MARICULTURE: A NEW OCEAN USE*

*J. Owens Smith***
David L. Marshall ***

I. INTRODUCTION

The utility of a discussion of legal principles affecting various rights in territorial waters and the high seas off Georgia's coast is based on the presumption that future food requirements of the United States and the world will provide the impetus necessary to surmount political, engineering and biological impediments that may exist to use of these areas for mariculture, the artificial culture of marine organisms.

The possibility that United States mariculture entrepreneurs will encounter limiting international legal rules and political policies is proportional to the distance their facilities are located from their home shores and to the proximity of such structures to the surface of the sea. This is because the extent of a coastal nation's sovereignty diminishes seaward and the greatest potential for conflict with traditional ocean users exists on or near the surface.

Definitions of mariculture vary according to the intensity of human effort and capital required. Practices range from an extensive level, illustrated by the transplantation of organisms such as clams and oysters to improved habitats, to more intensive methods, illustrated by raft culture of shellfish and culture of free swimming fish in various physical enclosures which are floated or suspended near the water surface.

In addition to biological requirements inherent in a given enterprise, a culturist must have appropriate legal control of his growing site. One authority asserts that where the traditional view is that the sea, its shores and resources are common property, as in the United States, mariculture is effectively thwarted.[1] Another report has dismissed serious consideration of "open-ocean" mariculture upon the assumption, based on

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**Marine Resources Law Associate, Marine Resources Program and Institute of Government, University of Georgia. BSF, University of Georgia, 1959, J.D., University of South Carolina School of Law, 1971; Member of the South Carolina Bar.

***B.A. Princeton, 1971; J.D. University of Georgia School of Law, 1974.

[1]SKIDAWAY INSTITUTE OF OCEANOGRAPHY, UTILIZATION OF THE SALT-MARSH ESTUARIES OF GEORGIA 76-78 (1971).

constraining international factors, that such use of the high seas will be stymied by the state of the international law of the sea at least for the next fifty years.[2] Mariculture is seen as less likely to develop in coastal or ocean waters in some locations due to other competitive uses of these sites.[3] The writers do not fully agree with the conclusive tone of these predictions and will discuss the international legal framework within which mariculture and other similar new uses must develop.

Mariculture represents a new ocean[4] use differing from recognized uses.[5] It requires exclusive use[6] of ocean space, a financial investment, and legal protection for that investment. The security of any financial investment in the use of the sea for mariculture depends upon the legal status of such activity.

Mariculture activities are legally distinguishable from existing practices in ocean areas. As discussed below, mariculture would use the ocean in a different manner than current practices of fishing,[7] naviga-

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[2]R. LANDIS, MARICULTURE: A TECHNOLOGY ASSESSMENT METHODOLOGY xi (1971).

[3]G. TRIMBLE, LEGAL AND ADMINISTRATIVE ASPECTS OF AN AQUACULTURE POLICY FOR HAWAII iii (1972).

[4]*See* Submerged Lands Act, 43 U.S.C. § 1301(b), (c) (1970). "Ocean areas" are defined for the purposes of this report as the tidal waters and submerged land seaward of the coast line of the respective states of the United States. The term "coast line" means the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters.

[5]*See* Convention on the Territorial Sea and the Contiguous Zone, *done* April 29, 1958 [1964] 2 U.S.T. 1607, T.I.A.S. No. 5639, 516 U.N.T.S. 206 [hereinafter cited as Convention on the Territorial Sea]; Convention on the High Seas, *done* April 29, 1958, [1962] 2 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82 [hereinafter cited as Convention on the High Seas]. The Convention on the High Seas recognizes four uses of the oceans: navigation, fishing, laying submarine cables, and overflight. The right to conduct scientific exploration is also impliedly recognized. However, the listing of expressly recognized uses does not preclude recognition of other uses which are recognized by the general principles of international law. *See generally* van Panhuys & van Emde Boas, *Legal Aspects of Pirate Broadcasting*, 60 A.J.I.L. 303 (1966).

[6]M. MCDOUGAL & W. BURKE, THE PUBLIC ORDER OF THE OCEANS 1-2 (1962). McDougal and Burke distinguish the concepts of exclusive and inclusive use:

> By an exclusive claim is meant a claim to use or authority over an area or over specified activities which other states cannot share with the claimant state. By such a claim, the claimant state commonly asserts a competence to prescribe and/or to apply its authority to all persons in an area or engaged in certain specified activities, irrespective of the nationality of the person.
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> By an inclusive claim is meant a claim to use or authority over an area or over specified activities which the claimant state can, by some accommodation to avoid physical interference in use share with another. By such a claim, the claimant state commonly asserts a competence to prescribe and apply its authority only to its own nationals, concedes a comparable authority with respect to the area or activities to other states with respect to their nationals, and demands that other states reciprocally refrain from the exercise of authority over its nationals and their activities in the area.

Id. at n.1.

[7]*See* T. KANE, AQUACULTURE AND THE LAW 60-66 (1970).

tion,[8] and mineral exploration and exploitation.[9] These practices are internationally recognized ocean uses and have a two-fold relationship with mariculture: they represent potential conflicts and exemplify expansion of coastal state jurisdiction over the oceans. Before mariculture activities or other new practices can be conducted as a matter of right, they must be reconciled with the existing uses.

The primary focus of this paper will be the State of Georgia and its ability to authorize mariculture; however, most observations are also applicable to other states. If differences are present, those differences will be specifically noted. In this context, three sets of potential competitors exist: foreign governments claiming internationally recognized rights;[10] United States citizens and officials claiming federal and international rights;[11] and Georgia residents and officials claiming state, federal or international rights.[12] State legislation, which purports to affect any of these interests, must consider all three sets of claimants.

Alternative methods exist by which a mariculture practice may become recognized under international law.[13] The primary method would

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[8]*See* G. GILMORE & C. BLACK, THE LAW OF ADMIRALTY 30 (1957); van Panhuys & van Emde Boas, *supra* note 5, at 320. The terms navigation and shipping refer to the movement of vessels in ocean waters. This definition recognizes the basic distinctions between a mariculture enterprise and a vessel. Whereas the latter are movable, so that their nationality cannot be made dependent on their location, a mariculture enterprise will be relatively less mobile and most of them stationary.

[9]*See* p. 324 *infra*.

[10]*See* Convention on the Territorial Sea; Convention on the High Seas; Convention on Fishing and Conservation of the Living Resources of the High Seas, *done* April 29, 1958 [1966] 2 U.S.T. 138, T.I.A.S. No. 5969, 559 U.N.T.S. 285 [hereinafter cited as Convention on Fishing and Conservation].

[11]*See* p. 313 *infra*.

[12]*See* p. 315 *infra*. A conflict may also arise under Section 91-129 of the Georgia Code, concerning developments resulting in the pollution of water.

[13]*See* van Panhuys & van Emde Boas, *supra* note 5, at 313-320. McDougal and Burke find three elements present in resolving conflicts in ocean areas: the process of interaction by which the oceans are enjoyed, the process of claim by which interests are asserted, and the process of authoritative decision by which interests are honored and protected. M. MCDOUGAL & W. BURKE, *supra* note 6, at 12-14. Rather than relying upon fixed concepts of existing law, McDougal and Burke feel that a balancing process more closely approximates the method by which any use is recognized or disputed. Their balancing test considers the inclusiveness or exclusiveness of use demanded, the degree of comprehensiveness of authority asserted, and the geographical areas in which such use and authority are demanded. *Id.* at 12. This approach provides valuable insight into the possibility for international acceptance of a "new" use. However, it does not deal expressly with the development and/or recognition of a "new" use.

Three distinct views exist upon the question of how a "new" use becomes recognized by the general principles of international law. Briefly stated, these views are: that every use of the ocean is permissible unless it runs counter to a specific principle of international law; that any "new" use is permissible if it does not unjustifiably conflict with already recognized uses and if the practice has a recognized analogy in existence; and that only uses are permissible as have found some express recognition in international law. Van Panhuys & van Emde Boas, *supra* note 5, at 313-

be legislation enacted by the Georgia legislature.[14] However, questions exist regarding the authority of the United States and the State of Georgia to license or prohibit mariculture activities at various locations. In ocean waters, the legal authority of the coastal state diminishes as the activity moves farther seaward from the coastline.[15] To analyze the authority of the coastal state, five separate ocean areas will be considered: (1) the territorial waters between the coastal baseline and a line three miles seaward, (2) the contiguous zone which is that area between three and twelve miles from the baseline, (3) the high seas beyond twelve miles, (4) the submerged lands under the territorial sea and (5) the continental shelf. Authority of the United States and the State of Georgia is most complete in territorial waters and the lands covered thereby.[16] Competing international claims are minimal in this region. However, on the continental shelf lands and on the high seas, the United States and the State of Georgia would license mariculture activities subject to competing international rights.

A second method would be recognition of mariculture under customary international law principles. Customary international law refers to a body of rules followed by states under the conviction that they are obligatory.[17] Private parties may initiate the development of new principles of customary international law without the enactment of positive

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315. Because no one view adequately summarizes all previous examples, the text will consider all three views.

However, in arguing for the legal acceptance of a superport facility, Professor Knight cogently points out that "many of the initial moves toward new legal regimes were accomplished by initiation of a customary rule of international law." HERSHMAN, KNIGHT & MOELLER, *Legal Aspects of a Superport Off Louisiana's Coast*, in LOUISIANA SUPERPORT STUDIES, 93-99 (1972) [hereinafter cited as HERSHMAN].

[14]*See* FLA. STAT. ANN. §§ 253.67-253.75 (Supp. 1969).

[15]Professors McDougal and Burke summarize the position of the coastal state:

> . . . It is apparent, from the perspective of a disinterested observer, that the sea areas adjacent to a coastal state do reflect a relatively greater degree of concentration of interest—demands plus supporting expectations about the conditions under which such demands can be achieved—in the coastal state than in any other state. Among the interests so concentrated may be observed the more significant and thoroughly accepted demands for power: control over access to territorial bases of power, defensive measures, regulation of activities and maintenance of order in adjacent waters, enforcement of criminal law; for wealth: exclusive control over disposition of resources, protection of internal wealth-producing processes; for well-being: resource control, inspection procedures, quarantine, pollution controls; and for enlightenment: scientific investigation and research.

M. MCDOUGAL & W. BURKE, *supra* note 6 at 9-10.

[16]*See* van Panhuys & van Emde Boas, *supra* note 5. The coastal state may be faced with a problem of denying unwanted users off its coast line. Minor differences exist in the coastal states' claim of legal authority. However, the general jurisdictional questions are similar.

[17]L. OPPENHEIM, INTERNATIONAL LAW 26 (8th ed. H. Lauterpacht 1955).

legislation.[18] As discussed below,[19] an individual may unilaterally act to establish a mariculture activity. However, this activity will remain subject to possible regulation by the coastal state or in conflict with foreign interests.[20] The following are some of the relevant considerations affecting the establishment of mariculture or other new ocean uses.

II. LEGAL REGIME GOVERNING OCEAN USES

Because legal rules applicable to the conduct of mariculture activities in the oceans depend upon the location of the activity, this discussion will focus on the legal regimes in the various locations.

Modern national and international law differentiates ocean areas into five distinct legal zones: (1) territorial sea, (2) contiguous zone, (3) high seas, (4) submerged land and (5) continental shelf. National laws differ on their definitions of these zones.[21] However, this inquiry focuses primarily upon the United States and, in particular, upon the Georgia coast.[22] The United States, in its treaties[23] and in executive pronounce-

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[18]*See generally* Knight, *Shipping Safety Fairways: Conflict Amelioration in the Gulf of Mexico*, 1 J. MARITIME LAW & COM. 1 (1969). Oil companies began drilling in coastal waters prior to 1940. They independently initiated a "new" use of ocean space, which use has subsequently been recognized in an Executive Order and in a multilateral treaty. Convention on the Continental Shelf, art. 5(a)-(3), *done* April 29, 1958, [1964] 1 U.S.T. 471, T.I.A.S. No. 5578, 499 U.N.T.S. 312 [hereinafter cited as Convention on the Continental Shelf]; Truman Proclamation, Pres. Proc. No. 2667, 3 C.F.R. 67 (comp. 1943-48), 13 DEP'T STATE BULL. 485 (1945).

[19]*See* p. 334 *infra*.

[20]*See* European Agreement for the Prevention of Broadcasts Transmitted from Stations Outside National Territories, *effective* Oct. 19, 1967, van Panhuys & van Emde Boas, *supra* note 5, at 316-37; Note, *Regina v. Kent Justices*, 9 HARV. INT'L L.J. 317 (1968).

[21]*See* Alexander, *Indices of National Interest in the Oceans*, 1 OCEAN DEVELOPMENT & INT'L L.J. 21, 43-47 (1973). The latest State Department tabulation shows 32% of coastal states claiming territorial waters of three miles, 56% claiming four to twelve miles, and 12% claiming in excess of twelve miles.

[22]The relative legal claims of the coastal state can, to a limited degree, be catalogued according to geographic limits. However, several qualifications must be noted to this practice. Professors McDougal and Burke comment:

> Such terms as "internal waters," "territorial sea," "contiguous zones," and "high seas" make both a vague factual reference to varying proximity to coasts and to varying concentrations of the interests of the coastal and noncoastal states, and a highly technical, legalistic reference to certain consequences in the allocation of authority between states which are assumed to inhere in a designation of specified waters as being appropriately subsumed under a particular label. The factual reference is vague both because there are many different authoritative modes of measurement and measures for fixing geographical location and because what is important for policy, in choosing between modes of measurement and measures, is not simple, dead-weight proximity but the differing degrees of concentration of coastal and non-coastal interests which vary only roughly with distance from the shore. The technical, legal reference is vague because so few words cannot adequately describe all the variables and policies which in fact affect decision or indicate the variety of alternatives open in most contexts to a decision-maker. For want of better words, we will, however, continue to use the traditional terms to make

ments,[24] has established that its territorial sea extends from the low-water mark[25] on the coastline seaward for a distance of three geographical miles.[26] The contiguous zone extends nine miles seaward from the outer limit of the territorial sea.[27] The high seas means all parts of the ocean that are not included in the territorial sea or in the internal waters.[28] The submerged land, as that term is used in the Submerged Lands Act, off the Georgia coast extends seaward for three geographical miles.[29] The continental shelf[30] encompasses the seabed and subsoil of

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a rough geographical reference and will trust to context to make our exact meaning clear.

M. MCDOUGAL & W. BURKE, *supra* note 6, at 3, n.7.

[23]Convention with Great Britain for Prevention of Smuggling of Intoxicating Liquors, January 23, 1924, 43 Stat. 1761 (1924), T.S. No. 685.

[24]Statement by Arthur Dean, Chairman United States Delegation, Conference of the Law of the Sea, Mar. 11, 1958, 38 DEP'T STATE BULL. 574, 576-80 (1958). *See also* statement by Robert J. McCloskey, N.Y. Times, Apr. 10, 1970, at 13 col. 3. "The United States does not recognize any exercise of coastal state jurisdiction over vessels in the high seas and thus does not recognize the right of any state unilaterally to establish a territorial sea of more than 3 miles or exercise more limited jurisdiction in any area beyond 12 miles."

[25]Convention on the Territorial Sea, arts. 3,4 and 7. *See* Griffin, *The Emerging Law of Ocean Space*, 1 INT'L LAWYER 548, 555-57 (1967). "The normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State. Elsewhere the baseline is a straight line across rivers, estuaries, or the mouth of bays or rivers or a system of straight lines between 'appropriate points' along a coast deeply fringed with islands." *Id.* at 555. Neither the Submerged Land Act nor the Territorial Sea Convention defines "low water." In *U.S. v. California*, the Supreme Court interpreted the "low water" line to conform to the low water line marked on the official United States coastal charts prepared by the United States Coast and Geodetic Survey. 381 U.S. 139, 176 (1965). "On the Atlantic coast the tide is of the semi-daily type and so the nautical charts shows water depths from the mean of all the low tides as 'mean low water.'" Griffin, *supra* at 557.

[26]Alexander, *supra* note 21, at 43; Note, *International Fisheries Regulation* 3 GA. J. INT'L & COMP. L. 387, 394 (1973). At the 1971 meeting of the United Nations Seabed Committee, the United States Government submitted a proposal which would have provided for a twelve mile maximum breadth of the territorial sea, "free" passage through international straits and a system of preferential fishing rights for coastal states. U.N. Doc. A/Ac. 138/SC. II/L.3 (1971). As Professor Knight notes, this proposal recognizes that the twelve mile limit is emerging as a rule of customary law regarding the breadth of the territorial sea. HERSHMAN, *supra* note 13, at 90-91.

[27]Convention on the Territorial Sea, art. 24(2).

[28]Convention on the High Seas, art. 1.

[29]Submerged Lands Act, 43 U.S.C. §§ 1301-43 (1970); GA. CODE ANN. § 15-101 (1971); *See* RESTATEMENT (SECOND) OF FOREIGN RELATIONS LAW § 41 (1965). *But see* U.S. v. Louisiana, 363 U.S. 1, 30-36 (1960). State jurisdiction over the submerged land area extends from the low water line to a line three geographical miles distant from the coast line of each state and to the boundary line of each state where in any case, such boundary as it existed at the time such state became a member of the union, or as approved by Congress extends beyond three geographical miles. Submerged Lands Act, 43 U.S.C. § 1312 (1970). However, the Submerged Lands Act did not convey to the states jurisdiction over navigable water. The United States retained all its navigational rights and powers of regulation over navigable waters, which rights are paramount to the rights assigned to the states. *Id.* § 1314. Therefore, by anchoring its facility to submerged lands and thereby creating a potential hazard to navigation in the surface waters, a mariculture enterprise will come within both federal and state jurisdictions.

the submarine areas adjacent to the coast, but outside the area of the territorial sea to a depth of 200 meters or beyond that limit where the depth of the superjacent waters admits of exploitation[31] of the natural resources[32] of such area. This definition, found in the Convention on the Continental Shelf, does not make express reference to any specific geological definition of the continental shelf. The continental shelf also includes the seabed and subsoil of similar submarine areas adjacent to the coast of islands.[33] While an activity may involve more than one zone, each zone will be considered separately in this analysis.

The question will be raised whether the construction of a mariculture facility is consistent with the rights appertaining[34] to the coastal state either through international agreements or under customary international law and, if such rights exist, the extent to which the coastal state would be able to exercise regulatory jurisdiction over activities conducted therein.[35]

A. Territorial Sea

1. Federal Authority

International conventions provide that the sovereignty[36] of the

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[30]Convention on the Continental Shelf, art. 1. *See also* Knight, *The Draft United Nations Conventions on the International Seabed Area: Background, Description and Some Preliminary Thought*, 8 SAN DIEGO L. REV. 459, 463-72 (1971). In his article, Professor Knight documents the relationship between physical and legal definitions of the continental shelf. Because this paper focuses on maritime uses only marginally connected to the continental shelf, it will rely on a jurisdictional rather than a physical definition of the continental shelf.

[31]Stang, *Wet Land: The Unavailable Resource of the Outer Continental Shelf*, 2 J.L. & ECON. DEVELOPMENT 153, 186 (1967). The Army Corps of Engineers has asserted that the Cortes Bank (110 miles off the California coast) is part of the Outer Continental Shelf, although this requires assumption of jurisdiction over an undersea area beyond the 200 meter isobath. This extension of jurisdiction conforms with the treaty provision that includes areas which admit of exploitation of natural resources. Convention on the Continental Shelf, art. 1.

[32]Convention on the Continental Shelf, art. 2. The Convention defines natural resources to include mineral and other nonliving resources of the seabed and subsoil together with living organisms belonging to sedentary species. A species is sedentary if at the harvestable stage, organisms are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or subsoil. *Id.* § 2(4).

[33]Convention on the Continental Shelf, art. 1. The Georgia statute defining the boundaries of the state includes all islands within 20 marine leagues of the seacoast. GA. CODE ANN. § 15-101 (1971).

[34]Truman Proclamation, Pres. Proc. No. 2667, 3 C.F.R. 67 (comp. 1943-48), 13 DEP'T STATE BULL. 485 (1945) [hereinafter cited as Truman Proclamation]. The term "appertaining" was chosen because it had not been previously associated with maritime law. The term denotes coastal state jurisdiction which does not include sovereignty.

[35]HERSHMAN, *supra* note 13, at 88.

[36]Van Panhuys & van Emde Boas, *supra* note 5, at 315-316. The concept of sovereignty implies a totality of competences of a state. These competences are not susceptible of an exhaustive

United States extends over the belt of territorial sea adjacent to its coast,[37] over the air space above the territorial sea, and over the seabed and subsoil beneath the territorial sea.[38] Federal law makes it unlawful for any vessel, except a vessel of the United States, to engage in fishing within the territorial waters of the United States.[39] The Fisheries Zone Act of 1966 extended United States jurisdiction over fishing to a distance of twelve nautical miles from the low-water line along the coast.[40] The United States now exercises the same exclusive rights with respect to fisheries in the contiguous zone as in the territorial sea, subject to traditional foreign fishing practices as are recognized by the United States.[41] Both acts authorize the Secretary of State, with the concurrence of the Secretaries of the Treasury and of the Interior, to permit foreign vessels to fish within United States territorial waters and/or within the restricted fisheries zone.[42]

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enumeration. Nor can they be identified with the concept of "territoriality." As van Panhuys and van Emde Boas express their concept of sovereignty:

> [T]his plentitude of competences is confined, it is true, within limits laid down by international law, but at the same time it is one which cannot be exhaustively dissected into a definite number of component elements. Hence it is only possible to describe a few of its *aspects*. Three of such aspects should be mentioned here, as possibly relevant to the case under consideration:
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> (a) The first aspect or element is a state's power to perform acts of authority over persons.
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> (b) A second aspect is the state's power of disposal over its territory, either legally, *e.g.*, by abandoning its territory or transferring it to another state, or factually, namely, by changing the condition of its territory, such as the reclaiming of bays or lakes or the digging of tunnels.
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> (c) Thirdly, a state's right to defend or protect itself should be mentioned.

Id. at 316.

[37]Convention on the Territorial Sea, art. 1(1).

[38]*Id.* art. 2; C. COLOMBOS, THE INTERNATIONAL LAW OF THE SEA 91 (6th ed. 1967). The concept of sovereignty over the territorial sea must be modified to encompass the competing right of innocent passage and the prohibition against charging tolls. Columbos contends that:

> [T]he modern view (of sovereignty over territorial waters) appears rather to rest on the basis of a right of jurisdiction or qualified sovereignty. Such a conception of sovereignty may not be so extended as to allow exclusive rights of use as in the case of ownership since the application of any absolute proprietary rights over the territorial sea might inevitably lead to unacceptable consequences. The claims of a State with a seaboard should therefore be limited to the exercise of such rights of sovereignty as are necessary to ensure its security and defense and the protection of interests in its territorial waters, without excluding the peaceful navigation of foreign vessels through these waters.

Id.

[39]Prohibition of Foreign Fishing Vessels in the Territorial Waters of the United States, 16 U.S.C. §§ 1081-86 (1970).

[40]Fisheries Zone Act, 16 U.S.C. §§ 1091-94 (1970). "The fisheries zone has as its inner boundary the outer limits of the territorial sea and as its seaward boundary a line drawn so that each point on the line is nine nautical miles from the nearest point in the inner boundary." *Id.* § 1092.

[41]*Id.* § 1091.

[42]*Id.* § 1091, 1093; Prohibition of Foreign Fishing Vessels in the Territorial Waters of the United

2. Federal-State Authority

(a) Federal Authority

Under international law and the United States Constitution, the federal government possesses paramount authority over all waters within the territorial sea.[43] Article I of the United States Constitution provides that the Congress shall have the power to regulate commerce with foreign nations and among the several states.[44] The commerce clause confers upon Congress the power to regulate navigation and related conduct within United States waters.[45] Under the Rivers and Harbors Act of 1899,[46] the Secretary of the Army, acting upon the recommendation of the Chief of Engineers, must authorize the creation of any obstruction to navigation.[47] The federal commerce clause power extends beyond navigation. In *United States v. Appalachian Electric Power Company*,[48] the Supreme Court held that Congressional authority over navigable waters is as broad as the needs of commerce.[49] Under the Federal Water Pollution Control Act Amendments of 1972, the federal government has asserted jurisdiction over the territorial seas for purposes of pollution abatement.[50]

(b) State Authority

Subject to the federal authority over navigation and commerce, the states have concurrent jurisdiction over waters in the territorial sea. Prior to 1948, the states exercised limited jurisdiction over territorial waters.[51] In 1948, the Supreme Court ruled that "the Federal Government rather than the state has paramount rights in and power over that (three-mile marginal) belt, an incident to which is full dominion over the resources of the soil under that water area, including oil."[52] The Supreme Court agreed with the federal government's arguments that the

States, 16 U.S.C. § 1081 (1970).

[43]T. KANE, *supra* note 7, at 33-35; *cf.* United States v. Rands, 389 U.S. 121 (1967).

[44]U.S. CONST. art. I, § 8.

[45]Gibbons v. Ogden, 22 U.S. (9 Wheat.) 1 (1824).

[46]Rivers and Harbors Act, 33 U.S.C. § 403 *et seq.* (1970).

[47]*Id.* § 403. *See also* Fish and Wildlife Coordination Act, 16 U.S.C. § 662(a) (1970). The Fish and Wildlife Coordination Act requires the Corps of Engineers to consult in each instance with the Fish and Wildlife Service of the Department of the Interior before issuing a permit.

[48]311 U.S. 377 (1940).

[49]*Id.* at 426-27.

[50]Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. § 1251 *et seq.* (Supp. II, 1972); *amending* 33 U.S.C. § 1161 (1970); *see* Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C. § 1401, 86 Stat. 1052 (Supp. II, 1972).

[51]C. LEAVELL, LEGAL ASPECTS OF OWNERSHIP AND USE OF ESTUARINE AREAS IN GEORGIA AND SOUTH CAROLINA 24 (1971).

[52]United States v. California, 332 U.S. 19, 38-39 (1947).

three-mile rule was an incident of national sovereignty, that conduct in the three-mile zone was a subject of international concern, and that "insofar as the nation asserts its rights under international law, whatever of value may be discovered in the seas next to its shores and within its protective belt, will most naturally be appropriated for its use."[53] Congress later altered this rule by enacting the Submerged Lands Act of 1953.[54] The Act is discussed more completely with respect to the Continental Shelf.[55] The Submerged Lands Act, in effect, quitclaimed the federal claim to ownership to submerged lands under the territorial sea:

> (1) The United States releases and relinquishes unto said States and persons aforesaid, except as otherwise reserved herein, all right, title, and interest of the United States, if any it has, in and to all said lands, improvements, and natural resources; (2) the United States releases and relinquishes all claims of the United States, if any it has, for money or damages arising out of any operations of said States or persons pursuant to State authority upon or within said lands and navigable waters.[56]

Nevertheless, a question remains with respect to the extent the Submerged Lands Act recognized state jurisdiction over the waters in the territorial sea.[57] The Submerged Lands Act does not diminish federal control of the territorial waters for the purposes of navigation, flood control, or the production of water power.[58] As noted above, it expressly

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[53]*Id.* at 35.

[54]Submerged Lands Act, 43 U.S.C. § 1301 *et seq.* (1970).

[55]*See* p. 336 *infra*.

[56]Submerged Lands Act, 43 U.S.C. § 1311(b) (1970).

[57]*See generally* LEAVELL, *supra* note 51, at 24. *But see* HERSHMAN, *supra* note 13, at 89. In the Louisiana Superport Studies, the authors conclude that "there are no significant state-federal legal problems in this area since pursuant to the Submerged Lands Act coastal states in the United States were granted title to the submerged lands lying within three miles of the coastline." *Id.* However, the Submerged Lands Act only conveyed federal right, title and interest in "lands, improvements and natural resources." Submerged Lands Act, 43 U.S.C. § 1311(b) (1970). The Act dealt only with the then existing state claims. Future state claims, whether for a superport or a mariculture activity, are not expressly included within the conveyance of right, title and interest. Because mariculture does not involve exploitation of existing natural resources and requires use of the water column, the potential for intergovernmental conflict exists.

[58]Submerged Lands Act, 43 U.S.C. § 1311(d) (1970); United States v. Rands, 389 U.S. 121, 127 (1967). The Submerged Lands Act, 43 U.S.C. § 1314(a) (1970) provides:

> The United States retains all its navigational servitude and rights in and powers of regulation and control of said lands and navigable waters for the constitutional purposes of commerce, navigation, national defense, and international affairs, all of of which shall be paramount to, but shall not be deemed to include, proprietary rights of ownership, or the rights of management, administration, leasing, use, and development of the lands and natural resources which are specifically recognized, confirmed, established, and rested in and assigned to the respective states. . . .

recognizes state ownership of natural resources.[59] The term "natural resources" in this context includes oil, gas, and all other minerals, and fish, shrimp, oysters, clams, lobsters, sponges, kelp, and other marine animal and plant life. It does not include water power, or the use of water for the production of power.[60] The broad language in the grant of authority implies that Congress intended for the states to have a proprietary right for other non-excluded purposes as far as the state's boundary extends.[61] However, Congress did not expressly include federal regulation of fisheries by this grant. In ruling upon the application of state law in the high seas pursuant to the Outer Continental Shelf Lands Act,[62] the Fifth Circuit commented that the "Continental Shelf Act was enacted for the purpose, primarily of asserting ownership of and jurisdiction over the minerals in and under the Continental Shelf."[63] Commentators have analogized this treatment to the Submerged Lands Act.[64] However, the definition of natural resources apparently encompasses more than merely mineral resources.[65]

(c) Limitations on State Authority

State governments control the territorial waters subject to powers exercised under the Constitution and federal statutes. Since Congress has occupied only a limited portion of the field of marine regulation, the authority of the states to protect their interests by additional legislation is not impaired.[66] However, state statutes may not unjustifiably hinder interstate commerce.[67] In *Pike v. Bruce Church*,[68] the Supreme

[59]Submerged Lands Act, 43 U.S.C. § 1311(b)(1) (1970).

[60]*Id.* § 1301(e).

[61]LEAVELL, *supra* note 51, at 24-25; *see* T. KANE, *supra* note 7, at 34-35. Kane suggests that the Submerged Lands Act of 1953 granted the states exclusive authority over fishing within the state boundaries, in the absence of conflicting congressional legislation. He cites *Corsa v. Texas* for the proposition that regulation of the coastal fisheries is within the police power of the individual states. Corsa v. Texas, 149 F. Supp. 771 (D. Md. 1957), *aff'd*, 355 U.S. 37 (1958).

[62]Outer Continental Shelf Lands Act, 43 U.S.C. §§ 1331-43 (1970).

[63]Guess v. Read, 290 F.2d 622 (5th Cir. 1961). In *Guess*, the court was asked to construe the Louisiana Direct Action Statute. The court found the legislative intent to be that an action could be maintained against an insurer if the accident occurred in a parish of Louisiana. The court held that the Outer Continental Shelf Lands Act did not extend state law into the high seas for purposes unrelated to mineral exploitation.

[64]*See* Stang, *supra* note 31, at 165-66.

[65]Submerged Lands Act, 43 U.S.C. § 1301(e) (1970).

[66]Askew v. American Waterways Operations, Inc., 411 U.S. 325 (1973); Skiriotes v. Florida, 313 U.S. 69, 75 (1940); Mintz v. Baldwin, 289 U.S. 346, 350 (1932); Reid v. Colorado, 187 U.S. 137, 147-50 (1902).

[67]Bibb v. Navajo Freight Lines, Inc., 359 U.S. 520 (1959); Southern Pacific Co. v. Arizona, 325 U.S. 761 (1945); Seaboard Airline R. Co. v. Blackwell, 244 U.S. 310, 316 (1917). *But see* South Carolina State Highway Dept. v. Barnwell Bros., 303 U.S. 177 (1938). A general test was stated by Justice Stone in *Southern Pacific Co. v. Arizona*, *supra*. The commerce clause leaves "to the

Court used the following test in evaluating a state enactment:

> Where the statute regulates evenhandedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.[69]

State statutes may not conflict with federal legislation or regulations.[70] However, Congress has not enacted preemptive legislation regulating state fisheries in territorial waters.[71] In *Askew v. The American Waterways Operators, Inc.*,[72] the Supreme Court dealt with the issue of whether a Florida statute conflicted with the Water Quality Improvement Act of 1970.[73] Applying a test similar to the one outlined in *Pike*, the Court found no collision between the federal and state legislation.[74] Florida had a recognizable and distinct interest in its own clean-up costs after an oil spill.[75] Read broadly, this case indicates a willingness on the part of the Supreme Court to construe federal and state legislation so as to minimize potential conflicts.

States have the recognized ability to control their citizens in the exploitation of fisheries in ocean waters.[76] Regulation of the coastal fisheries is within the police power of the individual states. In *Skiriotes v. Florida*,[77] the Supreme Court held that Florida could govern the conduct

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states wide scope for regulation of matters of local concern, even though it in some measure affects the commerce, provided it does not materially restrict the free flow of commerce across state lines, or interfere with it in matters with respect to which uniformity of regulations is of predominant national concern." *Id.* at 770. This test does not define what are material restrictions; rather this resolution is left for case by case analysis.

[68]397 U.S. 137 (1970).

[69]*Id.* at 142.

[70]U.S. CONST. art. VI.

[71]*See* T. KANE, *supra* note 7, at 34-35; *cf.* Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. §§ 1251(b), 1253, 1319, 1328 (Supp. II, 1972), *amending* 33 U.S.C. 1161 (1970); Marine Protection, Research, and Santuaries Act of 1972, 33 U.S.C. §§ 1402 (c), 1402 (f), 1412(a), 1441, and 1442 (Supp. II, 1972); Coastal Zone Management Act of 1972, §§ 303, 306(c), 306(e), Pub. L. 92-583, 86 Stat. 1280. In the recent statutes, Congress has expressly recognized interest in the preservation and conduct of coastal fisheries. Pursuant to this national interest, Congress has undertaken to regulate the conduct of private persons and state governments. If state governments desire to receive federal grants, they must enact a plan that adequately considers regional and national requirements. Coastal Zone Management Act of 1972, §§ 306(c), 306(e), Pub. L. 92-583, 86 Stat. 1280. However, Congress has not expressly regulated fisheries.

[72]411 U.S. 325 (1973). This case is discussed at 4 GA. J. INT'L & COMP. L. 216 (1974).

[73]Water Quality Improvement Act of 1970, 33 U.S.C. § 1161 *et seq.* (1970).

[74]411 U.S. at 336.

[75]*Id.*

[76]Skiriotes v. Florida, 313 U.S. 69, 75-77 (1941); Manchester v. Massachusetts, 139 U.S. 240, 266 (1891).

[77]313 U.S. at 69.

of one of its citizens in his activities upon the high seas[78] with respect to matters in which the state had a legitimate interest.[79] This holding recognized the control that a state may exercise over its citizens and boats licensed in that state.[80]

The extent of state control and jurisdiction over fisheries in the territorial sea remains unsettled. Conflict over this question has arisen in the context of a state's right to exclude aliens and residents of other states.[81] The power to exclude has been based upon the theories of ownership and conservation. In *McCready v. Virginia*,[82] the Supreme Court said that "the States own the tide-waters, and the fish in them, so far as they are capable of ownership while running."[83] However, the decision in

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[78]*Id.* at 77. The conduct in question took place at a point approximately two marine leagues (six nautical miles) from the mean low tide line of Florida waters. *Id.* at 70.

[79]*Id.* at 77; *accord*, Felton v. Hodges, 374 F.2d 337 (5th Cir. 1967).

[80]313 U.S. at 77. Mr. Chief Justice Hughes argued that:

> If the United States may control the conduct of its citizens upon the high seas, we see no reason why the State of Florida may not likewise govern the conduct of its citizens upon the high seas with respect to matters in which the State has legitimate interest and where there is no conflict with acts of Congress. Save for the powers committed by the Constitution to the Union, the State of Florida has retained the status of a sovereign.

Id.

[81]*Compare* Dobard v. Texas, 149 Tex. 332, 233 S.W.2d 435 (1950) *with* Bruce v. Director of the Chesapeake, 261 Md. 585, 276 A.2d 200 (1971). The Texas Supreme Court found an exclusionary Texas fishing statute to be unconstitutional. The statute was pronounced invalid as denying nonresidents equal protection of the law. Although conservation measures are a proper limitation on use of fisheries, the Texas statute failed to achieve its designated conservation purpose. In *Bruce*, the Maryland Court of Appeals partially invalidated a Maryland statute restricting the harvesting of oysters to residents of each tidewater county. The court indicated, as *dicta*, that a state may exclude nonresidents. 276 A.2d at 212.

[82]94 U.S. 391 (1876).

[83]*Id.* at 394. The court held that Virginia might exclude a Maryland resident, McCready, from planting oysters in the Ware River, a stream in which the tide ebbs and flows. The Supreme Court justified Virginia's right as follows:

> The principle has long been settled in this court, that each State owns the beds of all tidewaters within its jurisdiction unless they have been granted away [citations omitted]. In like manner, the States own the tide-waters themselves, and the fish, in them, so far as they are capable of ownership while running. For this purpose, the State represents its people, and the ownership is that of the people in their united sovereignty [citation omitted]. The title thus held is subject to the paramount right of navigation, the regulation of which, in respect to foreign and inter-state commerce, has been granted to the United States. There has been, however, no such grant of power over the fisheries. These remain under the exclusive control of the State, which has consequently the right, in its discretion, to appropriate its tide-waters and their beds to be used by its people as a common for taking and cultivating fish, so far as it may be done without obstructing navigation. Such an appropriation is in effect nothing more than a regulation of the use by the people of their common property. The right which the people of the State thus acquire comes not from their citizenship alone, but from their citizenship and property combined. It is, in fact, a property right, and not a mere privilege or immunity of citizenship.

Id. at 394-95.

McCready related to oysters which would remain in Virginia until removed by men and involved regulation of fishing in internal waters.[84] Subsequent decisions have questioned but not overturned *McCready*.[85] The states may enact conservation measures to preserve existing fish stocks in the absence of federal preemption in the same field.[86]

State regulation under either theory must not conflict with the United States Constitution. The privileges and immunities clause and the equal protection clause of the fourteenth amendment limit attempts at exclusionary legislation. These clauses do not permit classifications based upon the fact of non-citizenship unless there is something to indicate that non-citizens constitute a peculiar source of the evil at which the statute is aimed.[87] In *Toomer v. Witsell*[88] and *Takahashi v. Fish and Game Commission*,[89] the Supreme Court considered the state ownership theory in the context of federal constitutional principles. The states involved were found to have the right to discriminate against non-citizens to the extent justified by valid[90] conservation measures.[91] As stated in *Toomer*:

> The whole ownership theory. . .is now generally regarded as but a fiction expressive in legal shorthand of the importance to its people that a State have a power to preserve and regulate the exploitation of any important resource. And there is no necessary conflict between that vital policy consideration and the constitutional command that the State exercise that power like its other powers, so as not to discriminate without reason against citizens of other States.[92]

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[84] *Id.*

[85] *Compare* Dobard v. Texas, 149 Tex. 332, 233 S.W.2d 435 (1950) *with* Toomer v. Witsell, 334 U.S. 385, 408-09 (1948) (J. Frankfurter concurring opinion) *and* Bruce v. Director of the Chesapeake, 261 Md. 585, 276 A.2d 200 (1970).

[86] Dobard v. Texas, 149 Tex. 332, 233 S.W.2d 435 (1950). Rhode Island and Massachusetts have both enacted conservation measures to preserve marine fisheries resources between mean high tide and a line extending seaward for 200 miles. MASS. GEN. LAWS ch. 130, § 17(10) (Supp. 1973); R.I. GEN. LAWS ANN. § 20-36-1 (Supp. 1973). These extended claims have not yet been challenged in court.

[87] Toomer v. Witsell, 334 U.S. 385, 398 (1948).

[88] *Id.*

[89] Takahashi v. Fish and Game Commission, 334 U.S. 410 (1948).

[90] *See* Dobard v. Texas, 149 Tex. 332, 339, 233 S.W.2d 435, 440 (1950). Any limitation based upon citizenship must be directly related to maintaining the desired quantity of fish.

[91] Toomer v. Witsell, 334 U.S. 385, 396 (1948). The Supreme Court stated the test:

> But it (the privileges and immunities clause) does not preclude disparity of treatment in many situations where there are perfectly valid independent reasons for it. Thus the inquiry in each case must be concerned with whether such reasons do exist and whether the degree of discrimination bears a close relation to them.

Id.

[92] 334 U.S. at 402. *See generally* Takahashi v. Fish and Game Commission, 334 U.S. 410 (1948).

Mariculture legislation must similarly conform to the same constitutional standards. The Submerged Lands Act provides that the states have title and ownership to fish, shrimp, oysters, clams, and other marine animals.[93] Various states have exercised extensive control over shellfish.[94] Currently, shellfish production is directly related to state conservation efforts such as limitations on harvesting, redistribution of shells and maintenance of natural beds.[95] Mariculture enterprises will require similar investments of state or private money. Any unlicensed exploitation would endanger the success of a mariculture enterprise. For these reasons mariculture enterprises parallel shellfish cultivation in terms of its required legal environment. The requirements of state or private investment and the confinement necessary in mariculture activities differentiate this enterprise from shrimping or other traditional forms of fishing.

The Submerged Lands Act permits the states to license mariculturists within the limits of territorial waters. Congress determined that state management, administration, development, leasing and use of the natural resources on or above navigable waters was in the national interest.[96] As mentioned above, the statute expressly contemplated state control over fish, shrimp, oysters, clams, and other marine animals found in territorial waters. Congress used general, common terms rather than specific species designation to indicate the broad scope of state authority.[97] The notion of expansive state control is supported by the last phrase in the listing, "other marine animals."[98] This general phrase appears broad enough to cover any mariculture project that can fall under the specific classification.[99] Thus, a state may lease land and the adjacent water column for mariculture practices and may exclude all nonlicensed persons from fishing within areas leased for mariculture

[93]Submerged Lands Act, 43 U.S.C. § 1301(e) (1970).

[94]J. SMITH, MARICULTURE AND THE LAW (to be published 1974). This work, of which this article is a part, expressly discusses state shellfish laws in one section.

[95]*See* Power, *More About Oysters Than You Wanted To Know*, 30 MD. L. REV. 198 (1970).

[96]Submerged Lands Act, 43 U.S.C. § 1311(a) (1970).

[97]For example, Congress used the term "fish." Congress did not expressly indicate what kinds of "fish" were meant or whether any kind of "fish" was not meant. The other terms in the statute are equally broad.

[98]Submerged Lands Act, 43 U.S.C. § 1301(e) (1970).

[99]This interpretation realizes the limits of the *ejusdem generis* rule. Under that rule, if general works in a statute follow an enumeration of persons or things, then the general words are not to be construed in their widest extent and are limited only to persons or things of the same general class or kind as those specifically mentioned. BLACK'S LAW DICTIONARY 608 (4th ed. 1951). However, the initial terms in this statute, those preceding the general phrase, are themselves extremely general. For this reason, a court would likely construe the statute broadly enough to permit state licensing of mariculturists.

purposes.[100] Pursuant to its general welfare police powers, a state may regulate who shall receive a lease and upon what terms.

(d) Limitations on the Coastal Nation

Although the term "sovereignty" is used to indicate the degree of control a nation-state has over the territorial sea, such authority is limited by the competing rights of navigation and entry in distress.[101] By excluding access to other potential users of the territorial sea, a mariculture activity may conflict with a ship's right to innocent passage. Innocent passage means navigation through the territorial sea for the purpose of traversing that sea without entering internal waters, proceeding to internal waters, or making for the high seas from internal waters. It includes stopping and anchoring in so far as the same are incidental to ordinary navigation or are rendered necessary because of *force majeure* or distress.[102]

The right to innocent passage reflects a compromise between a general world community policy of maintaining the oceans as a common resource and the coastal states' interests in power, wealth and well-being.[103] Concern for innocent passage is only present in discussion of the territorial sea because it is only in this zone that the coastal state has such authority.[104] The coastal state has a recognized interest in protecting the well-being of its nationals by such means as restricting fishing, establishing navigation routes, and enforcing health and safety measures in this marginal sea.[105] Thus, the right to innocent passage can be considered as a limitation on the coastal state's right to exercise "sovereignty." The weight accorded to each State's claim will vary depending on the strategic location of the territorial sea, the available alternative routes, the extent of interference with navigation, and other factors important to the coastal state.[106]

The general rule requires that the coastal state must not hamper innocent passage through the territorial sea.[107] Two limitations restrict this general rule. First, passage is innocent so long as it is not prejudicial to "peace, good order or security of the coastal state."[108] In adopt-

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[100]*See* FLA. STAT. ANN. §§ 253.67-253.75 (Supp., 1969).

[101]Convention on the Territorial Sea, arts. 14-17.

[102]*Id.* art. 14.

[103]M. MCDOUGAL & W. BURKE, *supra* note 6, at 184-86.

[104]*See id.* at 186.

[105]*See* Cunard S.S. v. Mellon, 262 U.S. 100 (1923); M. MCDOUGAL & W. BURKE, *supra* note 6, at 9; Note, *Fishing Vessels and the Principle of Innocent Passage*, 48 A.J.I.L. 627 (1954).

[106]M. MCDOUGAL & W. BURKE, *supra* note 6, at 186.

[107]Convention on the Territorial Sea, art. 15.

[108]*Id.* art. 14(4).

ing this limitation, the Law of the Sea Conference gave no specific operational guides to these terms.[109] At the very least, these limitations require that the coastal state demonstrate a conflict with internationally recognized interests rather than specific national interests accorded great importance solely by the coastal state. Second, the general rule of innocent passage is limited by the requirement that foreign ships must comply with the laws and regulations enacted by the coastal state in conformity with international law.[110] McDougal and Burke suggest weighing the following indices to determine whether restrictions imposed by the coastal state unduly hamper innocent passage: (1) the consequentiality and range of the interests sought to be protected by the coastal state; (2) the scope of the authority claimed; (3) the importance of the area claimed for *inclusive* use; (4) the intensity of the impact upon coastal interests and (5) alternative sanctions available for coastal protection.[111]

The United States currently regulates innocent passage by legislation and by agreements affecting navigation. The Convention on the Territorial Sea and the Contiguous Zone provides that foreign ships exercising the right of innocent passage shall comply with laws and regulations enacted by the coastal state.[112] An analysis of two regulations may demonstrate the relationships among the right of innocent passage, the national interest being protected, and the scope of authority that the United States may claim. Both the Regulations Preventing Collisions at Sea[113] and the Shipping Safety Fairways Agreement[114] control navigation by American and foreign vessels. Congress has adopted the International Regulations for Preventing Collisions at Sea and enacted the Regulations into positive law.[115] The Regulations provide that:

> All vessels not engaged in fishing . . . shall when under way, keep out of the way of vessels engaged in fishing. This Rule shall not give to any vessel engaged in fishing the right of obstructing a fairway used by vessels other than fishing vessels.[116]

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[109]M. MCDOUGAL & W. BURKE, *supra* note 6, at 252.

[110]Convention on the Territorial Sea, art. 17.

[111]M. MCDOUGAL & W. BURKE, *supra* note 6, at 229.

[112]Convention on the Territorial Sea, art. 17.

[113]International Regulations for Preventing Collisions at Sea, [1965] 1 U.S.T. 794, T.I.A.S. No. 5813 [hereinafter cited as Regulations].

[114]*See* Griffin, *supra* note 25, at 578-83 (1967); Knight, *supra* note 18. *See also* Griffin, *Ocean Navigation Fairways Through Gulf of Mexico 'Oilfields'*, 44 INT'L HYDROGRAPHIC REV. 177 (1967).

[115]Regulations for Preventing Collisions at Sea, 33 U.S.C. § 1051 *et seq.* (1970).

[116]*Id.* § 1088.

The Regulations define the term "engaged in fishing" to mean fishing with nets, lines or trawls.[117] The definition expressly excludes fishing with trolling nets.[118] Whether a mariculture activity would be considered as fishing is not settled. Kane concludes that "aquaculture established under the authority of the state will almost certainly be held in future decisions to be a 'fishery' for purposes of state regulation."[119] However, fishing operations are transient, passing through portions of the ocean. A mariculture enterprise would involve exclusive use of a limited portion of the ocean for extended periods of time. For navigational considerations, a mariculture activity would more closely approximate a permanent obstruction such as an oil derrick rather than a fishing vessel. Navigational routes will have to be permanently adjusted to reflect the presence of the mariculture activity, or such practices will be wisely located out of established navigational routes.

Regardless of the classification of mariculture, the navigational regulations will apply. As discussed above, all vessels are obligated to exercise reasonable care to avoid collisions at sea.[120] Vessels are obligated to navigate around less maneuverable vessels, such as fishing ships. A mariculture enterprise would create a similar burden on navigation. Vessels under way would be required to steer around the mariculture operation. Moreover, mariculture activities could be marked on all Coast and Geodetic Survey charts to provide a reliable guide to navigation around such structures. Because the presence of the structure would be predictable and its location static, the mariculture enterprise would appear to cause less danger of collision than would a moving vessel.

The Shipping Safety Fairways in the Gulf of Mexico are another limitation on the right of innocent passage. Shipping Safety Fairways are areas in which the Department of the Army has not granted permits for structures and does not intend to grant permits.[121] Shipping is not required to use the fairways; however, the shipping lanes provide safer access to Gulf ports.[122]

In collisions at sea, liability is based on fault.[123] A finding of fault presupposes a standard of correct action.[124] Professors Gilmore and Black list the following sources for establishing a standard of conduct:

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[117]*Id.* § 1061(c)(xiv).

[118]*Id.*

[119]T. KANE, *supra* note 7, at 35.

[120]G. GILMORE & C. BLACK, *supra* note 8, at 399.

[121]Griffin, *supra* note 25, at 583.

[122]*Id.* at 581.

[123]G. GILMORE & C. BLACK, *supra* note 8, at 396.

[124]*Id.* at 398.

the statutory Rules of Navigation, other statutes and regulations having the force of statutes, proved local "customs" not contradicting either of the above, and the requirements of good seamanship and due care.[125] In the event of a collision outside a fairway, it is likely the courts will recognize the concept of shipping lanes.[126] Failure to remain within the lanes may be considered as evidence of negligence. Location of new uses such as mariculture structures away from recognized shipping lanes should decrease the likelihood of interference with such existing uses.

Mariculture entrepreneurs can not, by analogy to oil exploration related physical obstructions, gain acceptance for their facilities.[127] Oil drilling operations are logically connected to a particular space on the continental shelf. The oil derrick must be located in close proximity to the oil field. Mariculture activities lack this recognized nexus to the continental shelf.[128] However, the Shipping Safety Fairways demonstrate the balancing process between two competing ocean uses—navigation and mineral exploration. Rather than giving either right absolute priority, this practice accommodates both uses. This conflict could be similarly reconciled by mariculture licensing practices. As the potential for conflict is minimized, the possibility for acceptance of mariculture is enhanced.

In conclusion, the State of Georgia may license mariculture activities in territorial waters off the Georgia coast. However, any license will be subject to approval by the United States Army Corps of Engineers. Domestic and foreign shipping industries may complain that mariculture facilities have impeded their right to innocent passage. The resolution of this potential conflict will depend upon the factors listed above.[129] In the particular, the outcome will depend on the location of the mariculture facility relative to navigational lanes, the size of the facility and the benefit derived from the facility.

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[125]*Id.* at 398-99.

[126]Griffin, *supra* note 25, at 581.

[127]Guess v. Read, 290 F.2d 622, 635 (5th Cir. 1961), *cert. den.* 388 U.S. 957 (1962); Convention on the Continental Shelf, art. 2. The Continental Shelf Convention recognized the coastal state's authority over the shelf for the purpose of exploring it and exploiting its natural resources. Fish and other mobile marine species are not included within the definition of natural resources. In *Guess* the Fifth Circuit Court of Appeals interpreted the United States Outer Continental Shelf Lands Act to permit ownership of and jurisdiction over minerals in and under the continental shelf. This approach would hold that fish are not natural resources under the convention.

[128]*See generally* HERSHMAN, *supra* note 13, at 95.

[129]*See* p. 322 *supra*. These factors are (1) the consequentiality and range of the interests sought to be protected by the coastal state, (2) the scope of the authority claimed, (3) the importance of the area claimed for inclusive use, (4) the intensity of the impact upon coastal interests, and (5) alternative sanctions available for coastal protection.

B. Contiguous Zone

1. Federal Authority

International law recognizes the right of the United States to exercise sufficient control over the contiguous zone to protect its national interests.[130] The Convention on the Territorial Sea and the Contiguous Zone specifically recognizes the authority of the coastal state to prevent infringement of customs, fiscal, sanitary or immigration regulations.[131] The United States has declared an exclusive fishing zone within the contiguous zone and justified the action as a necessary step to protect the domestic fishing industry and to conserve existing fish stocks. Although exclusive fishing rights are exercised, they remain subject to those historic fishing claims "as may be recognized by the United States."[132] Although the United States may regulate domestic fishermen and exclude foreign fishermen, the question remains whether the United States can authorize a mariculture project in the contiguous zone.

The United States can license mariculture in the contiguous zone.[133] Mariculture practices resemble a fishery for international law purposes.[134] Because the United States already controls the use of fisheries in the contiguous zone, it should also be able to create additional fisheries. This rationale coincides with the notion of protection of national interests. The United States would be augmenting domestic food stocks, a matter vital to national well-being. A further rationale supporting United States authority is the inability of a foreign nation to effectively

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[130]*See generally* Griffin, *supra* note 25, at 583-85.

[131]Convention on the Territorial Sea, art. 24(1).

[132]16 U.S.C. § 1091 (1970). *See generally* Griffin, *supra* note 25, at 585. This provision was intended to put the United States in a position to negotiate permanent agreements with foreign states for the reciprocal recognition of historic fisheries.

The United States has negotiated a series of agreements with Japan recognizing Japanese fishing rights in the contiguous zone. Agreement with Japan Regarding the King and Tanner Crab Fisheries in the Eastern Bering Sea, Dec. 11, 1970, [1970] 3 U.S.T. 2734, T.I.A.S. 7019; Agreement with Japan Concerning Certain Fisheries off the Coast of the United States, Dec. 11, 1970, [1970] 3 U.S.T. 2746, T.I.A.S. 7020; Agreement with Japan Relating to Salmon Fishing in Water Contiguous to the United States Territorial Sea, Dec. 11, 1970, [1970] 3 U.S.T. 2746, T.I.A.S. 7020. *See also* Agreement with the Union of Soviet Socialist Republics on Certain Fishery Problems on the High Seas in the Western Areas of the Middle Atlantic Ocean, Jan. 1, 1969, [1968] 6 U.S.T. 7661, 7664, T.I.A.S. 6603.

[133]Federal Water Pollution Control Act Amendments, 33 U.S.C. § 1328 (Supp. 1973), *amending* 33 U.S.C. § 1161 (1948).

[134]*See* T. KANE, *supra* note 7, at 35. Kane feels that ". . . aquaculture established under the authority of the state will almost certainly be held in future decisions to be a 'fishery' for purposes of state regulation." *Id.* The classification of aquaculture for international law purposes will likely resemble the classification found in the federal-state context.

protest a federal mariculture lease. Almost all foreign activity is already excluded from the contiguous zone. Foreign shipping and navigation and the right of innocent passage would have to be resolved as in the territorial sea. However, a note of caution should be introduced. A United States law granting leases in the contiguous zone might be viewed by other nations as an attempt by the United States to extend its sovereignty. Although such an extension would not be objectionable,[135] it might inadvertently extend the United States territorial limit to twelve miles.[136]

2. State Authority

An unresolved question remains concerning the states' jurisdiction in the contiguous zone. Congressional legislation has extended the control that the federal government exercises over the contiguous zone.[137] Kane contends that this extension of federal jurisdiction has retained or preserved the states' rights in the zone.[138] The Fisheries Zone Act provides that:

> Nothing in this Act shall be construed as extending the jurisdiction of the States to the natural resources beneath and in the waters within the fisheries zone established by this Act or as diminishing their jurisdiction to such resources beneath and in the waters of the territorial sea of the United States.[139]

State governments currently possess limited jurisdiction over the contiguous zone. Their authority is less than in the territorial sea with respect to jurisdiction over nonresidents and natural resources. However, the states have the right to govern the conduct of their citizens upon the high seas with respect to those matters in which the State has a recognized interest.[140] Kane argues that the states' conduct of fisheries and mariculture enterprises in the contiguous zone may be allowed.[141]

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[135]*See* M. MCDOUGAL & W. BURKE, *supra* note 6, at 565-66; Alexander, *supra* note 21. A claim to a twelve mile territorial sea would simply align the United States with other nations which have already claimed such a limit. The validity of such an extended claim must always be considered relative to the interests of the United States Department of Defense. *See* Knight, *Non-Extractive Uses of the Seabed*, 6 MARINE TECHNOLOGY SOCIETY JOURNAL 18 (1972).

[136]16 U.S.C. § 1091 (1970); 33 U.S.C. § 1257, 86 Stat. 816 (1972), *amending* 33 U.S.C. § 1161 (1948); 33 U.S.C. §§ 1401, 1402(b) 86 Stat. 1052 (1972).

[137]*See* Marine Protection, Research, and Sanctuaries Act of 1972, Pub. L. No. 92-532, 86 Stat. 1052, § 302(g) (1972). In the ocean dumping legislation, the United States expressly refrains from asserting jurisdiction over foreign nationals outside the territorial sea.

[138]T. KANE, *supra* note 7, at 30-33.

[139]Fisheries Zone Act, 16 U.S.C. §§ 1091-94 (1970).

[140]*See* Skiriotes v. Florida, 313 U.S. 69 (1941). *See generally* Am. Waterways Operators v. Askew, 411 U.S. 325 (1973).

[141]T. KANE, *supra* note 7, at 31-33. *See also* Federal Water Pollution Control Act Amendments

3. Law of the Sea Conference

The Law of the Sea Conference[142] may render moot many of the questions of federal and state authority. The United States has announced its support for a 12 mile territorial limit.[143] If the United States, either through a multilateral convention or through unilateral action, extended the territorial sea to 12 miles, then domestic law would govern the licensing of mariculture projects. Current domestic law appears to give the states authority out to three miles and the federal government authority from three to twelve miles.[144] The Submerged Lands Act expressly limits state authority at a three mile limit, the Outer Continental Shelf Lands Act confers no additional authority upon the states and the Fisheries Act expressly negates any extension of state authority. This conclusion is supported by the decision in *Union Oil Co. v. Minier*,[145] regarding federal leases in the outer continental shelf. When the federal government has exerted its authority, either directly or through private persons, then the states must give way.[146]

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of 1972, 33 U.S.C. § 1328, (Supp. II, 1972), *amending* 33 U.S.C. § 1161 (1970); Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C. § 1401, 86 Stat. 1052 (1972). Recent federal laws lend support to Kane's argument. The Marine Protection, Research, and Sanctuaries Act applies to ocean waters, which are defined to mean waters in the contiguous zone. Provisos in the Act expressly excludes aquaculture authorized under federal or state authority and the deposit of oyster shells or other materials "when such deposit is made for the purpose of developing, maintaining, or harvesting fisheries resources and is otherwise regulated by Federal or State law or occurs pursuant to an authorized federal or State program." *See* 33 U.S.C. § 1402(f), (Supp. II, 1972); 33 U.S.C. § 1328(a) (Supp. II, 1972).

[142]*See* G.A. Res. 2750 C, 25 U.N. GAOR Supp. 28, at 25, U.N. Doc. (1970).

[143]Statement by President Nixon, White House Press Release, May 23, 1970; *see* Ratner, United States Ocean Policy, 2 J. MARITIME L. & COM. 225, 245-46 (1971).

[144]Submerged Lands Act, 43 U.S.C. § 1301 (1970); Outer Continental Shelf Lands Act, 43 U.S.C. § 1331 (1970). *But see* HERSHMAN, *supra* note 13, at 92-93; T. KANE, *supra* note 3, at 32-33. Kane qualifies his remarks by noting that the federal government may dispute and deny the state's authority. Professor Knight does not consider the contiguous zone as a separate jurisdictional area. He postulates two possible alternatives: either the territorial sea will be expanded to twelve miles or it will remain at three miles. The contiguous zone between three miles and twelve miles will be governed by the legal regime present in the territorial seas or on the high seas. HERSHMAN, *supra* note 13, at 92-93.

[145]437 F.2d 408 (9th Cir. 1970).

[146]*Id.* at 411. *But see* Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. § 1251 *et. seq.* (Supp. II, 1972) *amending* 33 U.S.C. § 1161 (1970). However, the Water Pollution Control Act Amendments provide that states, political subdivisions, and interstate agencies retain the right to set more restrictive standards and limitations than those imposed under this Act. These standards may effect conduct in the contiguous zone. *Id.* § 1370. For example, state pollution laws may restrict federally licensed mariculture projects in the contiguous zone, if the mariculture project threatened irreparable harm to recognized state interests. *See* American Waterways Operators v. Askew, 411 U.S. 325 (1973).

C. *High Seas*

1. Coastal State Authority

Existing international law regarding conduct on the high seas is generally found in the Convention on the High Seas.[147] Neither customary international law nor the Convention on the High Seas expressly recognizes nor prohibits the practice of mariculture on the high seas.[148] The terms of this convention, however, would limit the acceptance or recognition of mariculture practices on the high seas. Relative to this convention, it is important to note that, in most conceivable instances, mariculture practices in these ocean areas would require use of a relatively small area.

Two general themes appear throughout the Convention on the High Seas. The first is the policy of nonexclusive use. According to various provisions, no state may validly subject any part of the high seas to its sovereignty,[149] they are to remain open to all nations,[150] and all states are entitled to use them.[151] Subsequent United Nations General Assembly resolutions have reiterated the theme by providing that no state may appropriate or exercise sovereignty over the seabed and ocean floor in the area beyond national jurisdiction.[152] However, each state may exercise jurisdiction over its own nationals and ships in this area.[153]

Another theme in the Convention is the right to make reasonable use of the high seas. The Convention on the High Seas specifically recognizes the use of these areas for navigation, fishing, the laying of submar-

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[147]Convention on the High Seas.

[148]Report of the International Law Commission to the General Assembly, [1956] 2 Y.B. INT'L L. COMM'N 253, U.N. Doc. A/3159 (1956). One interpretation of existing international law would prevent any mariculture activities on the high seas. The International Law Commission gave a narrow interpretation in its commentary to the draft article of the Continental Shelf Convention which permits the construction of structures on the continental shelf:

> To lay down . . . that the exploration and exploitation of the continental shelf must never result in any interference whatsoever with navigation and fishing might result in many cases in rendering somewhat nominal both the sovereign rights of exploration and exploitation and the very purpose of the articles as adopted. The case is clearly one of assessment of the relative importance of the interest involved. Interference, even if substantial, with navigation and fishing might, in some cases be justified. On the other hand, interference even on an insignificant scale would be unjustified if unrelated to reasonably conceived requirements of exploration and exploitation of the continental shelf.

Id. at 299.

[149]Convention on the High Seas, art. 2; *see* n. 36 *supra.*

[150]Convention on the High Seas, art. 2.

[151]*Id.* art. 3.

[152]G.A. Res. 2749, 25 U.N. GAOR Supp. No. 28, at 24 A/8208 (1970).

[153]Griffin, *supra* note 25, at 686.

ine cables and pipelines, overflight, and other uses, "which are recognized by the general principles of international law."[154] These uses are conditioned upon the requirement that they "be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedom of the high seas."[155] Therefore, a mariculture project could never be justified that would unreasonably interfere with other existing uses.

Given the general limits set forth in the Convention on the High Seas, the following analysis considers some possible international legal barriers to acceptance of mariculture on the high seas. Three major objections immediately appear: (1) that the claim to exclusive use of the ocean is really a claim of extended national sovereignty; (2) that mariculture is not an ocean use recognized by "general principles of international law;" and (3) that mariculture will unreasonably interfere with existing ocean uses.

2. Private Nongovernmental Authority

In light of the general rule that no State has a right to exercise sovereignty over the high seas,[156] two questions arise: what constitutes an exercise of sovereignty and can a mariculture project be regarded as an attempt to establish such authority? One approach to defining the term sovereignty would be to compare and contrast the use of that term in the other Geneva Conventions on the Law of the Sea.

The Convention on the Continental Shelf states that the coastal state exercises sovereign rights over the continental shelf for the purpose of exploring it and exploiting its natural resources.[157] Within the area of recognized authority, a coastal state exercises authority comparable to the authority it exercises over its national land mass in that it may totally exclude nonnationals. The Convention on the Territorial Sea and the Contiguous Zone provides that the sovereignty of a coastal state extends to the outer limit of its territorial sea.[158] The term sovereignty, in this context, has been applied to give coastal states the authority to legislate with respect to conduct in the territorial sea and to exclude nonnationals.[159] Although no provision directs that these Geneva Conventions be construed in *pari materia*, an international arbitral or judicial tribunal would be likely to construe them together. If such a method of

[154]Convention on the High Seas, art. 2.

[155]*Id.*

[156]*Id.*

[157]Convention on the Continental Shelf, art. 2.

[158]Convention on the Territorial Sea, art. 1.

[159]*See generally* Fisheries Zone Act of 1966, 16 U.S.C. §§ 1091-94 (1970).

construction were employed, the term sovereignty in the Convention on the High Seas would refer to the authority of a state to administer or police a region of the high seas, to deny access to foreign nationals and to proclaim exclusive competence in that region. Relying upon a similar concept of sovereignty, Thomas Kane concluded that the United States could not make a claim of sovereignty to an area of the high seas being used for mariculture.[160]

Having defined the term sovereignty to mean exercise of near absolute authority over large areas of the sea and continental shelf, the practice of mariculture is not necessarily excluded from the high seas. A mariculture project would require enclosing a portion of the ocean and excluding other users. However, various nations and individuals have already successfully asserted their rights to exclusive use of portions of the high seas without creating zones of national "sovereignty." Unilateral actions, similar to those proposed for mariculture, have been taken in restricting access to the high seas. The United States has, in the past, limited access to high seas areas for relatively brief periods during testing of nuclear weapons.[161] Private deepwater lobster fishing activities have limited other users in some high seas areas.[162] The lobster practices, in particular, conflict with fishing done by trawlers.[163] These claims have been respected by foreign interests.[164] International recognition of claims has depended, in part, on the justification offered for the claim.[165] In this context a mariculturist could conduct his activities on the high seas without being barred as attempting to claim sovereignty.[166]

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[160]T. KANE, *supra* note 7, at 26. *See also* Note, *Jurisdictional Problems Created By Artificial Islands*, 10 SAN DIEGO L. REV. 638, 650-51 (1973).

[161]T. KANE, *supra* note 7, at 62; McDougal, *The Hydrogen Bomb Tests and the International Law of the Sea*, 49 A.J.I.L. 356, 357 (1955).

[162]Windley and Blondin, *Issues Raised by the Attachment of the Suleyman Stalskiy*, 4 J. MARITIME L. & COM. 141 (1972). Deepwater lobster fishing practices are of relatively recent origins. The northeast lobster fishery began in 1952. Thus, like mariculture, the introduction of lobster pots into the high seas represented a "new" ocean use.

[163]*Id.* at 142.

[164]*Id.* at 145. The Soviet government paid $89,000 for damage caused when a Soviet trawler destroyed lobster pots owned by an American Company.

[165]M. MCDOUGAL & W. BURKE, *supra* note 6, at 764-5.

[166]*See* T. KANE, *supra* note 7, at 65. *See generally* Note, *The Establishment of Mandatory Sealanes by Unilateral Action*, 22 CATHOLIC U.L. REV. 108 (1972). *But see* Note, *supra* note 150, at 651-52. As a general rule of international law, a country may assert jurisdiction whenever its assertion does not conflict with a principle of international law. International practice has recognized the authority of the United States to assert its jurisdiction in air space over the high seas based upon the right of self-defense or protection of customs. Specifically, the United States has established Air Defense Identification Zones which require all aircraft to file position reports when approaching the United States. The United States has also asserted limited jurisdiction on the high seas in prescribing danger zone regulations. 33 C.F.R. §§ 204.1 - 204.232 (1971). However, both

In many respects mariculture represents a new ocean use that has not previously been considered by international law and clearly is not recognized by "general principles of international law." However, this novelty does not mean that mariculture is prohibited or that mariculture could never be recognized. Because serious legal consideration of mariculture on the open seas will not come until its technology is further developed, the problem of the method of recognition becomes important.

International conventions do not establish an express procedure for the recognition of a new use; however, customary international law suggests one method. Customary international law itself consists of a constantly evolving set of norms that receive recognition as having legal status. Within this area of customary international law, many of the initial moves toward legal recognition of new practices have been accomplished by "unilateral action."[167] Because principles of customary international law may dictate the fate of mariculture on the high seas, a discussion of the operation of those principles or rules is in order.

International law has traditionally been customary law, for it is the product of the consciences of state rather than the will of a political superior.[168] By the term custom, international law refers to "a clear and continuous habit of doing certain actions [which] has grown up under the aegis of the conviction that these actions are, according to international law, obligatory or right."[169] Custom is distinguishable from practices[170] or usages[171] because the habit of doing these actions has grown up with the conviction that these actions are obligatory or right.[172] As discussed above,[173] international law has no settled answers with respect to conducting mariculture activities in ocean areas.

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examples involve considerations of national security. The development of a commercial ocean use lacks the national security justification.

[167]HERSHMAN, *supra* note 13, at 96. *See also* Truman Proclamation. The Truman Proclamation was the major impetus to the development of the current legal regime governing the continental shelf. In part, it subjected the natural resources of the continental shelf to United States jurisdiction and control. The President justified this extension based upon the desire to exploit natural resources, the need for some legal regime to direct activities and the physical proximity of the continental shelf.

[168]D. O'CONNELL, 1 INTERNATIONAL LAW 4 (1965). *See generally* C. JENCKS, A NEW WORLD OF LAW 137-39 (1969).

[169]L. OPPENHEIM, *supra* note 17, at 26.

[170]D. O'CONNELL, *supra* note 168, at 9. "The term 'practice' is used to indicate the aggregation of steps which are formative of law, whereas the term 'custom' is reserved for the law itself." *Id.*

[171]L. OPPENHEIM, *supra* note 17, at 26. The term usage denotes a habit of doing certain actions which has grown up without the conviction that these actions are obligatory.

[172]*Id.*

[173]*See* p. 329 *supra*.

Customary international law remains in constant flux.[174] In particular, the law of the sea has developed and is developing from customary law. Professor Myres McDougal describes the law of the sea as a decision making process; a process of continuous interaction, of continuous demand and response in which unilateral and competing claims are weighed and appraised by decision makers external to the demanding state in terms of the interest of the world community and of the rival claimants.[175] To determine whether this process can incorporate new maritime uses, several questions need to be answered: (1) what elements are required for the establishment of a principle of customary international law; (2) can the United States or American nationals unilaterally adopt a new practice; and (3) how are new uses reconciled with existing uses?

International jurists cannot agree on any listing of elements required for the establishment of a principle of customary international law.[176] In his working paper for the International Law Commission, Hudson, the reporter for the Commission, listed the following requirements for the establishment of a principle of customary international law: concordant practice by a number of States with reference to a type of situation falling within the domain of international relations; continuation or repetition of the practice over a considerable period of time; conception that the practice is required by, or consistent with, prevailing international law; and general acquiescence in the practice by other States.[177] This was later omitted from the International Law Commission Report.[178] Wilfred Jenks suggested that the rejection was based on Hudson's requirement for repetition of the practice over long periods of time.[179] The International Law Commission recognized the potential and the need for "instant" or "spontaneous" custom.[180] No international body has legislated with respect to mariculture activities; therefore, the problem of instant custom is not present with respect to

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[174]HERSHMAN, *supra* note 13, at 96.

[175]McDougal, *supra* note 161, at 356-57.

[176]D. O'CONNELL, *supra* note 168, at 17; C. JENKS, *supra* note 168, at 140-143.

[177]Report, International Law Commission, [1950] 2 Y.B. INT'L L. COMM'N 26, U.N. Doc. A/CN 4/16 (1950).

[178]Report, International Law Commission, [1950] 2 Y.B. INT'L L. COMM'N 364, U.N. Doc. A/1316 (1950). D. O'CONNELL, *supra* note 168, at 17.

[179]C. JENKS, *supra* note 168, at 142.

[180]*Id.* at 142-6. The notoriety and continuity of practice necessary to preserve general acquiescence no longer requires duration of considerable periods of time. Modern communications have made transmission immediate. Also, the United Nations General Assembly exists as a supranational legislating body. The Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space demonstrates the legislative capacity of the General Assembly. Note, 4 GA. J. INT'L & COMP. L. 159, 168 n.69 (1974).

mariculture. The mariculture practices, to be recognized as legally binding, will have to be conducted and repeated over a "considerable"[181] period of time.

American nationals can conduct mariculture activities in ocean areas subject to the competing rights of foreign parties.[182] Both the United States and foreign States have to defer to the practice before it will be recognized as legally binding. In determining the status of the practice, the International Court of Justice has looked for general rather than national practices and for positive actions in preference to mere abstention from action.[183] The party relying upon customary law has the burden of establishing that the practice is binding on the other party.[184] The United States, arguing on behalf of a mariculturist and defending his use of part of the high sea, would have to prove that opposing States had accepted the legal presence of the mariculture activity.[185] To meet this burden of proof it must be shown that ships of the States in question made appropriate adjustments in the usual course of travel; that fishermen refrained from fishing in that area; and that these actions were taken in recognition of a right appertaining to the United States or to the individual.[186]

3. Limitations on Mariculture Practice

All activities upon the high seas, including new uses such as proposed in this article, must be undertaken with reasonable regard to the interests of other States in their exercise of the freedom of the high seas. The reasonableness of a use can be regarded from the standard of the national interest being advanced, the benefit occuring from that conduct to both the national and the world economy, the harm done to existing interests, and the possibility of another less costly alternative. Recent bilateral and multilateral agreements regarding fisheries resources have recognized in principle the importance to national interests of existing fisheries in areas formerly thought to be within the high seas.[187]

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[181]*Id.* at 142. No definite time limits exist for what is a "considerable" period of time.

[182]*See* p. 330 *supra.*

[183]Case of the S.S. "Lotus," [1927] P.C.I.J. ser. A, No. 10; D. O'CONNELL, *supra* note 168, at 18.

[184]*See* Columbian-Peruvian Asylum Case, [1950] I.C.J. 266, 276.

[185]D. O'CONNELL, *supra* note 168, at 20-21.

[186]*See id.*

[187]*See* Offshore Shrimp Fisheries Act of 1973, Pub. L. 93-242; 87 Stat. 1061; Shrimp Conservation Agreement with Brazil, May 9, 1972, 67 DEPT. STATE BULL. No. 111 (1972); Agreement Between Iceland and the United Kingdom Concerning Fishing Rights, November 13, 1973, 12 INT'L LEGAL MAT'LS 1315; Agreement Between Iceland and Norway Concerning Fisheries, July 10, 1973, 12 INT'L LEGAL MAT'LS 1313; Convention on Fishing and Conservation of the Living

The threat to national well-being was a prime factor in justifying the recognition of these extended zones.[188] The recent treaty with respect to the Baltic Sea recognizes the practices of artificial reproduction and transplantation of fish and other living organisms as a step toward insuring maximum and stable production.[189] The benefit to national interests and expansion of fisheries resources both serve to justify mariculture practices. Among the arguments justifying this new use are the observations that mariculture is a modern complement to traditional fishing practices; that mariculture would augment rather than deplete fish stocks;[190] that mariculture would permit the maximum use of the ocean as a source of food;[191] and that mariculture will increase domestic food supplies at a time of food shortages.

To be considered as acceptable conduct, mariculture cannot unreasonably interfere with other national claims to the high seas.[192] Possible conflicts with navigational uses and the laying of cables or pipelines can be avoided by careful selection of the mariculture site. Mariculture should in no way conflict with the right to fly over the high seas. The ocean use posing the greatest potential for conflict with mariculture is that of existing traditional fisheries, because the new enterprise may result in excluding fishermen from a small area formerly used or traversed by fishermen. However, the question is whether mariculture will unreasonably interfere with existing fishing practices. As Kane notes, mariculture is a breeding process, the existing fish population will not be depleted and mariculture will probably be confined to a small area.[193]

A problem may still arise if a mariculturist proposes to locate in the midst of an existing fishing area. In such a situation, the conflict should be resolved by considering (1) the probable benefit, both short-term and long-range, to the mariculturist from locating at such a site; (2) the probable short-term and long-term losses the fisherman will suffer; and (3) the availability of other suitable sites for the mariculture activity. In resolving this conflict, an international arbitral tribunal or court should

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Resources in the Baltic Sea and the Belts, *done* Sept. 13, 1973, U.N. Doc. A/C.1/1035, 12 INT'L LEGAL MAT'LS 1291.

[188]*See* Arctic Waters Pollution Prevention Act of 1970, 18-19 Eliz. 2, c.47 (Can.) at 653 (1970).

[189]Convention on Fishing and Conservation of the Living Resources in the Baltic Sea, art. 10(e), *done* Sept. 13, 1973, U.N. Doc. A/C.1/1035, 12 INT'L LEGAL MAT'LS 1291.

[190]T. KANE, *supra* note 7, at 65.

[191]*Id.*; *but see* M. MCDOUGAL & W. BURKE, *supra* note 6, at 764.

[192]Convention on the High Seas, art. 2. *See also* McDougal, *Law of High Seas in Time of Peace*, 3 DENVER J. INT'L LAW & POLICY 47 (1973).

[193]T. KANE, *supra* note 7, at 65-66.

also weigh the speculative nature of any mariculture venture and the need for accommodating new scientific technologies.

D. Submerged Lands and the Continental Shelf

International rules define ocean waters in different terms than those used to define the ocean bottom. International law divides the ocean bottom into areas within or beyond national jurisdiction. National jurisdiction over the seabed and subsoil of the continental shelf extends beyond the territorial sea to a depth of 200 meters, or beyond that limit, to where the depth of the water permits exploitation of the natural resources of such areas.[194] If the continental shelf extends beyond the territorial seas, the coastal nation does not have sovereign jurisdiction over the superjacent waters.[195] Because the territorial zone and the continental shelf are defined without relation to each other, they are analyzed under separate headings in this article.

There are two principal questions relating to the creation of a mariculture facility on the continental shelf.[196] For purposes of this initial discussion, the term continental shelf includes submerged lands as that term is used in the Submerged Lands Act and the Outer Continental Shelf Lands Act;[197] however, a distinction between the terms will be drawn in the discussion of the jurisdiction of the State of Georgia. The first question is whether, under current international law, the United States has the authority to permit construction[198] of the facility, and the second is whether the State of Georgia has authority to permit construction of the facility. A parallel issue is whether either or both governmental bodies have authority to regulate the mariculture operation.[199]

Among other factors, the degree of attachment to the seabed differentiates mariculture from other uses of the high seas. Fishing and navigational uses are only temporarily in contact with the seabed. A relatively permanent connection of a mariculture facility to the seabed, in addition to a surface presence, and exclusion of other potential users, would

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[194]Convention on the Continental Shelf, art. 1.

[195]*Id.* art. 3. Article 3 of the Convention provides that:

> The rights of the coastal state over the continental shelf do not affect the legal statute of the superjacent waters as high seas, or that of the airspace above those waters.

[196]HERSHMAN, *supra* note 13, at 99.

[197]Submerged Lands Act, 43 U.S.C. § 1301(a) (1970); Outer Continental Shelf Lands Act, 43 U.S.C. § 1331(a) (1970).

[198]*See generally* van Panhuys & van Emde Boas, *supra* note 5. This discussion treats legal problems associated with permitting and denying construction. While the legal considerations differ, both considerations represent extensions of coastal state jurisdiction.

[199]*Id.*

characterize proposed mariculture projects.[200] For those reasons, mariculture could also be considered a use of the continental shelf. Therefore, mariculture will have to be reconciled with the legal regime governing the continental shelf.

1. Coastal State Authority

United States exercise of jurisdiction over the continental shelf is governed by the Continental Shelf Convention.[201] This Convention provides that coastal nations may exercise sovereign rights over the continental shelf for the purposes of exploration and exploitation of the natural resources present in the continental shelf lands.[202] The term natural resources is defined to include mineral and other nonliving resources of the seabed and subsoil together with living organisms belonging to sedentary species.[203] Sedentary species are, at the harvestable stage, immobile on or under the seabed, or are unable to move except in constant physical contact with the seabed or the subsoil.[204] "[T]he coastal state is entitled to construct and maintain or operate on the continental shelf installations and other devices necessary for its exploration and exploitation of its natural resources. . . ."[205] The coastal state also may take measures necessary for the protection of the installation.[206]

The question arises whether, within the rules recognized by the Convention, the United States has the authority to permit construction of a mariculture facility that will be attached to the continental shelf? Two different interpretations can be given the Continental Shelf Convention.[207] An accepted maxim of statutory interpretation is *expressio unius est exclusio alterius*.[208] This rule of statutory interpretation would re-

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[200]*See* HERSHMAN, *supra* note 13, at 100.

[201]Convention on the Continental Shelf.

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

[203]*Id.* art. 2(4).

[204]*Id.* This definition clearly includes crabs and oysters and similar crustacea and shellfish. *See* 4 WHITEMAN INTERNATIONAL LAW 858-865 (1965).

[205]Convention on the Continental Shelf, art. 5(2).

[206]*Id.* Notice must be given of the construction of any surface installation and a permanent warning must be attached. *Id.* art. 5(5).

[207]HERSHMAN, *supra* note 13, at 101-108.

[208]Chung Fook v. White, 264 U.S. 443 (1924); Macon v. Walker, 204 Ga. 810, 57 S.E.2d 633 (1949). *See generally* District of Columbia National Bank v. District of Columbia, 348 F.2d 808 (D.C. Cir. 1965); A. LENHOFF, LEGISLATION 690-701 (1949); Hunt, *Expressio Unius Est Exclusio Alterius — Application by Custom*, 19 FLORIDA L.J. 199 (1945); Williams, *Expressio Unius Est Exclusio Alterius*, 15 MARQ. L. REV. 191 (1931). This maxim means the expression of one thing implies the exclusion of another. The use of the maxim is not intended to indicate that a court necessarily would use this rule of statutory interpretation rather that a court would have this rule available for construing the convention.

strict the coastal state's jurisdiction to only natural resource extractive activities.[209] An alternative interpretation can be given favoring expanding the meaning of the term "natural resources." This approach would include under such term "virtually any use of the seabed, for the seabed itself is a resource of value in the economic sense if any commercial or governmental enterprise depends upon the use, either permanently or temporarily, of some portion thereof."[210] Neither interpretation has been adopted by international or United States courts;[211] however, several commentators favor the latter interpretation[212] which would permit the United States to authorize the construction of mariculture facilities.

Coastal nations have successfully asserted jurisdiction over the contiental shelf to prohibit unlicensed users. In *United States v. Ray*,[213] the United States Court of Appeals upheld an injunction obtained by the United States Government to prevent certain entrepreneurs from constructing an articifical island attached to coral reefs on the continental shelf under the high seas off the Florida coast.[214] The court determined that construction of the island facility would interfere with the rights of the United States to explore and exploit the natural resources of the continental shelf.[215] The Dutch Government has similarly prevented the construction of offshore installations.[216] The Dutch legislation[217] was specifically aimed at the construction and operation of pirate radio stations. Based upon three separate legal arguments: the vacuum theory,[218] the protection of national interests, and the notion of contigu-

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[209]HERSHMAN, *supra* note 13, at 101.

[210]*Id.* at 103.

[211]*Cf.* North Sea Continental Shelf Cases, [1969] I.C.J. 3. Although the International Court of Justice did not rule on this point, *dicta* in the opinion has been interpreted to accord with this position. In the *Louisiana Superport Studies*, the authors interpret this *dicta* to indicate that the authority of the coastal state only extends to the exploration and exploitation of natural resources. HERSHMAN, *supra* note 13 at 102-103.

[212]*See* HERSHMAN, *supra* note 13 at 108; T. KANE, *supra* note 7, at 28-29; van Panhuys & van Emde Boas, *supra* note 5, at 337-38.

[213]423 F.2d 16 (5th Cir. 1970).

[214]*Id.* at 22-23.

[215]*Id.*

[216]*See* van Panhuys & van Emde Boas, *supra* note 5.

[217]North Sea Installations Act of December 3, 1964, [1964] STAATSBLAD 447. English translation of the text may be found at 60 A.J.I.L. 340-41 (1966).

[218]Van Panhuys & van Emde Boas, *supra* note 5, at 332-333. The vacuum theory is based upon the assumption that international law, and more particularly its rules concerning the freedom of the seas, may never be deemed to accord private persons or enterprises a right to create places not subject to the jurisdiction of any state. If structures are constructed upon the high seas, then a question arises regarding the legal rules governing the structure. To avoid a legal vacuum, any flag state or other state whose interests are likely to be affected has a right to extend its jurisdiction to such structures. In dealing with the pirate broadcasting facilities, the Dutch government argued that, as long as no international arrangement has been concluded regarding jurisdiction over all

ity,[219] the Dutch Government extended its jurisdiction over foreign nonextractive facilities attached to the continental shelf.[220] The practice of the Dutch Government supports the conclusion that the United States may prohibit the construction of mariculture facilities on the continental shelf.[221]

However, the converse, that the United States could permit a commercial mariculture activity, does not necessarily follow. An examination of some existing federal statutes may indicate probable limitations on United States authority in this area. The United States Government controls licensing of mineral extractive processes on the outer continental shelf. The Outer Continental Shelf Lands Act claimed the outer shelf to be subject to United States jurisdiction, control, and power of disposition.[222] Congress did not claim the right to exercise sovereign rights over the outer shelf.[223] Because of the limited nature of the federal claim, existing legislation as to the extent of the powers conferred upon government agencies must be strictly construed.[224] The Act gives the Secretary of the Interior authority to lease the outer shelf,[225] but mentions only oil, gas, sulphur, and other minerals in its dispositive provisions.[226] However, an argument can be made that the Secretary of the Interior has authority to lease lands for nonextractive purposes.[227] In leasing lands for such purposes, the United States would be taking unilateral action.[228] As indicated in the discussion of the high seas,[229] a

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fixed installations on the high seas, the nearest coastal state was also competent to extend the exercise of its jurisdiction to any installations on its continental shelf in order to prevent the continued existence of a legal vacuum thereon.

[219] *Id.* at 337.

[220] *Id.* at 337-38. The authors conclude "that the action taken was based upon a *new* rule of international law, which, summarized, provides that a coastal state may exercise jurisdiction over all installations erected on the soil of its continental shelf, no matter for what purpose." *Id.* at 338. However, this conclusion goes to the other aspect of the question; that is, whether the United States has the authority to regulate mariculture operations. This conclusion does not hold that United States would have authority to license the construction of a mariculture facility in the first instance.

[221] *See generally* van Panhuys & van Emde Boas, *supra* note 5.

[222] Outer Continental Shelf Lands Act, 43 U.S.C. § 1332(a) (1970).

[223] *Id.*; Stang, *supra* note 31, at 165-67.

[224] Stang, *supra* note 31, at 167.

[225] Outer Continental Shelf Lands Act, 43 U.S.C. § 1337(a)(1970).

[226] *Id.* §§ 1331-1343 (1970); Stang, *supra* note 31, at 187.

[227] *Compare* HERSHMAN, *supra* note 13, at 108 *with* Stang, *supra* note 31 at 187. Stang contends that:

> No executive agent of the U.S. Government has yet been given the authority to lease the outer Shelf for other purposes, including that of building a resort on Triumph Reef or Cortes Bank, or a Hydro-Lab or fish farm anywhere else on the Shelf.

Id. See also Outer Continental Shelf Lands Act, 43 U.S.C. § 1334(a) (1970).

[228] HERSHMAN, *supra* note 13, at 108.

[229] *See* p. 329 *supra*.

reasonableness standard would control actions taken by the United States.

2. Federal-State Authority

As discussed above,[230] international law recognizes the authority of the coastal state over its adjacent continental shelf. The Submerged Lands Act[231] transferred to the states jurisdiction over a portion of the continental shelf. The Act established title in the states to the beds of marginal seas extending seaward three geographical miles in width from their coast lines.[232] This conveyance was qualified by the control the federal government continued to exercise for navigation[233] and other purposes which included authority to prevent obstructions in the navigable waters of the United States. Therefore, the construction of a mariculture facility in the waters of the United States would have to be authorized by the Secretary of the Army.[234]

Georgia law currently permits the licensing of mineral exploration beneath the territorial seas. Formerly, the Mineral Leasing Commission had the authority to issue permits for the exploration and exploitation

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[230] *See* p. 337 *supra*.

[231] 43 U.S.C. § 1301 *et seq.* (1970).

[232] *Id.* §§ 1311-1315.

[233] *Id.* § 1311(d).

[234] *See* Rivers and Harbors Act, 33 U.S.C. § 403 (1970).

> The creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is prohibited; and it shall not be lawful to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty or other structure in any port, roadstead, haven, harbor, canal, navigable river or any other water of the United States, outside established harbor lines or where no harbor lines have been established, except on plans recommended by the Chief of Engineers and authorized by the Secretary of the Army.

Although the United States Coast Guard has primary responsibility for safety of navigation, 14 U.S.C. § 2 (1970), the United States Army Corps of Engineers is charged with the responsibility for issuing permits for installations in United States waters. 33 U.S.C. § 403 (1970. With respect to mariculture facilities, the Coast Guard may promulgate regulations with respect to lights and warning devices. As indicated by the Rivers and Harbors Act, the Army Corps of Engineers has primary responsibility with respect to any obstruction to navigation. A Department of the Army pamphlet, *Permits for Work in Navigable Waters*, outlines the policy guidelines followed by the Army Corps of Engineers in granting permits:

> The decision as to whether a permit will be issued must rest primarily upon the effect of the proposed work on navigation. This includes authority to deny any application of a proposed structure obviously not designed to withstand wave action or other forces and may collapse and create hazards to navigation. The Corps of Engineers cannot effect the location of structures except that permits may be denied if it appears that they will be so located as to unreasonably obstruct navigation. However, in cases where the structure is unobjectionable from the standpoint of navigation, but when State or local authorities decline to give their consent to the work, it is not usual for the Corps of Engineers to issue a permit . . .

of submerged lands.[235] Under the Governmental Reorganization Act of 1972, the State Properties Control Commission is not responsible for all functions formerly performed by the Mineral Leasing Commission.[236] The Commission has authority to lease to any person the mineral resources located on State owned lands. The terms and conditions of the lease shall include, but not be limited to, the exclusive right to drill, dredge, and mine for mineral resources and to produce and appropriate any and all of same.[238] As the statute indicates, the State Properties Control Commission does *not* have the authority to lease submerged lands for nonextractive uses.[239]

III. SUMMARY

Coastal nations have regulated activities in ocean areas more than three miles seaward. However, coastal nations have not authorized new uses unrelated to exploitation of natural resources.[240] Current international law neither permits or prohibits a coastal state from permitting construction of a mariculture facility in an area beyond its territorial waters.[241]

During the interim until changes in the Law of the Sea Convention are adopted, the position of the United States regarding nonextractive uses in the area beyond three miles remains unsettled. Congress could amend the Outer Continental Shelf Lands Act to expressly provide for the leasing of the seabed for nonextractive uses, such as mariculture. However, any such an amendment would expand the quantum of authority that the United States exercises over the area beyond its territorial sea. In the Outer Continental Shelf Lands Act and in subsequent legislation, the Congress has been particularly sensitive to not claiming

[235][1965] Ga. L. 590, 591, *as amended* GA. CODE ANN. § 40-3561 (Supp. 1973).

[236]GA. CODE ANN. § 40-3561 (Supp. 1973).

[237]GA. CODE ANN. § 91-110a(b) (Supp. 1973).

[238]GA. CODE ANN. § 91-110(a)(b)(1)-(2) (Supp. 1973).

[239]See discussion of the principle *exclusio unius est exclusio alterius, supra* note 208. The Georgia State Games and Fish Commission can lease to any citizens of Georgia or any Georgia firm or corporation portions of the oyster beds or bottoms. GA. CODE ANN. 45-907 (1957). No lease shall issue unless the person, firm or corporation has demonstrated to the commission willingness, ability and intention to comply with the laws and regulations governing oyster bed cultivation. *Id.* The authors feel the principles of statutory construction used in Macon v. Walker, 204 Ga. 810, 57 S.E.2d 633 (1949) may be applied to the oyster bed leasing statute. This construction would limit the authority of the Georgia State Game and Fish Commission to leasing submerged land only for the purpose of oyster cultivation and would not extend to leasing for other forms of mariculture.

[240]Knight, *Non-Extractive Uses of the Seabed*, 6 MARINE TECHNOLOGY SOCIETY Journal (No. 3) 18 (1972).

[241]HERSHMAN, *supra* note 13, at 114.

sovereignty over this region.[242] The legislative history of the Marine Protection, Research and Sanctuaries Act of 1972 demonstrates the limits of authority claimed by the United States. Title III of the Act deals with the establishment of marine sanctuaries in waters beyond the three mile limit. The Senate Commerce Committee initially rejected this title because the range of domestic authority beyond the territorial sea was narrow, the sovereign rights that the United States exercises over the resources of the resources of the continental shelf do not extend to the superjacent waters and United States jurisdiction does not extend to foreign citizens in high seas areas.[243] The Commerce Committee felt that narrow geographical claims were in the best interests of all maritime nations.[244] The Committee on Conference adopted language reflecting these concerns. The Marine Protection, Research and Sanctuaries Act, as adopted, limits the application of United States jurisdiction to foreign citizens and ships. The federal regulations will be applied only in accordance with recognized principles of international law.[245] In light of this legislative background, the Congress may be reluctant to assert greater United States authority over the area beyond three miles.

This analysis indicates that Georgia could, under authority of an appropriate state mariculture statute, lease lands between the low-water line and a point three miles seaward for nonextractive uses. International law recognizes the qualified sovereignty a coastal nation exercises over both the continental shelf and territorial waters. Nations have the authority in the ocean area within three miles of their coast to permit mariculture activities on the ocean floor and in the adjacent waters. In the Submerged Lands Act, the United States Government conveyed much of its claim over the continental shelf and the superjacent waters to the various states. The State of Georgia can exercise authority over activities in this area subject to competing national and international navigational rights and to the authority over navigation exercised by the Army Corps of Engineers.

The 1974 United Nations Conference on the Law of the Sea will expressly consider the question of jurisdiction over nonextractive uses of the seabed and adjacent water column. Presumably, that conference will reach a conclusion on this question.

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[242]Comment, *Continental Shelf Law: Outdistanced by Science and Technology*, 31 LA. L. REV. 108, 114-18 (1970).

[243]S. REP. No. 451, 92d Cong., 2d Sess. 8-9 (1972).

[244]*Id.* at 9.

[245]Marine Protection, Research and Sanctuaries Act of 1972, § 302(g), Pub. L. 92-532, 86 Stat. 1052 (1972).