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Open Ocean Aquaculture

***209** DEFINING THE FEDERAL ROLE IN OFFSHORE AQUACULTURE: SHOULD IT FEATURE
DELEGATION TO THE STATES?

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I. INTRODUCTION

Improvements in the science and technology of marine aquaculture, the growth in multiple use conflicts in nearshore coastal waters, and the overfished condition of many commercially exploited fish stocks suggest it may be time to consider using open ocean waters for raising marine species for food and other uses. As on previous occasions when similar signs pointed toward aquaculture, policy makers recognize that the legal framework for government involvement is not well-equipped to respond to many of the issues that surround sea farming in the offshore environment.

The purpose of this Article is to describe some of the important attributes of an effective legal framework for open ocean aquaculture and to discuss the ability of federal agencies to provide these attributes under current law. Part II outlines the legal and regulatory barriers to the development of aquaculture in the United States, and the elements of an improved government framework for aquaculture are described in Part III. Next, Part IV discusses the roles of state and federal agencies in the *210 aquaculture permit process. Part V reviews the key provisions of proposed federal legislation for management of aquaculture in the federal 200-mile Exclusive Economic Zone (EEZ), and finally, in Part VI, a proposal is offered for an alternative system of state-based management with federal oversight and coordination.

II. OVERVIEW OF THE ISSUES IN AQUACULTURE REGULATION

Commentators have noted the legal and regulatory barriers to aquaculture development in the United States for at least the past twenty years. [\[FN1\]](#) The constraints generally attributed to legal and institutional factors include costs in time, expense of applications, and uncertainty, all of which may discourage entrepreneurs and scare off investors and banks. [\[FN2\]](#) The National Research Council (NRC) found in 1978, for example, that the procedures required to obtain permits and licenses "have been a severe deterrent to aquaculture." [\[FN3\]](#) The major problems relate to the lack of uniformity of laws in different states, the difficulty of obtaining concise lists of the legal requirements within a given state, and the difficulty in obtaining the many permits and licenses. [\[FN4\]](#)

The NRC study also concluded, however, that while some laws and regulations may reduce aquaculture's economic potential, aquaculture development "may also be constrained by the absence of laws." [\[FN5\]](#) It noted that laws provide many forms of government assistance to terrestrial but not aquatic farmers in the form of low-interest loans, technical advisory services, and even commodity price guarantees. [\[FN6\]](#) Moreover, in the absence of an effective legal framework, sea farmers lack even the basic *211 security of ownership if they use public waters for all or part of their operations. [\[FN7\]](#)

Aquaculture is heavily affected by public laws because it involves many things that modern governments are concerned with: food production, water supply, the use of navigable waters, and environmental protection. Thus, agencies become part of the

aquaculture legal maze if they are concerned with food safety, public health, water quality, or land and water conservation. [\[FN8\]](#) Moreover, concern for these issues occurs at all three levels of American government: federal, state, and local. What appears to be redundancy is really a manifestation of the fact that American governmental power is often exercised at three different levels with each level believing it has a special responsibility or interest to protect.

Some of the ways in which the law may present obstacles to aquaculture include:

- (1) the limited availability of property rights or other interests that can secure a producer's investment;
- (2) poorly defined standards that fail to reduce conflicts among competing users of public resources;
- (3) poorly defined agency jurisdictions leading to delays in defining applicable standards or regulations;
- (4) the existence of redundant regulations due to overlapping agency responsibilities; and
- (5) inappropriate restrictions designed to protect wild stocks. [\[FN9\]](#)

*212 A. Security of Tenure

The single most significant question one must ask about any legal framework affecting marine aquaculture is: how secure is the interest that the sea farmer receives from the government? For the interest to function as a property interest it should have some or all of the following attributes: transferability, duration and renewability, and revocability only for failure to perform specified conditions. [\[FN10\]](#) These conditions, however, are not present in many existing regulatory systems.

In Massachusetts, for example, where the state and local governments issue licenses for marine aquaculture instead of leases, court decisions suggest that when the above features are not present in a license, the kinds of shellfish licenses issued under current state law do not convey sufficient interest to create a property right that the holder can defend in court or use to recover damages. [\[FN11\]](#)

On the other hand, when the government seeks to create private interests in tidal lands or waters through an exclusive lease or license, special legal principles designed to protect public uses known as public trust rights can come into play. [\[FN12\]](#) These public property interests must be balanced against the sea farmer's needs for a secure interest in the cultured species and for protection against damage from other activities. [\[FN13\]](#)

*213 Legal differences between the lease and license forms of tenure must be considered carefully. The lease has certain advantages over a license in terms of security of tenure. [\[FN14\]](#) Even a lease, however, cannot convey to the sea farmer permanent, exclusive control of an area of the ocean. [\[FN15\]](#) The public property rights and other principles mentioned above prevent the conveyance of exclusive private use rights to submerged lands or waters in perpetuity. States that use the lease form to secure tenure make the sea farmer's use subject to public and private riparian rights and to government oversight. [\[FN16\]](#) To improve the security of this interest, governments can provide for criminal sanctions and a civil right of action against individuals who violate the sea farmer's rights as lessee of the sea bed and water column. [\[FN17\]](#) The public rights of navigation and fishing must be protected in the leasing system, which means the process by which the government conveys a lease to the sea farmer is also critical to the security of the interest conveyed.

B. Use Conflicts

Even when the sea farmer's lease or license is backed by criminal sanctions against persons damaging or interfering with the farm, this alone cannot ensure peaceful co-existence among all users of the marine environment. [\[FN18\]](#) It is crucial, therefore, that the government's process for issuing the lease or license itself protects the sea farmer from conflicts with other marine uses. The statute authorizing the conveyance of a lease of public waters or submerged lands for aquaculture should identify other public and private uses of the marine environment that are potentially affected by aquaculture activities. It should then provide a fair but efficient process for information to be brought forward about those uses in the area proposed

for use as a sea farm, allowing the leasing agency to make a balanced and informed decision in which other users believe they have been fairly considered. The adverse consequences for the sea farmer of a licensing process that fails to consider other uses can include serious ***214** use conflicts. For example, the failure of town officials to consider conflicts with riparian owners' use rights in licensing shellfish farms off Cape Cod led to judicial decisions that may adversely affect sea farming opportunities in that state. [\[FN19\]](#)

The New England Fishery Management Council's recent difficulties with the approval of an amendment to the Atlantic Scallop Fishery Management Plan (FMP) to allow an experimental scallop aquaculture project illustrates the problems that arise if the approval agency is unfamiliar with the needs of new sea farming operations and is not subject to deadlines for its decision. It demonstrates also the need for the authorizing statute to make clear who has the burden of proof to come forward, and when, on the issue of potential conflicts. [\[FN20\]](#)

The Maine aquaculture leasing law, by contrast, requires a formal adjudicatory hearing before a lease can be issued. [\[FN21\]](#) While sometimes time-consuming and contentious, the process does ensure that potentially conflicting uses are given an opportunity to be heard and their interests balanced against those of the prospective sea farmer. This gives the government's issuance of a secure tenure more legitimacy once it is finally approved. [\[FN22\]](#)

***215 C. Agency Coordination**

The question of fragmentation and overlapping agency mandates has two sides. An apparently redundant regulatory requirement may actually serve a useful purpose. Sometimes, an overlap in agencies' jurisdiction can improve the security of the interest the sea farmer obtains when it signals that an agency with a different constituency has accepted an aquaculture project both in principle and in reality. The object should be to provide the sea farmer with the advantages of obtaining the blessing of multiple agencies without imposing heavy costs in time and money to obtain them.

Regulatory and reviewing agencies have considerably more latitude and discretion in coordinating their reviews than is often apparent. A modest effort to cooperate among state and federal agencies in Maine involves a single application, [\[FN23\]](#) but still relies on separate reviews and criteria. Nevertheless, the agreement has been described as a break-through in administrative agency cooperation. [\[FN24\]](#) Much more is possible in the way of reducing separate permit reviews and procedures, without compromising agency responsibilities.

A final consideration is whether the legal framework provides a speedy mechanism for exempting aquaculture from regulations that are designed to conserve wild fish stocks. [\[FN25\]](#) If a government agency has authority to waive season, size limits, and other measures, what procedures must it follow? These decisions should not have to be made by the legislature and preferably not on a case-by-case basis. Each time a special waiver or exemption is necessary, the opportunity for opposition and political pressure exists. [\[FN26\]](#) It would be especially inappropriate if the waivers had to be approved by a marine fisheries advisory council, as capture fishermen are likely to oppose ventures they may perceive as producing competition for limited fishing grounds or seafood markets. ***216** This consideration should be weighed very heavily in decisions whether to encourage the expanded role of the federal regional fishery management councils in EEZ aquaculture decisions, notwithstanding the probable legal jurisdiction of the National Oceanic and Atmospheric Administration to consider proposed sea farms under the Magnuson Act. [\[FN27\]](#)

III. ELEMENTS OF AN IMPROVED GOVERNMENT FRAMEWORK FOR AQUACULTURE

Actions and policies that government can take to address the issues outlined above are described in a set of recommendations developed by the Marine Law Institute. [\[FN28\]](#) These actions would improve the security of tenure and the coordination of state and federal regulatory frameworks, both of which would help the development of an offshore sea farming sector. The

following recommendations are equally relevant to aquaculture policies for state and federal marine waters:

- (1) the responsible government agency should identify marine zones favorable to sea farming and consistent with desired environmental conditions and potential use conflicts; [\[FN29\]](#)
- (2) all state and federal permits and leases should share a common application procedure, siting criteria, site evaluation and monitoring protocols; [\[FN30\]](#)
- (3) aquaculture leases (or licenses) should convey an exclusive property interest in the cultured species as well as in the right to harvest it from the leased area, as far as it is consistent with public rights of navigation and fishing, to secure the sea *217 farmer's investment against negligence, theft and vandalism, and to allow for civil causes of action against persons who interfere with or damage aquaculture facilities; [\[FN31\]](#)
- (4) state and federal agencies should adopt memoranda of understanding on coordinating enforcement, research and technical assistance; [\[FN32\]](#)
- (5) maximum acreage limitations should not apply to contracts, joint ventures, or partnerships between small-scale sea farmers and larger aquaculture companies so that cooperative arrangements can be implemented; [\[FN33\]](#)
- (6) government agencies should provide priorities in licensing or leasing to fishermen displaced by conservation restrictions on the capture fisheries as an appropriate non-discriminatory means of promoting local economic benefits from sea farming; [\[FN34\]](#)
- (7) sea farm applicants should be encouraged to enter into private agreements with local fishermen's organizations, cooperatives or community groups for work in the sea farming operation, to prevent use conflicts and promote local economic benefits and acceptance of sea farms; [\[FN35\]](#)
- (8) agency public hearing procedures should balance the due process rights of sea farm leaseholders with the public right of participation in decisions affecting public resources, and should be formal enough to exclude interventions not relevant to the licensing decision but not so formal that small-scale sea farm applicants are faced with prohibitive application costs; [\[FN36\]](#)
- (9) public and private efforts should work to create an insurance pool to compensate sea farmers for losses due to product destruction or water impoundment orders to protect public health; [\[FN37\]](#) and
- (10) state and local licensing authorities should adopt license-by-rule procedures for small-scale and experimental farming, *218 with reduced application requirements and expedited procedures. [\[FN38\]](#)

IV. IMPLICATIONS FOR THE FEDERAL ROLE IN OFFSHORE AQUACULTURE

In 1992, the National Research Council's (NRC) Marine Board recommended the federal government take a more active role in assisting the development of offshore aquaculture to avoid the many conflicts encountered by sea farms operating in nearshore waters. [\[FN39\]](#) The report noted that one of the many problems with the move offshore was the lack of federal regulations governing the EEZ. [\[FN40\]](#)

When American Norwegian Fish Farm, Inc. proposed a large-scale net-penned salmon farm in a permit application to the U.S. Army Corps of Engineers for a site approximately fifty miles east of Gloucester, Massachusetts, [\[FN41\]](#) two things became apparent. Federal agencies and others interested in the marine environment quickly realized that people were in fact willing to site facilities further offshore. [\[FN42\]](#) The federal legal framework, however, was not prepared for the number of concerns that such facilities presented. [\[FN43\]](#) The project consisted of ninety floating salmon pens, attached in groups of ten to a series of nine barges, each thirty meters in length, anchored to the continental shelf at a single mooring point. [\[FN44\]](#) The facility was designed to swing with the tides and currents around the anchor point. [\[FN45\]](#) It was estimated that the project would require *219 exclusive use of an area approximately fifty square nautical miles in the EEZ. [\[FN46\]](#)

A committee convened at the time by the Office of Technology Assessment (OTA) to consider policy options for EEZ aquaculture concluded that a simple leasing program without royalty payments was appropriate given the limited profits that could be expected. [\[FN47\]](#) The OTA committee also suggested that Congress consider working collaboratively with the

coastal states in developing a program to promote orderly development in the EEZ, given that some facilities were likely to be sited in places where federal and state jurisdiction coincide. [\[FN48\]](#) At the same time, the NRC's Marine Board similarly concluded that the federal government should create an orderly framework for the development of EEZ aquaculture and should encourage coastal states to adopt and implement state aquaculture development and management plans. [\[FN49\]](#)

An orderly framework was not created, however, nor was a federal-state partnership pursued in time to deal with this first major offshore proposal. What followed, unfortunately, was an after-the-fact effort by federal agencies to determine their powers and responsibilities, much of it happening after the Army Corps issued and then withdrew a permit. [\[FN50\]](#) The permit was apparently withdrawn when the Conservation Law Foundation of New England challenged the Corps' refusal to prepare an environmental impact statement for a project beyond twelve miles. [\[FN51\]](#)

The Department of State raised questions as to the project's effect on the United States international law of the sea and fisheries policies and obligations and the ability to regulate such a facility under existing federal law. [\[FN52\]](#) The NOAA Office of General Counsel concluded that the proposed farm would constitute "fishing" under the Magnuson Act because it would *220 involve harvesting fish from the EEZ by U.S. vessels. [\[FN53\]](#) The regional fishery management councils therefore had the authority to manage aquaculture in the EEZ and would need to amend existing fishery management plans to prevent restrictions on harvesting of cultured species. [\[FN54\]](#) NOAA contended, in fact, that it has a strong statutory basis for the promotion and regulation of marine aquaculture, supported by a history of public and private-sector research and development, and is thus the federal agency "best suited to regulate and oversee aquaculture activities that affect marine ecosystems." [\[FN55\]](#)

NOAA is not at present the lead or even the major federal agency in aquaculture regulation. Federal authority centers largely around the Army Corps' permit decision under the Rivers and Harbors Act, [\[FN56\]](#) as amended by the Outer Continental Shelf Lands Act (OCS), [\[FN57\]](#) and the Corps' "public interest review." [\[FN58\]](#) This review entails a balancing of all the reasonably expected benefits and detriments to the public interest, including environmental, economic, aesthetic, navigation, property rights, and international interests. [\[FN59\]](#) The Environmental Protection Agency (EPA) asserts regulatory authority as well under the Clean Water Act [\[FN60\]](#) over discharges from aquaculture facilities as "concentrated aquatic animal production facilities." [\[FN61\]](#) Other federal agencies, including NOAA's National Marine Fisheries Service, and the Fish and Wildlife Service, have an opportunity to review and comment on any permit proposed for issuance by the Corps or EPA for impacts on navigation and marine wildlife and habitats. [\[FN62\]](#) Federal leasing of portions of the seabed beyond state waters for aquaculture is not presently possible under the Outer Continental Shelf Lands Act. [\[FN63\]](#)

*221 States also play a role in the federal permit process. In addition to state water quality certification of proposed federal discharge permits required under the Clean Water Act, [\[FN64\]](#) the Coastal Zone Management Act [\[FN65\]](#) makes any federal license or permit for activities affecting any land or water use or natural resources of the coastal zone subject to state review for consistency with the enforceable policies of a state's approved coastal zone management program. [\[FN66\]](#) A state can reject a sea farm applicant's consistency certification if the proposed activity conflicts with an enforceable law or policy included within the state's approved program. [\[FN67\]](#) If the state objects, the permit or license may not be issued, unless the Secretary of Commerce reverses the decision. [\[FN68\]](#) Few states at present have enforceable laws and policies for aquaculture within their approved management programs necessary to take full advantage of this process. Massachusetts, however, sees the federal consistency requirement as an opportunity to increase its ability to encourage the development of marine aquaculture and to increase the efficiency of the regulatory process. [\[FN69\]](#) In its recent Strategic Plan for aquaculture, the Commonwealth notes that it plans to assert consistency review over offshore aquaculture proposals. [\[FN70\]](#)

While the process for obtaining an individual permit from the principal federal agencies is lengthy and its outcome uncertain,

both the Corps and the EPA have the authority to issue a general permit under their respective regulatory authorities. [FN71] The general permit is a mechanism *222 for granting authority to a class of regulated activities that eliminates the need for an individual permit, provided the activities are below specified size or degree of impact thresholds. [FN72] Both the EPA and the Corps could in theory issue a general permit for ocean aquaculture facilities that employ common culture methods, design features, and other factors, and subject them to standard permit conditions and monitoring protocols. The Corps uses a State Programmatic General Permit [FN73] for approving small-scale sea farms in Massachusetts, in essence "piggy-backing" on state permit approvals. Additionally, the State of Massachusetts has plans to increase the coverage of the general permit to allow even further regulatory efficiencies. [FN74]

The EPA has yet to issue a general permit for marine aquaculture. It has used the mechanism in the past for marine activities, issuing in the 1980s a general permit to all offshore exploratory drilling rigs, after the EPA finally accepted that its regulatory authority under the Clean Water *223 Act applied. [FN75] The case of ocean aquaculture is different from the OCS drilling permit, however, because the EPA was faced with hundreds of existing discharges from drilling operations in the Gulf of Mexico and elsewhere. Open ocean aquaculture operations are only in the planning stages. [FN76] The EPA does not face the same permit burden and thus does not have the same incentive for adopting a general permit to facilitate EEZ aquaculture. While the Corps and other agencies are under some pressure to reduce regulatory burdens and to streamline their operations, [FN77] it is not clear whether they are willing to reduce their authority in deference to another federal agency, such as the National Marine Fisheries Service or the Regional Fishery Management Councils, on this particular class of activities.

In fact, jurisdiction over aquaculture seems to be a sore point with some federal agencies at present. The memoranda on agencies' jurisdiction written at the time of the American Norwegian Fish Farm, Inc. project, [FN78] as well as the more publicized debates over the Department of Agriculture versus the Department of Commerce as the appropriate lead federal agency, [FN79] suggest that a "turf battle" among agencies may be well underway. While not unusual in environmental and natural resources policy, these battles strain resources and tend to work against the public interest in the long run. This leads to the question of what the above considerations and recommendations suggest when considering the need for new federal legislation for offshore aquaculture.

*224 V. PROPOSED FEDERAL LEGISLATION ON EEZ AQUACULTURE

Many of the above issues are reflected but not effectively resolved in the Senate bill, S. 1192, introduced as the Marine Aquaculture Act of 1995 on behalf of NOAA in 1995 by Senators Kerry, Pell and Inouye. [FN80] For example, the Congressional findings state that the reason private industry has not invested in and developed marine aquaculture facilities within the U.S. is in part because "our marine waters are not susceptible to private ownership and because our marine waters also support other public trust uses, including navigation, fishing, recreation, and national defense." [FN81] Because marine aquaculture presents "several environmental challenges requiring specialized scientific research and regulatory programs," [FN82] the bill finds that "incorporating environmental concerns in the development of marine aquaculture will enhance the prospects of an economically and environmentally sustainable industry." [FN83]

The bill would declare it a federal policy "to ensure that the placement of any new marine aquaculture facility within a state coastal zone, the territorial sea, or the United States exclusive economic zone, is economically and environmentally sound and does not pose unreasonable constraints on other public trust uses of marine waters, such as navigation, fishing, recreation, and national defense." [FN84] The following discussion considers the bill in light of the three major considerations identified in Part II above: security of tenure, agency coordination, and use conflicts. [FN85]

A. Security of Tenure

The proposed marine aquaculture act would create a new federal permit requirement for offshore sea farms. It prohibits anyone from owning, constructing, or operating an offshore marine aquaculture facility *225 except under a permit issued by the Secretary of Commerce. [FN86] The Secretary is authorized to issue permits allowing the ownership, construction or operation of an offshore marine aquaculture facility for up to ten years, renewable upon expiration. [FN87] The section makes it clear that once the facility obtains a permit, the physical structure, the organisms stocked within it, and any business interests in the offshore facility can be privately owned by the permittee, but the area of ocean used remains in public ownership, with only a revocable use permit being granted. [FN88] The permits may be revoked for substantial violations of either the permit conditions or the Secretary's regulations. [FN89] The permits can be transferred, and permit fees are limited to the costs of administering the permit program. [FN90]

The bill defines "offshore marine aquaculture facility" as any facility which is located in whole or in part in the U.S. EEZ, the purpose of which is to raise, breed, grow, or hold in a living state any marine or estuarine organism. [FN91] It states that any vessel or other floating craft used in an offshore facility or that discharges any material into an offshore facility is not a vessel for the purposes of the Clean Water Act; any discharge of material directly into the waters of the facility or from the facility into the surrounding waters shall be considered a point source under the CWA. [FN92] The intent is to remove any uncertainty and make clear that these facilities and the vessels involved with them are covered by the federal general discharge permit program if they involve a discharge of a pollutant, including presumably discharges of food pellets and antibiotics.

A question remains as to whether the proposed permit offers sufficient security of tenure for the sea farmer. The permit is transferable, renewable, and revocable only for cause and thus provides some of the minimum features. A sea farmer, however, needs an interest that can be defended against damage or interference; [FN93] a revocable permit or license *226 at best conveys only a usufructory interest. [FN94] A usufruct is from Roman and civil law and is the right of using and enjoying all the advantages and profits of the property of another without altering or damaging the substance. [FN95] The alternative to a permit is a lease, the mechanism used in the Outer Continental Shelf Lands Act [FN96] to convey to private companies rights to explore for and develop oil and gas resources from the seabed, and by the State of Maine for aquaculture in state waters. [FN97] Leases can be structured to allow cancellation upon violation of conditions designed to protect public uses and values. While issuing a permit rather than a lease allows the agency to use the informal notice-and-comment process, a permit is not likely to provide a legal basis for a sea farmer to bring an action in federal court for interference. [FN98] The choice of a permit over a lease may have more to do with the public relations of aquaculture than with administrative convenience. Leases are better for the sea farmer, but they may be viewed with more suspicion by those who engage in traditional fisheries and feel threatened by new marine resource activities in the ocean. [FN99] If a permit is to be used, the bill should support the sea farmer's interest through federal prohibitions and sanctions against interference. [FN100]

B. Agency Coordination

Before the Secretary of Commerce may issue the permit under the proposed bill, many other agencies have an opportunity to add conditions to it. The Coast Guard, the EPA, the Secretary of the Interior, the appropriate regional fishery management council, the Defense Department, and the Governor of each state adjacent to the proposed facility's site (or which would be ecologically affected by permit activities), whose *227 state has an approved coastal zone management program, must have at least 90 days to review the application. [FN101] Each of these officials must certify that the activities to be permitted would comply with the laws they administer. [FN102] If they cannot so certify the Secretary must attach conditions to the permit which the agency or Governor submits would ensure compliance. [FN103] This review process allows agencies like the Corps and the EPA to attach conditions for compliance with the Rivers and Harbors Act and the Clean Water Act. The bill, however, does not exempt sea farms in the EEZ from the requirement to obtain separate permits under these two acts.

The Secretary's criteria for issuing the permit include a determination that the activities would comply with environmental standards. [\[FN104\]](#) The Secretary is given two years to develop standards, [\[FN105\]](#) and must address a host of considerations, including genetic mixing of cultured and wild stocks, the introduction of non-indigenous species, transmission of diseases, federal water quality standards, ecologically sound predation control measures, and other measures to protect the marine environment. [\[FN106\]](#) The Secretary is required to conduct a pilot project and use information from it to revise these environmental standards if significant new information is obtained on the environmental impacts. [\[FN107\]](#)

Given that the Corps and EPA also have responsibility for these environmental considerations, the bill appears to create a redundant role for NOAA as representative of the Secretary of Commerce, unless the intent is to eliminate the need for the permits under the EPA and Corps. That intent, however, is not apparent in the text of the bill. [\[FN108\]](#) While a process for interagency consultation is provided, the bill can be faulted for failing to go further in streamlining the federal regulatory requirements. The permit a sea farmer must obtain under section 6, even though it is reviewed and conditioned by other agencies, does not eliminate the need for a permit under either the Rivers and Harbors Act or the Clean Water *228 Act, nor provide an exemption from potentially applicable fisheries regulations issued by the Magnuson Act's regional management councils.

In Section 7 on Model Environmental Guidelines, [\[FN109\]](#) the bill's drafters apparently intended to influence environmental regulation by the states through guidelines established by the Secretary. The Section fails, however, to take advantage of the ability of states to coordinate regulatory oversight of marine and coastal activities. Some states have become quite effective in this regard, [\[FN110\]](#) probably due in large measure to the federal funding of coastal management programs. Section 7 requires the Secretary of Commerce to prepare model guidelines in consultation with other appropriate federal and state agencies for aquaculture facilities located within State waters. [\[FN111\]](#) The guidelines are to include "best management practices" to minimize the potential damage to the marine ecosystem, [\[FN112\]](#) minimize "visual pollution" and other interference with public trust uses of the ocean, [\[FN113\]](#) and ensure that predation control efforts for cultivated stocks are ecologically sound. [\[FN114\]](#) The Secretary is directed to develop a program to encourage voluntary compliance with the guidelines by the marine aquaculture industry. [\[FN115\]](#) After development, the Secretary is to submit the guidelines to the state coastal zone management agencies and other federal and state agencies involved in either marine aquaculture or other coastal and marine resources for possible incorporation into state aquaculture programs or permitting processes. [\[FN116\]](#)

Section 7 aims to improve state regulatory decisions through recommended standards and guidelines. No incentive, however, is provided for states to adopt such measures, although the ability to offer a streamlined regulatory process, focused on state reviews that adhere to certain federal standards and guidelines, could be a powerful one and a very attractive prospect for potential sea farmers. Sea farms necessarily require an *229 offshore staging area or base of operations to support the offshore farming activities. It seems to make sense for the state in which this base is located and which is adjacent to the offshore waters used by the farm, to exercise oversight of the sea farm's offshore activities, following certain federal guidelines and minimum standards. [\[FN117\]](#)

C. Use Conflicts

In an effort to prevent use conflicts the proposed bill relies on criteria for the federal permit that the project will not significantly interfere with "other" public trust uses of the ocean, [\[FN118\]](#) nor interfere with facilities previously permitted; [\[FN119\]](#) and that the permittee will remove or properly dispose of the facility if the permit is revoked or surrendered [\[FN120\]](#) and has posted a bond or other assurances to pay for all costs associated with the facility's removal. [\[FN121\]](#) To determine if the potential for use conflicts exists, the bill relies on the standard notice-and-comment process and review by other agencies. [\[FN122\]](#) The bill, however, does not take advantage of the many new regional, consultative and oversight procedures used in federal marine sanctuaries and under state and provincial marine resources laws. [\[FN123\]](#) These regional committees and

advisory councils get competing *230 users involved early in the process and would give sea farmers a greater chance to address potential opposition and resistance from other uses and interests. In Nova Scotia, for example, regional aquaculture boards are charged with bringing together many points of view and stakeholders to facilitate the often controversial siting process. [FN124] The proposed Senate bill allows for the creation of marine aquaculture advisory and review panels, but it uses them only in assisting with the administration of the research and development grant program that the bill would create. [FN125]

Furthermore, the bill creates some ambiguity with respect to the position of aquaculture vis-à-vis other uses of the marine environment. It refers to interference with "other" public trust uses that must be avoided, [FN126] suggesting that aquaculture is among these public use rights. If this is the intent, then this status may be contrary to some state law. For example, in *Pazolt v. Division of Marine Fisheries* [FN127] the Massachusetts Law Court decided that aquaculture is not fishing and is therefore not one of the protected public trust rights. [FN128] The proposed bill fails to mention whether priority is to be given to existing uses regardless of their nature or impact on the ocean, and fails to provide a standard by which to judge claims of potentially significant interference.

Finally, what is most interesting about the bill is that it conveys no sense of the current attitude in Washington, D.C. and elsewhere concerning federal regulation. The reduction in federal involvement is already apparent in the marine resources field with the 1996 announcement by NOAA that it was withdrawing several fishery management plans for *231 fisheries it believes can be better managed by states or interstate commissions. [FN129]

In view of these criticisms of the bill, the following discussion offers an alternative model for regulating open ocean aquaculture.

VI. A PROPOSAL FOR STATE-BASED, REGIONAL MANAGEMENT OF AQUACULTURE IN THE EEZ

An alternative to the Senate bill's approach would essentially reverse the roles of federal and state agencies, giving federal agencies a consistency review to prevent navigational conflicts and possible national security problems in permits or leases issued by a coastal state. Instead of NOAA issuing the permit and receiving consistency certifications or proposed conditions from other federal agencies, a state with a federally-approved aquaculture management program would do so. The idea is to delegate federal oversight and regulation of offshore aquaculture facilities to the adjacent coastal state, if that state has adopted a comprehensive program for the management and oversight of marine aquaculture.

Each federal agency that presently asserts regulatory jurisdiction has some capacity to delegate its power to a state agency, either through express provisions like the Clean Water Act's section 402(b) [FN130] (although limited to navigable waters within the state's jurisdiction) or through administrative measures such as the Corps' state programmatic general permit. [FN131] The full delegation may require amendments to the federal laws to make clear under what conditions federal delegation would be acceptable. Absent such amendments, the details of the delegation could be worked out by interagency agreement among the Army Corps, EPA, the Coast Guard, and NOAA, on the coordination and delegation of their responsibilities to the state.

Generally, in the past, these voluntary delegations of federal responsibility have been difficult to carry out. For example, states have not had *232 much success in achieving a return of management responsibility for marine mammals under Section 109 of the Marine Mammal Protection Act, [FN132] and it remains to be seen if states cooperate sufficiently in the interstate fisheries management process envisioned in the federal FMP withdrawal. [FN133] What may be more feasible in the aquaculture context is a partnership for management, much like the more recent national marine sanctuary programs that involve both federal and state waters, e.g., the Florida Keys and Monterey Bay. [FN134]

A memorandum of understanding or interagency agreement could be the vehicle for coordinating these federal delegations. The memorandum could include guidelines for state programs that are very general rather than include a level of detail like that under the Clean Water Act's Section 402 [FN135] or the Marine Mammal Protection Act's Section 109 delegations, [FN136] but with sufficient detail to ensure that the states will meet the public trust obligations and protect other uses. The state program for managing offshore aquaculture could be reviewed by the agencies before operating in the EEZ. This could occur through the submission of an amendment to the state's approved coastal zone management program. [FN137] Funds are now available under the 1996 reauthorization of the Coastal Zone Management Act for states to develop strategic plans for marine aquaculture. [FN138] These funds could be used to develop a state-based EEZ management framework as well as one for state waters.

Furthermore, the development of these program changes could be guided by new criteria agreed upon by the three delegating agencies and published by NOAA. The criteria could include many of the items *233 identified in the Senate bill's Section 7, on Model Environmental Guidelines. [FN139] The difference would be that once the state program for offshore aquaculture is reviewed and approved, the other federal agencies would waive their ability to review individual applications, or would have a very limited time to come forward with very specific concerns. The federal responsibilities to protect public rights and environmental quality would be carried out by the state under the approved program. Once the Secretary approves the state's program change, the state could then use the federal consistency provision to ensure federal agencies abide by the coordinated regulatory process contained in the program.

Any serious proposal for delegating offshore regulatory jurisdiction to coastal states must consider where to draw the boundaries between the states, particularly in New England where several states have coastlines that front the same offshore waters. While a full treatment of this question is beyond the scope of this Article, it should be noted that the issue of establishing lateral seaward boundaries is not new in the history of U.S. coastal management. The 1976 amendments to the federal Coastal Zone Management Act [FN140] included provisions designed to increase the incentives of states to accept new exploratory and development offshore drilling for oil and gas. Part of the legislation created a coastal energy impact fund and grant program that was to be allocated to the states based in part on the amount of outer continental shelf acreage adjacent to the state. [FN141] Adjacency was defined as lying on the state's side of the "extended lateral seaward boundaries" of the state; [FN142] such boundaries to be based on agreement in existing or new interstate compacts, judicial decisions, or by application of the boundary delimitation principles of the 1958 Law of the Sea Convention on the Territorial Sea and Contiguous Zone. [FN143]

The above discussion is merely an outline of a possible approach. Further thought must be given to the proposed framework. It is clear, *234 however, that much of the enthusiasm and opportunity for developing an effective framework is at the state level, as state and local governments, fishermen, and conservation groups look for ways to redirect marine resource development activities away from overfished species and provide an environmentally sound and sustainable source of seafood and coastal community economic benefits. [FN144]

[FN1]. Professor and Director, Marine Law Institute, University of Maine School of Law. B.S., Cornell University; J.D. with honors, George Washington University; LL. M., Yale Law School. This Article was adapted from a paper presented on Wednesday, May 8, 1996, at the Open Ocean Aquaculture Conference in Portland, Maine. The research and editorial assistance of Douglas F. Britton, University of Maine School of Law, Class of 1997, is acknowledged with gratitude. The research was supported in part by grants from the University of New Hampshire-University of Maine Sea Grant College Program, Grant No. NA-56- RG0159, and the Law Faculty Research Fund at the University of Maine School of Law.

[FN1]. For an early commentary on the legal framework for aquaculture in the United States, see Thomas E. Kane,

University of Miami, Sea Grant Technical Bulletin No. 2, Aquaculture and the Law (1970); Research Institute of the Gulf of Maine, Aquaculture: A New England Perspective (Thomas A. Gaucher ed., 1971).

[FN2]. See generally MASSACHUSETTS OFFICE OF COASTAL ZONE MANAGEMENT, AQUACULTURE WHITE PAPER AND STRATEGIC PLAN (1995) [hereinafter AQUACULTURE WHITE PAPER].

[FN3]. NATIONAL RESEARCH COUNCIL, AQUACULTURE IN THE UNITED STATES: CONSTRAINTS AND OPPORTUNITIES 90 (1978) [hereinafter NATIONAL RESEARCH COUNCIL 1978].

[FN4]. *Id.* at 76.

[FN5]. *Id.* at 74 (emphasis added).

[FN6]. *Id.*

[FN7]. BRUCE H. WILDSMITH, AQUACULTURE: THE LEGAL FRAMEWORK 113-14 (1982).

[FN8]. NATIONAL RESEARCH COUNCIL 1978, *supra* note 3, at 90; See generally, Ronald J. Rychlak & Ellen M. Peel, [Swimming Past the Legal Hook: Navigating Legal Obstacles in the Aquaculture Industry](#), 23 ENVTL. L. 837 (1993).

[FN9]. NATIONAL RESEARCH COUNCIL 1978, *supra* note 3, at 75-80. For a discussion of some of the legal barriers faced by aquaculture farmers, including the numerous requirements imposed by federal and state regulations, see generally Tim Eichenberg & Barbara Vestal, [Improving the Legal Framework for Marine Aquaculture: The Role of Water Quality Laws and the Public Trust Doctrine](#), 2 TERR. SEA J. 339 (1992); Rychlak & Peel, *supra* note 8; Todd R. Burrowes, How Are You Going to Get Them Down to the Farm? Legal Obstacles to Salmon Farming in Maine, TERR. SEA, Fall/Winter 1988, at 1.

[FN10]. See WILDSMITH, *supra* note 7, at 137-47.

[FN11]. See, e.g., [Connerty v. Metro. Dist. Comm'n](#), 495 N.E. 2d 840 (Mass. 1986) (license held by master clam digger did not create a properly right which would allow him to recover from Metropolitan District Commission for discharge of raw sewage into harbor).

[FN12]. According to the public trust doctrine, the states hold all navigable waters, and the lands under them, in trust for the common use of the public. [Phillips Petroleum v. Mississippi](#), 484 U.S. 469 (1988). Traditionally, courts have protected the public right to fishing and navigation in public trust waters and lands, and have even expanded the scope of the public trust to include other uses such as recreation and ecological preservation. *Id.* at 476. For further discussion of the public trust doctrine, see generally Joseph L. Sax, The Public Trust Doctrine in National Resource Law: Effective Judicial Intervention, 68 MICH. L. REV. 471 (1970); Note, The Public Trust in Tidal Areas: A Sometime Submerged Traditional Doctrine, 79 YALE L.J. 762 (1970); Bernard S. Cohen, The Constitution, the Public Trust Doctrine and the Environment, 1970 UTAH L. REV. 388; Jan S. Stevens, The Public Trust: A Sovereign's Ancient Prerogative Becomes the People's Environmental Right, 14 U.C. DAVIS L. REV. 195 (1980); Alison Rieser, Public Trust, Public Use, and Just Compensation, 42 ME. L. REV. 5 (1990).

[FN13]. See Eichenberg & Vestal, *supra* note 9, at 353.

[FN14]. See discussion *infra* at V.A.

[FN15]. WILDSMITH, *supra* note 7, at 107-10.

[FN16]. See, e.g., [12 M.R.S.A. § 6072 \(1994\)](#) (Maine aquaculture leasing statute).

[FN17]. WILDSMITH, *supra* note 7, at 107-08.

[FN18]. See Burrowes, *supra* note 9, at 3, 7; See also Paul MacNeil, Growers Need Better Protection, ATLANTIC FISH FARMING, May 1996, at 4; Jeff Ducharme, Fishermen Fear Aquaculture is 'Musseling' In, ATLANTIC FISH FARMING, Dec. 18, 1995, at 11.

[FN19]. See Julia Underwood, Comment, [Intertidal Zone Aquaculture and the Public Trust Doctrine, 2 OCEAN & COASTAL L.J. 383 \(1997\)](#) (discussing [Pazolt v. Div. of Marine Fisheries, 631 N.E.2d 547 \(Mass. 1994\)](#)).

[FN20]. See generally Clifford Goudey, Open Ocean Culture of Sea Scallops Off New England, Presentation at the Open Ocean Aquaculture Conference, Portland, Me. (May 8-10, 1996). The Magnuson Fishery Conservation and Management Act, [16 U.S.C. §§ 1801-1882 \(1994\)](#), amended by Sustainable Fisheries Act, [Pub. L. No. 104-297, 110 Stat. 3559 \(1996\)](#) does not expressly authorize the regional fishery management councils or the National Marine Fisheries Service to license aquaculture projects in the EEZ. See William J. Brennan, To Be Or Not To Be [Involved: Aquaculture Management Options for the New England Fishery Management Council, 2 OCEAN & COASTAL L.J. 261 \(1997\)](#). Federal regulations under the Sea Scallop FMP were necessary, however, to exempt the eight scallop vessels participating in the experiment from the days-at-sea effort restrictions designed to conserve wild sea scallop resources. See NOAA Proposed Rules, [Atlantic Sea Scallop Fishery, Amendment 5, 61 Fed. Reg. 49,428 \(1996\)](#) (to be codified at [50 CFR § 648.14, 648.56](#)) (proposed Sept. 20, 1996). The scallop aquaculture project was first proposed to the New England Fishery Management Council in 1994, but not approved until September 1996.

[FN21]. [12 M.R.S.A. § 6072\(6\) \(1994\)](#). See Eichenberg & Vestal, *supra* note 9, at 360.

[FN22]. Interview with William J. Brennan, former Commissioner of the Maine Department of Marine Resources, in Portland, Me. (Oct. 23, 1995).

[FN23]. Eichenberg & Vestal, *supra* note 9, at 397.

[FN24]. MARINE LAW INSTITUTE, IMPROVING THE LEGAL FRAMEWORK FOR MARINE AQUACULTURE: THE ROLE OF WATER QUALITY AND THE PUBLIC TRUST DOCTRINE, TECHNICAL REPORT FOR THE NORTHEASTERN REGIONAL AQUACULTURE CENTER 44-46 (1992) [hereinafter MARINE LAW INSTITUTE I].

[FN25]. See *supra* note 20 and accompanying text.

[FN26]. WILLIAM J. BRENNAN, BACKGROUND INFORMATION AND RECOMMENDATIONS FOR NEW ENGLAND FISHERY MANAGEMENT COUNCIL DEVELOPMENT OF AN AQUACULTURE POLICY AND MANAGEMENT STRATEGY 12 (1995) (on file with the Ocean and Coastal Law Journal).

[FN27]. See Memorandum from Jay S. Johnson, NOAA Deputy General Counsel, and Margaret F. Hayes, NOAA Assistant General Counsel for Fisheries, to James W. Brennan, NOAA Acting General Counsel 1 (Feb. 7, 1993) (discussing the applicability of federal laws to aquaculture in the EEZ), in WILLIAM J. BRENNAN, *supra* note 26, at app. B. See *infra* at notes 53-55 and accompanying text.

[FN28]. See Eichenberg & Vestal, *supra* note 9 (as adapted from the report which was prepared by the Marine Law Institute for the National Coastal Resources Institute, see MARINE LAW INSTITUTE I, *supra* note 24); MARINE LAW INSTITUTE, LEGAL METHODS FOR PROMOTING LOCAL SALMON FARMING OPERATIONS IN DOWN EAST MAINE, REPORT TO THE NATIONAL COASTAL RESOURCES RESEARCH AND DEVELOPMENT INSTITUTE (1992) [hereinafter MARINE LAW INSTITUTE II].

[FN29]. *Id.* at 72-73. See also Eichenberg & Vestal, *supra* note 9, at 403.

[FN30]. MARINE LAW INSTITUTE II, *supra* note 28, at 73. See also Eichenberg & Vestal, *supra* note 9, at 399.

[FN31]. MARINE LAW INSTITUTE II, *supra* note 28, at 70.

[FN32]. *Id.* at 73.

[FN33]. *Id.* at 69.

[FN34]. *Id.* at 70.

[FN35]. *Id.* at 71.

[FN36]. *Id.* at 72.

[FN37]. *Id.* at 74.

[FN38]. Eichenberg & Vestal, *supra* note 9, at 399.

[FN39]. COMMITTEE ON ASSESSMENT OF TECHNOLOGY AND OPPORTUNITIES FOR MARINE AQUACULTURE IN THE UNITED STATES, NATIONAL RESEARCH COUNCIL, MARINE AQUACULTURE: OPPORTUNITIES FOR GROWTH, 169-177 (1992) [hereinafter NATIONAL RESEARCH COUNCIL 1992].

[FN40]. *Id.* at 176. See also ROBERT R. STICKNEY, AQUACULTURE IN THE UNITED STATES: A HISTORICAL SURVEY 313 (1996) (discussing findings made by National Research Council).

[FN41]. See Memorandum from Jay S. Johnson and Margaret F. Hayes to James W. Brennan, *supra* note 27.

[FN42]. STICKNEY, *supra* note 40, at 314.

[FN43]. *Id.*

[FN44]. Attorney Work Product: Review of Federal Jurisdiction over Fish Farms in the EEZ, from Army Corps of Engineers, to New England Fishery Management Council (Dec. 28, 1992) (draft), in BRENNAN, *supra* note 26, at app. B, 7.

[FN45]. *Id.* at 2.

[FN46]. *Id.*

[FN47]. STICKNEY, *supra* note 40, at 315.

[FN48]. *Id.*

[FN49]. NATIONAL RESEARCH COUNCIL 1992, *supra* note 39, at 176. The NRC Marine Board also concluded that state aquaculture development and management plans should be included in state coastal zone plans, and that Congress should encourage this by expressly designating marine aquaculture as a recognized coastal zone use under the Coastal Zone Management Act, [16 U.S.C. §§ 1451-1464 \(1994\)](#). *Id.*

[FN50]. D. Douglas Hopkins, et al., [An Environmental Critique of Governmental Regulations and Policies for Open Ocean Aquaculture](#), 2 OCEAN & COASTAL L.J. 235, 255 (1997).

[FN51]. *Id.* at 248-255.

[FN52]. Army Corps of Engineers Review, *supra* note 44, at 1.

[FN53]. Memorandum from Jay S. Johnson and Margaret F. Hayes to James W. Brennan, *supra* note 27.

[FN54]. *Id.*

[FN55]. National Marine Fisheries Serv., U.S. Dep't of Commerce, NOAA's ROLE IN THE DEVELOPMENT OF MARINE AQUACULTURE 1 (undated) (on file with the Ocean and Coastal Law Journal).

[FN56]. [33 U.S.C. § 403 \(1994\)](#).

[FN57]. [43 U.S.C. § 1333\(e\) \(1994\)](#).

[FN58]. [33 C.F.R. § 320.4\(a\)\(1\) \(1995\)](#).

[FN59]. *Id.*

[FN60]. [33 U.S.C. §§ 1251-1387 \(1994\)](#).

[FN61]. [40 C.F.R. § 122.24\(a\) \(1995\)](#).

[FN62]. See [33 C.F.R. §§ 320.4\(c\), 325.3\(d\) \(1996\)](#); [40 C.F.R. § 124.59\(b\) \(1996\)](#).

[FN63]. [43 U.S.C. §§ 1331-1356 \(1994\)](#).

[FN64]. [33 U.S.C. § 1342\(b\) \(1994\)](#). See 40 C.F.R. § 123 (1995); Rychlak & Peel, *supra* note 8, at 853.

[FN65]. [16 U.S.C. §§ 1451-1464 \(1994\)](#).

[FN66]. [16 U.S.C. § 1456\(c\)\(3\)\(A\) \(1994\)](#). State consistency review would thus apply to federal discharge or navigation permits proposed for sea farms in the EEZ as well as in state waters if the proposed sea farm activities would affect land or water uses or natural resources located inside the state's coastal zone, including the state's marine waters. [16 U.S.C. § 1453\(1\)\(1994\)](#) (definition of "coastal zone").

[FN67]. The applicant must certify to the licensing or permitting agency that the proposed activity complies with these policies and will be conducted in a manner consistent with the program. [16 U.S.C. § 1456\(c\)\(3\)\(A\)](#).

[FN68]. *Id.* See also NOAA Consistency Regulations, 15 C.F.R. pt. 930 (1995).

[FN69]. AQUACULTURE WHITE PAPER, *supra* note 2, at 19-20.

[FN70]. *Id.* at 20.

[FN71]. The Corps has the authority to issue three distinct forms of general permits: regional, nationwide, and programmatic. [33 C.F.R. § 325.5\(c\) \(1995\)](#). Regional permits are issued pursuant to [33 C.F.R. § 325.2\(c\)\(2\) \(1995\)](#), and nationwide permits are issued under [33 C.F.R. § 330.1 \(1995\)](#).

Under the National Pollutant Discharge Elimination System (NPDES) permit program, the EPA is authorized to issue general permits in accordance with [40 C.F.R. § 122.28 \(1995\)](#).

[FN72]. Army Corps regulations define "general permit" as follows:

(f) The term "general permit" means a DA [(Department of the Army)] authorization that is issued on a nationwide or regional basis for a category or categories of activities when:

(1) Those activities are substantially similar in nature and cause only minimal individual and cumulative environmental impacts; or

(2) The general permit would result in avoiding unnecessary duplication of the regulatory control exercised by another Federal, state, or local agency provided it has been determined that the environmental consequences of the action are individually and cumulatively minimal.

[33 C.F.R. § 322.2 \(f\) \(1995\)](#).

[FN73]. See [Proposed Regulatory Guidance Letter on Programmatic General Permits, 61 Fed. Reg. 18,575 \(1996\)](#) (discussing programmatic general permits).

[A Programmatic General Permit (PGP)] is a type of general permit, issued by the Corps, that authorizes, for the purposes of Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and/or Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, certain projects that are also regulated by another Federal, tribal, state, or local regulatory authority [(or other regulatory authority (ORA))]. A PGP is the written vehicle identifying the terms, limitations, and conditions under which specific projects regulated by an ORA program may be authorized under the Corps Regulatory Program with a much more efficient and abbreviated review by the Corps.

Id.

[FN74]. AQUACULTURE WHITE PAPER, *supra* note 2, at 197.

[FN75]. See [Final General NPDES Permits for Oil and Gas Operations on the Outer Continental Shelf \(OCS\) and in State Waters of Alaska, Bering Sea and Beaufort Sea, 49 Fed. Reg. 23,734 \(1984\)](#); Brennan, *supra* note 26, at 5.

[FN76]. See NATIONAL RESEARCH COUNCIL 1992, *supra* note 39, at 135-140.

[FN77]. For example, the general regulatory policies of the Army Corps state that "[t]he general permit program ... is the primary method of eliminating unnecessary federal control over activities which do not justify individual control or which are adequately regulated by another agency." [33 C.F.R. § 320.1\(a\)\(3\) \(1995\)](#).

[FN78]. BRENNAN, *supra* note 26, at apps. A,B,C, I.

[FN79]. See STICKNEY, *supra* note 40, at 228. See also Doug Thompson, Bill Casts Fish Farmers Under USDA, ARK. DEMOCRAT-GAZETTE, Jul. 4, 1994, at 1D (discussing federal legislation proposed by U.S. Rep. Blanche Lambert, D-Ark., that would make the USDA the lead agency for fish farming); Robert M. Sperber, Aquaculture's Growing Pains,

Food Processing, Aug. 1992, at 49 (discussing federal bill introduced by U.S. Rep. Richard H. Stallings, D-Id., that would designate USDA as lead agency for aquaculture, in effort to integrate "disparate aquaculture regulations" presently enforced under various agencies).

[FN80]. Marine Aquaculture Act of 1995, S. 1192, 104th Cong. (1995). The bill was referred to the Senate Committee on Commerce, Science and Transportation, 141 CONG. REC. S12370, S12392 (daily ed. Aug. 10, 1995), but not acted on. Another bill, S. 678, introduced by Senator Akaka of Hawaii, was referred to the Senate Committee on Agriculture, Nutrition, and Forestry, with twenty-nine co-sponsors, 141 CONG. REC. S5217, S5219 (daily ed. Apr. 5, 1995), but not acted on by that committee either.

[FN81]. S. 1192, 104th Cong. § 2(a)(6) (1995).

[FN82]. Id.

[FN83]. Id. § 2(a)(7).

[FN84]. Id. § 2(b)(3).

[FN85]. See discussion supra Parts II. A-C.

[FN86]. S. 1192, 104th Cong. § 6(a).

[FN87]. Id. § 6(b)(1)-(2).

[FN88]. Id. § 6(b)(3).

[FN89]. Id. § 6(f)(1).

[FN90]. Id. § 6(g)-(h).

[FN91]. Id. § 3(2).

[FN92]. Id. § 3(2)(B).

[FN93]. See, e.g., MacNeil supra note 18, at 4 (discussing need for exclusive use rights in order to protect aquaculture facilities from damage and interference).

[FN94]. See Eichenberg & Vestal, supra note 9, at 353-54.

[FN95]. A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 3.02 [1] (1996).

[FN96]. 43 U.S.C. §§ 1331-1356 (1994).

[FN97]. 12 M.R.S.A. § 6072 (1994). See Eichenberg & Vestal, supra note 9, at 360.

[FN98]. See supra note 11 and accompanying text. See also WILDSMITH, supra note 7, at 117 n.71 (illustrating the insufficient proprietary interest of a license for purposes of maintaining a claim for wrongful interference).

[FN99]. See, e.g., Ducharme, supra note 18, at 11.

[FN100]. At least one of the bills considered by the 104th Congress to reauthorize the Magnuson Fishery Conservation and Management Act would have provided criminal sanctions for the interference with marine aquaculture in the EEZ. H.R. 1465, 104th Cong. (1995).

[FN101]. S. 1192, 104th Cong. § 6(e)(1)-(2) (1995).

[FN102]. Id. § 6(e)(2).

[FN103]. Id. § 6(e)(3)(B).

[FN104]. Id. § 6(c)(2)(A).

[FN105]. Id. § 6(k)(1).

[FN106]. Id. § 6(k)(1)(A)-(F).

[FN107]. Id. § 6(k)(3).

[FN108]. See supra notes 101-103 and accompanying text.

[FN109]. Under Section 7 it is provided that the Secretary shall "develop and establish model environmental guidelines with respect to marine aquaculture facilities located within state waters." S. 1192, 104th Cong. § (7)(a)(1) (1995).

[FN110]. See Eichenberg & Vestal, supra note 9, at 396 (discussing the State of Maine's 1992 draft guidelines for the establishment of a joint permitting procedure to consolidate state and federal regulation of finfish aquaculture projects).

[FN111]. S. 1192, 104th Cong. § 7(a)(1) (1995).

[FN112]. Id. § 7(a)(4).

[FN113]. Id. § 7(a)(4)(D).

[FN114]. Id. § 7(a)(4)(E).

[FN115]. Id. § 7(a)(5).

[FN116]. Id. § 7(b).

[FN117]. See discussion infra in Part VI.

[FN118]. S. 1192, 104th Cong. § 6(c)(2)(A) (1995). Section 6 provides that "other public trust uses" include "recreational and commercial fishing, navigation, conservation, and aesthetic enjoyment." Id.

[FN119]. Id. § 6(c)(2)(B).

[FN120]. Id. § 6(c)(2)(C).

[FN121]. Id. § 6(c)(3).

[FN122]. *Id.* § 6(d)-(e).

[FN123]. See, e.g., National Marine Sanctuaries Act, [16 U.S.C. § 1445a \(1994\)](#) (allowing Secretary of Commerce to establish Advisory Councils-consisting of representatives from local user groups, public interest organizations, educational organizations, scientific organizations, and other interested groups-to provide assistance to the Secretary regarding the designation and management of national marine sanctuaries); National Marine Sanctuary Regulations, [15 C.F.R. 922.23 \(1995\)](#); Marine Mammal Protection Act, [16 U.S.C. § 1387\(f\)\(6\)\(A\) \(1994\)](#) (allowing Secretary of Commerce to establish Take Reduction Teams-consisting of a wide variety of governmental, non-governmental, and user group representatives-to draft take reduction plans that will assist in the recovery or prevent depletion of specified marine mammal stocks); [61 Fed. Reg. 5384 \(1996\)](#) (establishing Take Reduction Team for the Gulf of Maine harbor porpoise/sink-gillnet fishery); [61 Fed. Reg. 40, 819 \(1996\)](#) (establishing Take Reduction Team to address bycatch of northern right whales and humpback whales in several Atlantic fisheries); Shira Golden, *Nova Scotia Aquaculture Initiative Raises Sustainability Questions*, ALTERNATIVES, Nov. 1993, at 7, available in LEXIS, News Library, ASAPII file (discussing use of public hearings, under Nova Scotia's Aquaculture Act, in process of site approval for proposed aquaculture facilities); The Canadian Salmon Aquaculture Industry, *MARINE FISHERIES REV.*, Mar. 1990, at 31, available in LEXIS, News Library, ASAPII file (discussing cooperation among the provincial government, the salmon farming industry, academic community, and private sector under the New Brunswick Aquaculture Act).

[FN124]. See Golden, *supra* note 123, at 7.

[FN125]. S. 1192, 104th Cong. § 4 (1995). The bill also provides that the Secretary "may utilize" any Marine Aquaculture Advisory and Review Panel to assist in the development of model environment guidelines under Section 7.*Id.* § 7(a)(2).

[FN126]. See *supra* note 118 and accompanying text.

[FN127]. [631 N.E. 2d 547 \(Mass. 1994\)](#). See *supra* note 19 and accompanying text.

[FN128]. *Id.* at 551 ("[A]quaculture is not fishing, nor can it legitimately be considered a 'natural derivative' of the rights to fish").

[FN129]. NOAA withdrew plans for fisheries including the American lobster, spiny lobster, and high seas Pacific salmon. See [61 Fed. Reg. 13,478 \(1996\)](#) (withdrawal of Fishery Management Plan for American Lobster Fishery); [61 Fed. Reg. 13,149 \(1996\)](#) (withdrawal of Fishery Management Plan for the Salmon Fisheries in the EEZ off the coast of Alaska); [61 Fed. Reg. 12,055 \(1996\)](#) (withdrawal of Fishery Management Plan for Spiny Lobster Fishery of the Gulf of Mexico).

[FN130]. [33 U.S.C. § 1342\(b\) \(1994\)](#); See also Rychlak & Peel, *supra* note 8, at 852-56 (discussing delegations of authority to states under the NPDES program).

[FN131]. See discussion *supra* at notes 71-73.

[FN132]. [16 U.S.C. § 1379 \(1994\)](#). [Section 1379 \(b\)](#), states that "the Secretary shall transfer management authority for a species of marine mammal to a State if the Secretary finds, after notice and opportunity for public comment, that the State has developed and will implement a program for the conservation and management of the species," provided that the state program conforms with several specified criteria. [Id.](#) § 1379(b)(1). See NOAA, *Transfer of Marine Mammal Authority to States*, 50 C.F.R. pt. 403 (1995).

[\[FN133\]](#). See supra note 129 and accompanying text.

[\[FN134\]](#). See, e.g., Daniel O. Suman, The Florida Keys National Marine Sanctuary: An Innovative Federal/State Partnership in Marine Resource Management, in COASTAL MANAGEMENT (forthcoming 1997).

[\[FN135\]](#). See supra note 130.

[\[FN136\]](#). See supra note 132.

[\[FN137\]](#). See NOAA Coastal Management Program Regulations, [15 C.F.R. § 923.80 \(1995\)](#).

[\[FN138\]](#). Coastal Zone Protection Act of 1996, Pub. Law No. 104-150, § 7(2), 110 Stat. 1380, 1381 (1996).

[\[FN139\]](#). S. 1192, 104th Cong. § 7(a)(4)(A)-(E) (1995).

[\[FN140\]](#). [Pub. L. No. 94-370, 90 Stat. 1013 \(1976\)](#).

[\[FN141\]](#). Id. sec. 7, § 308(b)(2)(A), 90 Stat. at 1020.

[\[FN142\]](#). Id. sec. 7, § 308(b)(3)(B), 90 Stat. at 1021. See also Deepwater Port Act, [16 U.S.C. § 1502\(1\) \(1994\)](#) (defining "adjacent coastal State" as any coastal state which "would be directly connected by pipeline to a deepwater port" or which "would be located within 15 miles of any such proposed deepwater port" for purposes of state review of deepwater port licenses).

[\[FN143\]](#). Law of the Sea: Convention on the Territorial Sea and the Contiguous Zone, Apr. 29, 1958, [15 U.S.T. 1606](#), 516 U.N.T.S. 206. See [Pub. L. No. 94-370](#), sec. 7, § 308(b)(3)(B)(i)-(ii), 90 Stat. at 1021.

[\[FN144\]](#). Alison Rieser, Reconciling the Regulatory Maze for Aquaculture in Boston Harbor, in NEW ENGLAND AQUARIUM, AQUATIC FORUM SERIES, BOSTON HARBOR AQUACULTURE: BOOM OR BUST? 49, 55 (Sebastian Belle et al. eds., 1996).

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