit accruing from its adoption would be the establishment of an overall use policy for the outer continental shelf. The very task of formulating that policy forces the legislative body to take a long-range view of the management problems likely to arise and to attempt to anticipate possible solutions. In addition to raising the salient issue of which particular use categories should or should not be authorized for the continental shelf, the interrelationships and conflicts which will be created are brought out as well, thus forcing simultaneous consideration of how the conflicting sanctioned activities should be accommodated in order to maximize benefits from the region. Such examination is significant, satisfactory resolution of these problems is critical to the successful management of any publicly owned or controlled region. While these issues must be considered as a matter of course in the adoption of a multiple use policy, they may be largely overlooked if use demands are dealt with on a first come—first serve basis.

Additionally, the statutory recognition of use categories inherent in the multiple use concept may serve to make private enterprise feel much more secure in undertaking offshore ventures. Risk capital which might not otherwise be invested there could be attracted to continental shelf activities with a resulting stimulation of private development efforts. Furthermore, the recognition of specific use categories will provide a better basis for regulating those activities than now exists under the Outer Continental Shelf Lands Act. Regulatory procedures tailored to the characteristics and needs of each category can be established ending reliance on the unsatisfactory permit procedure of the Corps of Engineers. To the extent that the achievement of these objectives can be aided by the multiple use concept, the original goals of the Outer Continental Shelf Lands Act and the Truman Proclamation, encouragement of private investment and the creation of a jurisdictional framework for the regulation of private activities will at the same time be realized.

These advantages make the multiple use concept a promising foundation for a new federal continental shelf policy. Before a specific legislative proposal can be made, however, two preliminary issues must be resolved. The multiple use approach presumes the explicit statutory recognition of all activities which will be

sanctioned as legitimate uses of the affected region. Consequently, identification of the use categories to be authorized for the continental shelf is a necessary prerequisite to the drafting of a multiple use statute. Additionally, an overall continental shelf management policy should be established to guide allocation decisions.

For the first issue, identification of the use categories, experts who have investigated the probable future use patterns of the continental shelf generally divide those activities into six categories.[85] The consensus seems to be that the continental shelf will be valuable for living resources, non-living resources, transportation, waste disposal, recreation, and uses requiring preservation of the natural marine environment. The following is a brief synopsis of the characteristics of each use category, its relative importance, and possible conflicts it may have with other activities.

Living resources: Commercial fishing and aquaculture, or sea farming, are the major activities included in this category. Since United States coastal waters have an estimated annual sustained yield of three billion pounds of fish, or ten times the present production,[86] commercial fishing will continue to rank as one of the most important uses of the continental shelf. A major concern of the fishing industry is use by the petroleum industry of what previously have been exclusively fishing grounds. For that reason, conflicts have long existed between oil producers and the shrimp industry in the Gulf of Mexico.[87] Since both fishing and mineral extraction are of vital national importance, their operation in the same area with minimal conflict will continue to be a necessary objective of federal continental shelf policy. The other primary living resource activity likely to be conducted on the shelf is aquaculture. While of small importance today, sea farming may be of considerable future significance because of its potential ability to increase domestic food production. Aquaculture's chief advantage lies in the fact that it reduces reliance on an uncertain common property resource by allowing the fish farmer to have full control over his resource, thus facilitating application of the best technical and management principles. Aquaculture may

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[85] *See generally* 1 PLLRC STUDY.
[86] *Id.* at 352, 370.
[87] *Id.* at 370.

require leasing or licensing of the seabottom in certain areas and the adoption of safeguards to prevent damaging interference from other uses. Oysters, for example, are quite susceptible to pollution, thus conflicts may exist between aquaculture, waste disposal, and mineral extraction.

Non-living Resources: This grouping includes all other natural resources found on the seabed or subsoil of the continental shelf and not encompassed by the living resources category. The designation "non-living" is perhaps a more useful classification than the present narrower category, "mineral resources," found in the Outer Continental Shelf Lands Act.[88] While recovery of minerals such as oil, gas, sulphur, sand, and gravel are currently of great importance, and while submarine mining may be of significance in the future, non-mineral resources are also likely to be developed. Geothermal resources, production of fresh water, and generation of electric power from offshore locations are all possible continental shelf activities.[89] The inclusion of all these activities in one use classification can provide both comprehensiveness as well as a logical distinction from the living resources category. Mineral production in general, and petroleum extraction in particular, is now the most important continental shelf use from the economic standpoint, and, if projections prove accurate, the non-living resources category will continue to be the area of heaviest public and private continental shelf investment.[90]

Transportation: Surface and submarine transportation activities in the waters covering the continental shelf will continue to be of major importance. As mentioned previously,[91] the hazard to navigation created in the Gulf of Mexico has already necessitated voluntary agreement between the shipping and petroleum industries regarding priority in certain areas of high traffic density. While the frequency of ship collisions with continental shelf structures is not expected to increase, ships are increasing in size and the consequences of collisions which do occur will be increasingly serious. Additional problems will be generated when commercial submarine vessels are developed. The end result may be

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[88] 43 U.S.C. §§ 1331, 1333 (1970).

[89] An off-shore nuclear power plant to be located off New Jersey is currently in the planning stage.

[90] 1 PLLRC STUDY 385.

[91] *See* text accompanying note 3 *supra.*

the necessity for formal establishment of commercial shipping lanes[92] for both surface and submarine vessels, with restrictions on use of the seabed in designated areas. Another problem falling logically into the transportation classification is the increasing use of submarine pipelines, and regulation of the location of these structures may eventually prove desirable.[93] In general, transportation activities conflict with the spatial demands of other activities, and a formal means of accommodation should be provided.

Waste Disposal: Many coastal metropolitan areas already find the continental shelf a convenient dumping ground for their solid and liquid waste products, and dredge spoils are frequently deposited on the seabed. The problems involved with widespread continuation of this activity are obvious. Ocean currents can carry wastes back to shore, the seabottom and water surrounding the dumping site may be rendered useless for other activities, and potential damage to the marine environment is severe. The consequences of unregulated waste disposal could thus be especially damaging, even beyond the immediate disposal zone. On the other hand, some uses of solid waste products have proved beneficial; for example, dumping old cars off the New Jersey coast has increased the fish harvest by providing shelter. Though waste disposal may be a legitimate use of the continental shelf, it must be closely regulated because of obvious dangers to other activities and the marine environment.[94] A comprehensive continental shelf management regime must take cognizance of that reality.

Recreation: Activities such as boating, sport fishing, and scuba diving are of increasing popularity with the American

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[92] Because of traffic density this proved necessary on the Great Lakes. The Lake Carriers Association established up-bound and down-bound lanes in 1911. Out of this voluntary agreement have grown fact-finding boards which attribute fault to vessels operating outside their lanes without justification, and courts have alluded to this factor in collision suits. For a full discussion see Griffin, *Accommodation of Conflicting Uses of Ocean Space with Special Reference to Navigation Safety Lanes*, in PROCEEDINGS OF 2D ANNUAL CONFERENCE OF THE LAW OF THE SEA INSTITUTE (L. Alexander ed. 1968).

[93] Provision for pipeline rights-of-way on the surface of the continental shelf is made at 43 U.S.C. § 1334(c) (1970). However, no mechanism has been established to resolve spatial conflicts with other uses should they arise.

[94] *See* note 20 *supra* for a discussion of new legislative initiatives in handling this problem.

people. Underwater recreational areas and parks may eventually be desirable along certain segments of the coastline, and some provision should be made to protect areas which become of value to these activities. The recreation category is probably the most speculative of the group, in terms of expected need, and the amount of area required will probably remain small.[95] Nevertheless, the need is plausible enough that protection of valuable undersea recreational resources should be a recognized aspect of federal continental shelf management policy.

Preservationist Uses: This classification includes all uses of the continental shelf which require no significant disturbance of the immediate marine environment by other conflicting activities. As the Geneva Convention on the Outer Continental Shelf has recognized, the seabed will continue to be a target of major research efforts as man becomes increasingly aware of the potential value of the continental shelf.[96] Legitimate scientific research activities therefore should be protected from disturbance and may require the limitation of other uses of the area for periods of time. Additionally, certain areas of the continental shelf may be of unique ecological or aesthetic value. For example, the erection of drilling platforms adjacent to a coastal area of great natural beauty might be particularly undesirable. An administrative mechanism is needed which can regulate or prohibit activities in such areas in order to retain their value for non-economic purposes.

These use classifications should provide a framework sufficiently comprehensive to encompass present and future civilian continental shelf activities. Their legislative recognition as legitimate uses could create an adequate jurisdictional basis for regulation and further emphasize the continuation of a federal policy of encouragement of private investment in the development of the continental shelf.

The second major issue in need of settlement must be the formalization of explicit management goals which will serve as legislative standards governing allocation decisions. As indicated previously,[97] the multiple use concept facilitates the use of eco-

[95] 1 PLLRC STUDY 594.
[96] Geneva Shelf Convention art. 5(1).
[97] *See* text accompanying note 10 *supra.*

nomic tools in arriving at allocation decisions and therefore serves to make that decision-making process more objective. However, economics and economic tools cannot of themselves be a substitute for the exercise of informed administrative judgment in making the allocation decision. Choices between use of a particular area of a national forest for logging or wilderness and choices between use of a portion of the continental shelf for waste disposal or scientific purposes are ultimately value judgments. Economic analysis can be only of limited assistance in these types of allocation decisions because the benefits from each use involve intangibles which are difficult to reduce to a common quantitative basis. Economic analysis in multiple use management thus can only determine how best to achieve an economic objective, or to determine the benefits lost from achieving a non-economic goal at the expense of an economic one.

The goals themselves, for example, maintenance of a region's economic stability, must be established first, and the responsibility for their formulation should devolve onto the legislative body. Fundamentally, the goals are political judgments as to what central policy objective should be pursued in the management of the resources of a particular region; ideally the policies should represent a societal judgment as to the values of the various possible uses of the area and reflect a consensus on the relative weight to be given the economic, political, and intangible values associated with each use. Thus a legislative policy for the management and use of a region and its resources should first be established, whether it be the promotion of maximum economic development or the generation of economic benefits without unreasonable environmental disruption. Allocation decisions can then be made on the basis of finding use combinations which best fulfill the policy objective which has been established. To declare that a national forest or the continental shelf be managed for multiple use without an accompanying legislative statement of resource management goals would mean that no policy exists to guide allocation decisions. In such a situation the multiple use concept may still facilitate an objective analysis of the consequences of various use combinations. However, allocation decisions themselves will be entirely a matter of administration

discretion; the consequence may be a resource use policy not adequately reflecting the overall public interest.[98]

Accordingly, establishment of a legislative allocation policy is of critical importance, and consideration should be given both to the direction of continental shelf development likely to produce the greatest benefit and to the interests, public and private, which must be accommodated in the region. Some guidance as to how these factors might be dealt with can be found in an already existing trend in public land natural resources management. A growing population accustomed to a continuing rise in living standards is generating a spiraling increase in demand for raw materials that translates directly into pressures for ever-greater quantities of timber, minerals, and power. To the extent that these substances are supplied from publicly owned lands, their production places a great strain on the ability of the land to accommodate simultaneously the conflicting spatial demands created by the recovery or generation of each particular commodity. At the same time, as society has become more affluent and as leisure time has increased, the same public land which supplies material resources is becoming increasingly valuable for its natural beauty and as a place for recreation.

As the national desire for undeveloped land and recreational areas has coalesced into a formidable political force, increased pressure has been placed on the federal government to sub-

[98] This is a significant shortcoming of existing public land multiple use legislation. Congress has not established definitive management objectives and allocation policies. The Multiple Use-Sustained Yield Forestry Act, 16 U.S.C.A. §§ 528-31 (1960) (1973 Supp.), and the Classification and Multiple Use Act, 43 U.S.C. §§ 1611-18 (1970), are prime examples. The former directs that affected land be managed "in the combination [of uses] which will meet the needs of the American people." 16 U.S.C.A. § 531(a). However, the phrase is defined only in the sense that the correct use pattern is not necessarily the combination of uses which will produce the greatest dollar return or the greatest unit output. *Id.* Thus, the Forest Service and the Department of the Interior have been directed only to manage for multiple use; they have no standards as to what the "needs of the American People" really are. Allocation decisions reflect what the agencies themselves feel those needs to be, raising the danger that the national consensus on what objectives are important in public land management is not being reflected in administrative action. For a full discussion see Whaley, *Multiple Use Decision Making—Where Do We Go From Here,* 10 NATURAL RESOURCES J. 557 (1970). For other criticisms of multiple use management *see* H. KAUFMAN, THE FOREST RANGER, A STUDY IN ADMINISTRATIVE BEHAVIOR (1960); Hall, *The Myth and Reality of Multiple Use Forestry,* 3 NATURAL RESOURCES J. 276 (1963); Reich, *The Public and the Nation's Forests,* 50 CALIF. L. REV. 381 (1962).

stantially alter its public land resource allocation priorities. However, meeting the need for "non-economic" land uses only increases the burden on remaining land to satisfy progressively greater material resource requirements. A safety valve to alleviate the pressures being generated by the development would therefore be desirable. The federal government, in the Truman Proclamation[99] and the Outer Continental Shelf Lands Act,[100] long ago set the stage for one possible solution—use of the continental shelf to the maximum possible extent as a source of raw materials. Since the region has no human constituency, its utilization for that purpose would be much less objectionable, both politically and environmentally, than would be a similar policy for public lands. The formal encouragement of the philosophy, by its adoption as the primary management policy for the continental shelf is, then, an interesting possibility. A suggested policy might be: maximization of the economic benefits from the continental shelf to the extent achievement of that goal does not unjustifiably interfere with any authorized use of the region or with the marine environment.[101] That would, of course, be a logical extension of present federal continental shelf policy which formally seeks to promote the recovery of mineral resources by private enterprise. However, seeking to maximize the economic benefits from all activities is necessarily a more comprehensive objective, reflecting the additional uses which will be made of the continental shelf and the region's primary dedication to economic uses.

Inclusion of this suggested policy in continental shelf multiple use legislation would, of course, act as a legislative standard governing all allocation decisions. In that role, the policy would dictate that where no use conflicts occur, each separate activity, such as mineral extraction, fishing, and transportation, be managed to produce maximum economic benefits. In case of conflicts between activities, a use pattern which maximizes the benefits from the conflicting activities as a group would be

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[99] Proclamation, *supra* note 24.

[100] 43 U.S.C. §§ 1331-43 (1970).

[101] The basis of the unjustifiable standard is art. 5(1) of the Geneva Shelf Convention which provides that the exploitation of the natural resources of the continental shelf must produce no "unjustifiable interference" with navigation, fishing, or the conservation of living marine resources. For a discussion of use of the justifiability standard in resolving navigation conflicts see Griffin, *supra* note 92.

favored. For example, in a high-use density area such as the Gulf of Mexico, oil production and submarine mining would probably be preferred over fishing and aquaculture because of the greater economic benefits resulting from the former activities. However, no basis would exist for permitting oil recovery in a manner which would completely disrupt fishing operations, since that would constitute an unjustifiable interference with another authorized use of the continental shelf. In each case, the proper accommodation among conflicting uses would be a matter for administrative determination, based on the justifiability standard. Finally, uses producing economic benefits would be favored over non-economic uses, but again, only to the extent justifiable. For example, no justification would exist for allowing the depositing of waste in an area of ecological or scientific value or for the erection of an oil drilling platform in an area adjacent to a coastline of unique natural beauty.

A Proposed Multiple Use Statute

With these fundamental considerations established, a proposed continental shelf multiple use statute is set out below. In format, the statute is an amalgam of the Outer Continental Shelf Lands Act,[102] the Multiple Use-Sustained Yield Forestry Act,[103] and the Classification and Multiple Use Act.[104] The definitions of multiple use and sustained yield have been patterned after the latter acts, the most significant difference being in the proposed definition of multiple use. In contrast to that term's meaning in the forestry act as the "combination [of uses] that will best meet the needs of the American people . . . ,"[105] the proposed continental shelf statute suggests a more definite standard—management to generate maximum economic benefits. The definition of living resources utilizes essentially the same phraseology as the Geneva Convention on the Outer Continental Shelf.[106] Transportation activities have been defined in the broadest sense; the United States, while having no authority to regulate shipping in the international waters above the continental shelf, may nevertheless

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[102] 43 U.S.C. §§ 1331-43 (1970).
[103] 16 U.S.C.A. §§ 528-31 (Supp. 1973).
[104] 43 U.S.C. §§ 1611-18 (1970).
[105] 16 U.S.C.A. § 531(a) (Supp. 1973).
[106] Geneva Shelf Convention art. 2(4).

need the ability to restrict other uses of the seabed which could affect ocean commerce.

The proposed statute is by no means an inclusive legislative arrangement for all continental shelf activities,[107] as the Outer Continental Shelf Lands Act is a comprehensive statute for the development and regulation of offshore mineral production. No attempt has been made to suggest actual licensing, leasing, or permit procedures for every continental shelf activity enumerated in the multiple use statute, and, as has proved to be the case with public land management, probably no one common procedure will be adaptable for all possible continental shelf uses. A lease arrangement has proved workable for mineral operations and might be useful as well for activities such as aquaculture. However, a permit or licensing system might be better suited for the regulation of waste disposal, and rights of way might eventually be needed for pipeline, undersea cables, and transmission lines. Thus, separate procedures will have to be provided for different use categories, and additional legislation, along the lines of the provisions of the present continental shelf legislation governing mineral leasing, will be required for each use category. Despite its skeletal nature, however, the suggested statute does lay down the basic core of the multiple use concept. Enumeration of specific use categories and the direction that they be managed for multiple use necessarily implies additional legislation for the comprehensive regulation of each activity and contemplates that regulatory responsibility will be largely vested in a single administrative agency. The exact divisions of responsibility between that agency and the Army Corp of Engineers will, of course, have to be established, although a logical division would be to limit the Corps' authority specifically to navigational considerations.

As another point worth discussion, but not apparent from the proposed statute itself, both the Multiple Use Sustained Yield Forestry Act[108] and the Classification and Multiple Use Act[109] contemplate, in effect, the zoning of affected land by the appropriate administrative agency. All land is classified according to

[107] For example, no attempt has been made to fashion a mechanism for adequate public input into the administrative decision-making process.
[108] 16 U.S.C.A. §§ 528-31 (Supp. 1973).
[109] 43 U.S.C. §§ 1411-18 (1970).

its best possible use and is then administered for that particular purpose.[110] For the public land, such comprehensive classification has proved necessary because of the great use pressures on the land and, as a result, the agencies administering the land have had to resort to procedures somewhat analogous to planning and zoning activities. However, use pressures of the level characteristic of public land will probably never exist for the continental shelf, with the possible exception of heavily used areas near port cities. Consequently, the need to classify the entire continental shelf into particular use regions may never be necessary. Instead, as private groups or public agencies seek permission to use a specific portion of the continental shelf, such as for scientific purposes, denial of permits or leases for conflicting activities in the same area will provide an entirely adequate method of regulation. With these explanatory comments in mind, the multiple use statute itself might take the following form:

An Act for the Multiple Use of the Outer Continental Shelf

Section 1: Definitions

(a) "Outer continental shelf" means all submerged lands lying seaward and outside of the area of land beneath navigable waters, as defined in section 22 of the Submerged Lands Act, and of which the subsoil and seabed appertain to the United States and are subject to its jurisdiction and control;[111]

(b) "Secretary" means the Secretary of the Interior;[112]

(c) "Living resources" means natural resources consisting of living organisms belonging to sedentary species, which, at the

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[110] For a comprehensive analysis of the classification procedures of the Department of the Interior, *see generally* Comment, *The Conservationist and the Public Lands: Administrative and Judicial Remedies Relating to the Use and Disposition of the Public Lands Administered by the Department of the Interior*, 68 MICH. L. REV. 1200 (1970).

[111] Use of this definition would make the jurisdiction of the proposed act the same as the present Outer Continental Shelf Lands Act. Should the outer boundaries of the shelf be more definitively settled by international agreement, ratification by the United States would accordingly redefine the jurisdiction of the proposed statute.

[112] At present, the Department of the Interior is the logical choice to administer the outer continental shelf. The agency currently has jurisdiction over oil and gas production and President Nixon, in his energy message of April 18, 1973, proposed legislation authorizing the Department of the Interior to license deep water supertanker ports beyond the three mile limit. Further, recent legislation introduced in Congress would authorize hard rock mining of the deep ocean floor and also would place regulatory authority over that activity in the Department of the Interior.

harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the outer continental shelf;
(d) "Non-living resources" means all other natural resources other than living resources found on or under the seabed of the outer continental shelf;
(e) "Preservation use" means the retention of a particular area of the outer continental shelf in its natural state because of the area's scientific, aesthetic, or ecological value;
(f) "Transportation use" means any use of the outer continental shelf or its subsoil required for the transporting of any cargo, material, or form of energy by vessel, pipeline, cable, or other device;
(g) "Waste disposal" means the intentional discarding of any solid, liquid, or gaseous substance onto the seabed of the outer continental shelf;
(h) "Sustained yield" means the achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the outer continental shelf;
Section 2: Jurisdiction Over the Outer Continental Shelf
(a) It is hereby declared to be the policy of the United States that the subsoil and seabed of the outer continental shelf appertain to the United States and are subject to its jurisdiction, control, and power of disposition as provided in this Act;
Section 3: The Multiple Use of the Outer Continental Shelf
(a) The outer continental shelf shall be managed and developed for living and non-living resources, transportation, waste disposal, recreation, and preservation uses.
(b) The Secretary is authorized and directed to manage all uses of the outer continental shelf in a combination which will maximize their economic benefit to the nation, to the extent achievement of that objective does not unjustifiably interfere with any authorized use of the outer continental shelf or with the marine environment. Coordinated management, with due consideration being given to the relative values of each authorized use, shall be conducted over areas large enough to provide sufficient latitude for adjustment in use to conform to changing needs and conditions, recognizing that some portions of the outer continental shelf will be managed for less than all purposes,

but with no authorized use having priority over the entire outer continental shelf.

(c) The Secretary is further authorized and directed to administer the outer continental shelf, where possible, for the sustained yield of the several products and services obtained therefrom.

Section 4: Authority of the Secretary of the Army Over Outer Continental Shelf Activities

The authority of the Secretary of the Army over activities on the outer continental shelf is specifically limited to preventing obstructions to navigation and the disposal of dredged materials.[113]

Section 5: Rules and Regulations: Cooperation with State Agencies

The Secretary shall administer the provisions of this act, unless otherwise provided, and shall prescribe such rules and regulations as may be necessary to carry out such provisions. The Secretary may at any time prescribe and amend such rules and regulations as he determines to be necessary and proper in order to provide for the prevention of waste, conservation of natural resources, protection of the marine environment, and the protection of correlative rights in the outer continental shelf; and notwithstanding any other provisions of this act, such rules and regulations shall apply to all outer continental shelf activities conducted under the authority of this act. In the enforcement of conservation laws, rules, and regulations, the Secretary is authorized to cooperate with the conservation agencies of the adjacent states.[114]

Some Additional Considerations

(1) *Constraints on the Scope of Federal Continental Shelf Policy*

Some possible limiting factors must be considered in any discussion of federal continental shelf policy. The most obvious constraint is the principle of freedom of the seas. It has acted as a restriction on claims of sovereignty over the continental

[113] This provision is consistent with Section 103(a) of the Marine Protection, Research, and Sanctuaries Act of 1972, P.L. 92-532, which restricts Corps of Engineers authority over ocean dumping to dredged material.

[114] *E.g.*, 43 U.S.C. § 1334(a)(1) (1970).

shelf and has resulted in the Geneva Shelf Convention's creation of the concept of "sovereign rights."[115] Some observers have indicated that the fact that the United States has only "sovereign rights" and not full sovereignty over the continental shelf constitutes a serious limitation on its ability to enact a comprehensive legislative policy for the region.[116] This poses the issue of whether lack of full sovereignty will significantly hinder any resource management system Congress might choose to adopt. The only area where this seems to be a problem is with hard rock mining, since it would not be possible to have the same kind of entry laws for the continental shelf that govern public land mining operations. The mining industry itself has been quick to point out that, with the heavy investment required for normal mining operations, let alone continental shelf ventures, companies would be reluctant to enter into undersea mining without the type of protection afforded them by the General Mining Law.[117] Consequently, the government's policy of promoting private investment in continental shelf activities might be hindered unless the mining industry is granted rights of entry and patent deeds to the portions of the seabed it wishes to mine.

The argument needs to be placed in its proper perspective. To begin with, the Mineral Leasing Act,[118] which also applies to public land mining operations, confers no right of entry but provides only for exclusive, long-term leases. To argue that because no right of entry is conferred by the leasing act the mining industry has been reluctant to undertake the recovery of leasing act minerals is, of course, unrealistic. The mere fact that the mining industry has not always been able to acquire actual ownership of the land it wishes to mine has been of little hindrance to the exploitation of public land mineral resources. The same should hold true for the continental shelf, and the fact that the United States has only "sovereign rights" to the area should not restrict the government's ability to adopt and administer a comprehensive use program. The crux of the problem

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115 Geneva Shelf Convention art. 2(1).

116 *See* Barry, *The Administration of the Outer Continental Shelf Lands Act*, 1 NATURAL RESOURCES LAW, 38 (1968).

117 30 U.S.C. §§ 21-54 (1970). For a discussion, *see* 1 PLLRC STUDY 605.

118 30 U.S.C. §§ 351 *et seq.* (1970).

for the mining industry lies in the competitive bidding system[119] for mineral leases currently in use under the Outer Continental Shelf Lands Act.[120] Competitive bidding for leases has worked relatively well for the petroleum industry because oil exploration can be conducted in comparative secrecy. However, the system is not well suited to the mining industry, since companies which have not conducted their own exploratory studies could easily determine by observation which tracts are promising and gain an unfair bidding advantage. The solution to the specific problems raised by the mining industry is, of course, modification of the present competitive bidding system for continental shelf mineral leases to a procedure akin to the exclusive leasing arrangement of the Mineral Leasing Act.[121]

Another possible constraint which has received some attention is the somewhat limited scope of the Geneva Shelf Convention. Under its terms a coastal state has "sovereign rights" over its adjacent continental shelf only for the purpose of exploration and exploitation of natural resources.[122] This raises the question whether the Convention's reference to activities related only to the recovery of natural resources is meant to prohibit all other uses, or whether the agreement is merely silent on the point of non-resource activities. The question becomes pertinent when the United States seeks, for example, to prohibit recovery of natural resources in a particular area for ecological reasons. The legislative history of the Convention seems to support the position that the agreement takes no position on non-resource uses of the continental shelf.[123] When questions were raised in the context of discussions concerning the Convention's effect on military uses of the shelf, the signatories felt that the Convention was neither authority for such activities nor a prohibition of them.[124] This would indicate that non-resource activities are outside the scope of the Geneva Shelf Convention and therefore are acceptable when they do not otherwise conflict with international law.

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[119] *See* 1 PLLRC STUDY 605.
[120] 43 U.S.C. §§ 1331-43 (1970).
[121] 30 U.S.C. §§ 351 *et seq.* (1970).
[122] Geneva Shelf Convention art. 2(1).
[123] For a detailed discussion of this point, see E. KATIN, *supra* note 35, at 121-25; 1 PLLRC STUDY 17.
[124] E. KATIN, *supra* note 35, at 125.

Hence, within the term "sovereign rights," sufficient latitude apparently exists to facilitate the execution of any policy the United States might wish to adopt, and no significant legal obstacles appear to lie in the way of adoption of a federal policy more comprehensive than the present Outer Continental Shelf Lands Act.

(2) *The Military Versus Peaceful Use Dilemma*

One of the most difficult problems looming over federal continental shelf policy, the conflict between military and peaceful activities, has been deliberately omitted from the discussion thus far in order to focus on the issues associated with the administration of peaceful uses. However, the problem must not be minimized. Regardless of the future course of United States continental shelf policy, the military-peaceful use dilemma will exist. It probably will remain as the most irreconciliable conflict with which administrators will have to cope, and is a difficulty no regime, multiple use or other, will easily be able to resolve. Indeed, the conflict may be ultimately unsolvable. The problem, from whatever perspective it is viewed, is extremely complex and elicits no obvious solution.

It should be manifest that the same technological revolution which promises to place the resources of the sea within man's grasp is playing an equally significant role in global military strategy. World War II clearly established the vulnerability of a surface navy to superior air power and heralded the beginning of a trend toward the submarine vessel as the ultimate instrument of naval warfare. Since the impregnability of land based missiles is now in doubt, the submarine also represents virtually the only "safe" missile deterrent in this age of nuclear weaponry. Thus the continental shelf will remain a first line of national defense and become increasingly important as a factor in military strategy. When conflicts do occur between peaceful and military uses, the warning flag of national security may be raised and invoked on the side of the military use, sometimes arbitrarily, sometimes with merit. The result can only be increased difficulty for orderly administration of the continental shelf as peaceful use pressures intensify. However, the reality that the conflict may be irreconcilable in no way lessens the need for separate, overall coordination of peaceful use policy. Inaction on that front will neither

resolve the issue of military use, nor alleviate the growing problems associated with the administration of peaceful activities.

As to the military-peaceful use conflict itself, Congress has made an attempt at a solution by imposing limits on the amount of seabed the Department of Defense may withdraw for military purposes without prior congressional authorization.[125] The limitation does not, of course, reach the fundamental conflict itself; the military retains the authority unilaterally to withdraw portions of the continental shelf for its own purposes, regardless of the value of peaceful uses. Realistically, perhaps no method can be established to resolve the problem on a formal basis. For the near future, probably the best that can be done is to continue to follow the present procedure of informal settlement of differences by an interagency consultative process.[126]

Conclusion

Numerous difficulties emerge when present federal continental shelf policy is measured against the demands likely to be placed on the region in years ahead. A dominant use policy with its arbitrary priorities, an unhealthy reliance on a defense-oriented agency for regulation of civilian activities, the absence of a comprehensive legislative use policy, and inadequate protection of private investment are among the most glaring deficiencies in the operation of the Outer Continental Shelf Lands Act. These problems are as yet not severe because continental shelf use pressures remain low. However, the government's stated policy of encouraging private investment in continental shelf activities combined with the region's obvious attractiveness as a reservoir of a wide variety of natural resources must inevitably heighten interest. For that reason, a more comprehensive legislative policy will eventually be needed. The multiple use concept, premised on the absence of use priorities, centralized administrative control, and the adoption of an overall legislative use policy, appears well suited as a basic framework. The proposed statute reflects the concept's fundamental principles and attempts to demonstrate its application to some of the specific problems of continental shelf management.

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[125] The Engle Act, 72 Stat. 27 (1968).
[126] This procedure is discussed in 1 PLLRC STUDY 259.