
CHESAPEAKE BAY OYSTERS: LEGAL THESES ON EXOTIC
SPECIES

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Introduction

The Chesapeake Bay oyster culture is traditional. In both Maryland and Virginia most oysters are taken by hand from natural oyster bars. Existing laws limit access to the residents of the respective states, and discourage new technologies and mariculture.

A recent Supreme Court decision, Douglas v. Sea-coast Products, Inc., may change this culture. Its primary impact may be a highly mobile interstate oyster fleet free to search out productive oyster grounds without regard for state boundaries; its secondary impact may be renewed interest in private oyster leases, mariculture, and the introduction of new species of oysters.

The paper which follows examines these prospects.

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Part ICHESAPEAKE BAY OYSTER LAWS

The Chesapeake Bay oyster fishery is divided into three regulatory regions. Virginia waters are regulated exclusively by that state. The Potomac River, the south bank of which forms the Maryland-Virginia border, is regulated by the Potomac River Fisheries Commission created by a compact between the two states.¹ Other Maryland waters are regulated exclusively by that state. The Chesapeake oyster industry remains strongly rooted in its cultural and historical origins,² but despite its reluctance to copy the innovative methods used to boost oyster production in other regions and in other countries, the natural advantages of this Bay enable the two states to produce a major portion of the country's oyster harvest.

The regulation of the Chesapeake oyster industry begins with the demarcation of public oyster bars. These areas, with a natural capability for oyster growing, are regulated in both states as a common fishery within which private leases are forbidden.³ This basic division restricts the development of private oyster culture to those remaining areas which are generally less likely to favor such attempts. In Virginia, the original designation of natural oyster bars was made in 1892 in the Baylor survey, and these designations, as modified by subsequent statutes, are

deemed to be conclusive in Virginia courts on the question of the limits of the natural oyster beds.⁴ The original survey of Maryland's natural oyster beds was completed in 1912.⁵ That survey can be modified by either of two procedures. The Maryland Department of Natural Resources is authorized to reclassify submerged lands to reflect the actual character of the bottom, after public hearings and possible court appeals.⁶

Also, whenever anyone applies for a lease of an area not classified as a natural oyster bar, his application may be defeated by a protest supported by evidence that "the public has resorted to the bar for a livelihood, whether continuously or at intervals, during any oyster season within five years prior to the filing of an application."⁷ If a protest succeeds, the designation of natural oyster bars must be enlarged accordingly.⁸

Private oyster leases account for a far greater proportion of the area harvested in Virginia than Maryland. Virginia has 243,000 acres of public oyster grounds and over 100,000 acres in leases.⁹ Maryland, on the other hand, has some 350,000 acres of public bars and about 9,000 acres in private leases.¹⁰ Stated another way, private leases in Virginia occupy over ten times the area of Maryland's private grounds. Part of this difference may be attributable to less favorable regulation of private leasing in Maryland.

Maryland limits the total acreage which may be leased to a single individual to 500 acres in the

main body of the Bay, and 30 acres in tributaries.¹¹ Virginia allows one leaseholder to accumulate up to 5,000 acres in the Bay and up to 3,000 acres in tributaries.¹² Maryland does not permit leases to corporations; corporate leaseholders are welcome in Virginia.¹³ Virginia charges an annual rent of one dollar and fifty cents per acre, an amount set by statute, whereas Maryland charges slightly more at present, two dollars per acre per year.¹⁴ Each state allows twenty year terms, but only in Virginia is the lease automatically renewed.¹⁵ Power dredging, by far the most efficient harvesting method, is permitted on private grounds Monday through Saturday in Virginia, while Marylanders may dredge under power only two days per week.¹⁶ Virginia prohibits exports of seed oysters if the Commissioner of Marine Resources determines that there is only enough for Virginia planters.¹⁷ Maryland leaseholders receive no similar protection: the state must place the first one million bushels of seed oysters taken in its repletion program on public bars, and can sell no more than half of what remains to private lessees.¹⁸ As if these restrictions and the frequent protests against lease applications were not enough to discourage a prospective oyster farmer, Maryland has enacted an outright prohibition on leasing in five major tidewater counties and in parts of a sixth.¹⁹

On the Potomac River, oyster leasing is prohibited

under the 1958 Potomac River Compact.²⁰ This restriction can only be lifted by the action of both states.

The public oyster bars of the Chesapeake are regulated as three distinct fisheries. Each area is managed through a combination of gear restrictions,²¹ seasonal limits,²² culling requirements,²³ pollution closures,²⁴ entry restrictions,²⁵ and repletion programs. It is difficult to describe the nature of these restrictions and limitations because they come together in a variety of permutations and combinations with manifold exemptions and exclusions. Generally, however: the taking of oysters under sail power and with hand operated tongs is encouraged while the taking of oysters under motor power or with a dredge is restricted; taking of oysters during the summer months is prohibited; oysters smaller than three inches across must be culled and returned to the beds; public health officials have authority to close oyster bars when there is a danger of contamination; and each state limits entry to their respective citizens, while Potomac waters are open to the citizens of both states to the exclusion of all others.

It is somewhat easier to generalize the consequences of these regulations. They have not increased the physical yield of the fishery.²⁶ In Virginia, statewide oyster production declined from over 3.5 million bushels annually just prior to 1960 to about one million bushels in 1977;²⁷ on the Potomac production

dropped from 146,846 bushels in the production year ending in 1964 (7/1/63 to 6/30/64) to 29,508 bushels in the production year ending in 1977, only to rebound to 166,282 bushels in the production year ending in 1978;²⁸ in Maryland 1,635,123 bushels were harvested in 1960, while 1,851,564 bushels were harvested in 1977.²⁹ Credit for the upsurge in the Potomac yield and for the sustenance of the Maryland yield is generally extended to the oyster repletion programs which these jurisdictions conduct.³⁰ These programs, which involve the rebuilding and reseeding of public oyster bars, in 1977 cost over \$200,000 in Potomac waters, and over one million dollars in Maryland waters.³¹

Chesapeake oyster laws have had other consequences. They have foreclosed the use of modern gear such as power operated dredges which would permit the taking of oysters at a significantly lower cost. They have created a parochial preference for the citizens of respective states, but by so doing, may have interfered with development of mutually advantageous trade-offs between Maryland and Virginia in waters other than the Potomac's. Finally, (and serendipitously) they have preserved a remnant of the picturesque maritime heritage of classic bay vessels--but for the oyster laws, skipjacks and bugeyes would have long since been extinct.

Part IIRESIDENCY REQUIREMENTS

The Chesapeake Bay oyster fishery relies principally on the cultivation of public oyster bars. As was discussed above, these bars are regulated through a variety of measures intended to conserve the resource, including entry restrictions. A recent Supreme Court decision raises substantial questions over the legitimacy of laws in Maryland and Virginia which exclude nonresident oystermen. While at present, Maryland watermen are restricted to Maryland waters and Virginians are restricted to Virginia and Potomac River waters, the Supreme Court's ruling in Douglas v. Seacoast Products, Inc.,³² strongly suggests that a mobile, interstate commercial oyster fleet will eventually ply the waters of the Chesapeake Bay without regard to state boundaries.

The specific conflict presented in the Douglas case arose when the Commissioner of Virginia Marine Resources refused to issue a license which would allow Seacoast Products, Inc. to catch menhaden in Virginia's territorial waters. The reason for his refusal was that under two provisions of state law, the nonresident company was ineligible for commercial fishing licenses. Section 21.1-60 of the Virginia Code prohibited persons other than Virginia residents ("any person who has actually resided in Virginia for

twelve months") from fishing for menhaden in the Virginia portion of the Chesapeake Bay.³³ However, non-resident corporations were eligible for menhaden licenses to fish in the three mile wide marginal sea along Virginia's eastern coast if United States citizens owned and controlled at least seventy-five percent of its stock. Seacoast Products was founded in 1911, incorporated in Delaware, maintaining its principal offices in New Jersey and qualified to do business in Virginia.³⁴ In 1973 Seacoast was sold to Hanson Trust Limited, a British company, the stock of which is held almost entirely by aliens.³⁵ Because Seacoast was no longer owned by United States citizens, it was prohibited under Virginia law from fishing for menhaden in the Bay, as well as in the marginal sea.

Seacoast then filed a complaint in federal court challenging the constitutionality of the Virginia statutes. A three judge court was convened which agreed with Seacoast's contention that "since the licenses are granted to Virginia domestic and resident corporations but refused nonresident corporations, there is discrimination in contravention of the Fourteenth Amendment assurance of equal protection of the laws."³⁶

The state of Virginia appealed that ruling to the Supreme Court, which affirmed the decision, but on another ground. The Court stated that it was unnecessary to reach the constitutional questions raised by the parties, since it found that the two Virginia

statutes were preempted by federal vessel enrollment and licensing laws.³⁷ Since Seacoast's vessels had been properly enrolled and since they had been licensed to catch any type of fish, "we conclude that [they] had been granted the right to fish in Virginia waters on the same terms as Virginia residents."³⁸

The principal authority for this conclusion, aside from the licensing statutes and the prescribed form of the license itself, was the case of Gibbons v. Ogden,³⁹ decided in 1824. In that case the court ruled that a New York statute creating a steamboat monopoly in New York waters was preempted by the federal laws under which a would be competitor had enrolled and licensed his vessel. Since Gibbons' steamboat was federally licensed to engage in the coasting trade, the court held that the license not only identified the national character of the vessel, but also conveyed the right to transport passengers and freight in coastal waters free from state-created monopolies. The Douglas decision reasoned that since Seacoast held licenses for the mackerel fishery, which is defined to include "the taking of fish of every description",⁴⁰ it not only identified the enterprise pursued, but also authorized Seacoast to carry on that enterprise:

"And just as Gibbons and its progeny found a grant of the right to trade in a State without discrimination, we conclude that [Seacoast's vessels] have been granted the right to fish

in Virginia waters on the same terms as Virginia residents."⁴¹

The ruling in the Douglas decision more or less compels the conclusion that a federal vessel licence entitles a nonresident to harvest oysters (as well as finfish) on the same terms as residents. The form of the license, as prescribed by statute, states that a license to engage in the mackerel fishery authorizes "the taking of fish of every description including shellfish."⁴² Records of the Coast Guard offices in the Chesapeake Bay region show a total of 2,491 federally licensed fishing vessels, 1,786 engaged in fishing generally and 705 principally engaged in oystering.⁴³ There is also, of course, the possibility that the removal of state entry restrictions may attract to the Chesapeake Bay federally licensed fishing vessels from other regions. Hence, Douglas has the immediate impact of removing residency limitations on access to Chesapeake Bay for thousands of vessels.

An interesting question is the extent to which the Douglas decision may encourage application for federal licenses. The federal enrollment and licensing laws only require licensing of vessels displacing over five tons;⁴⁴ many traditional Chesapeake Bay workboats displace less than five tons. The Douglas ruling provides an incentive to the operators of such boats (whether Maryland or Virginia) to obtain a license and to thereby obtain access to the whole Bay.

Whether vessels displacing less than five tons are eligible for federal licenses is problematic.

A second interesting question is whether the Douglas ruling renders Maryland's and Virginia's residency requirements unconstitutional. Although deciding the case on the narrow grounds of preemption, the Court went on to say:

"A number of coastal States have discriminatory fisheries laws, and with all natural resources becoming increasingly scarce and more valuable, more and more such restrictions would be a likely prospect, as both protective and retaliatory measures. Each State's fishermen eventually might be effectively limited to working in the territorial waters of their residence, or in the federally controlled fishery beyond the three mile limit. Such proliferation of residency requirements for commercial fishermen would create exactly the sort of Balkanization of interstate commercial activity which the Constitution was intended to prevent."⁴⁵

This view of the respective state and federal interests suggests that the Supreme Court would not be reluctant to extend the holding in Douglas to preclude state residency requirements for oystermen.

The possibility that state access restrictions on the Chesapeake oyster fishery may be struck down as unconstitutional is reinforced by a Supreme Court decision handed down several months after Douglas, in the case of Hicklin v. Orbeck.⁴⁶ An Alaska statute required that every oil and gas lease to which the state is a party must contain terms assuring the

hiring of qualified Alaska residents in preference to nonresidents. When nonresidents challenged the constitutionality of the "Alaska Hire" law, the state argued that its ownership of oil and gas reserves was a sufficient justification for confining the benefits of exploiting those resources to state residents.

The Supreme Court disagreed:

"Although the fact that a state owned resource is destined for interstate commerce does not, of itself, disable the State from preferring its own citizens in the utilization of that resource, it does inform analysis under the Privileges and Immunities Clause as to the permissibility of the discrimination the State visits upon nonresidents based on its ownership of the resource. Here the oil and gas upon which Alaska hinges its discrimination against nonresidents are of profound national importance. On the other hand the breadth of the discrimination mandated by Alaska Hire goes far beyond the degree of resident bias Alaska's ownership of the oil and gas can justifiably support. The confluence of these realities points to but one conclusion: Alaska Hire cannot withstand constitutional scrutiny. As Mr. Justice Cardozo observed in Baldwin v. G.A.F. Seelig, 294 U.S. 511, 523 (1935), the Constitution "was framed" upon the theory that the peoples of the several states must sink or swim together, and that in the long run prosperity and salvation are in union and not division."⁴⁷

As the Douglas decision revealed, the Court recognized the commercial fisheries of the coastal states as important components of the nation's interstate commerce. Therefore, the residency discriminations of the Chesapeake oyster fishery are no less likely to withstand

constitutional scrutiny than Alaska's attempted preferment of residents in developing its oil and gas resources.

Part IIITHE FUTURE OF THE CHESAPEAKE OYSTER FISHERY

The preceding analysis presents the real possibility that Chesapeake Bay oysters will in the future be harvested by a mobile interstate work force. Fortunately, there is an instructive and analogous precedent to the elimination of state residency restrictions which the Douglas decision forebodes. That precedent is the elimination of county residency restrictions on Maryland commercial shellfish harvesters as a result of the state court ruling in Bruce v. Director, Department of Chesapeake Bay Affairs in 1971.⁴⁸

Prior to the Bruce case, Maryland law prohibited a waterman from taking oysters with hand tongs or patent tongs in waters outside the county in which he resided. Similar restraints applied to crabbers. The Maryland Court of Appeals ruled that these statutes violated the Fourteenth Amendment of the United States Constitution and Article 23 of the Declaration of Rights of the Maryland Constitution:

"We think the statutes set fourth an unlawful classification of persons and discriminate not only among the several watermen of the 13 tidewater counties in which crabs and oysters are found in marketable quantities, but also between residents of these counties and those who reside in Baltimore City and the 10 remaining counties of Maryland. In addition, we cannot see in what way the restrictive nature of the statutory provisions bears any reasonable

relation to the public interest."⁴⁹

As a result of this ruling, Maryland watermen have been allowed to harvest oysters throughout the state without regard to boundaries. The considerations which influence a waterman's decision to seek shellfish outside his own county waters are similar to those which would influence watermen to cross state lines if residency requirements were eliminated. In addition, the effects of the increase in mobility since the Bruce decision should demonstrate, on a somewhat smaller scale, what might be expected to result if watermen were permitted to move freely through the Maryland and Virginia portions of the Chesapeake Bay. Thus, an understanding of changes in the Maryland oyster industry in the years since the Bruce decision should assist fisheries managers in anticipating the consequences of an elimination of state residency requirements.

The elimination of the county residency requirement has had significant impacts on Maryland's oystermen. These impacts were analyzed by Dr. Ivar Strand, a University of Maryland resource economist, in a recently completed Sea Grant study.⁵⁰ Prior to the Bruce decision, oyster densities (as measured by average productivity per boat day) varied widely from county to county. Oyster bars in certain counties yielded over twice the harvest per boat day obtained in other counties. In the period after the

Bruce decision, presumably as a result of the transfer of fishing effort, oyster densities rapidly equalized throughout the state. Once watermen were no longer restricted to the waters of the home county, they found it profitable to motor to distant bars despite the additional costs in terms of fuel and traveling time.

A correlative change occurred in the pattern of prices for landed oysters among the counties. Prior to the Bruce decision, prices among counties varied widely and randomly. No one county's price was consistently the highest. Random events such as good spatfall or the opening of closed shellfish areas would change the oyster density in one county, creating large supplies, and generating low prices for several years. Fishing effort could not be rapidly shifted to take advantage of the higher yields so as to increase landings and depress prices.

After 1971, a much more stable and predictable pattern of county oyster prices emerged. As would be expected, all other things being equal, oysters landed in the county closest to the principal marketing center brought the highest price since the wholesaler's shipping costs were less. During this period oyster densities have remained relatively equal among the counties, as discussed above.

The basic differences in the Maryland and Virginia oyster fisheries must be kept in mind to protect

properly the lessons of Maryland's experiences with intercounty mobility to an interstate Chesapeake Bay oyster. Thorough studies of the respective state oyster programs have been made,⁵¹ but the essential characteristics may be digested as follows:

1. the average productivity of public oyster grounds in Virginia is considered to be lower than in Maryland;⁵²

2. private oyster leases in Virginia cover about ten times the area leased in Maryland;⁵³ and

3. there are over two thousand federally licensed fishermen around the Bay, seven hundred of whom are principally engaged in oystering.⁵⁴

It would appear that some portion of the licensed Virginia watermen would have an incentive for entering Maryland waters to oyster, to the extent that the greater returns for a given amount of effort offset transit costs. Just as the elimination of county residency requirements resulted in an equalization in oyster densities among the counties, the elimination of state residency requirements permits a transfer of effort by Virginians to the more productive Maryland oyster bars. Since the transfer of effort will initially be toward Maryland, Virginia oysters will be spared in the short run. An equilibrium in regional densities should be rapidly achieved, as in the post-Bruce period, after which the concentration of effort will be drawn toward particular areas of

greater abundance (as determined by a good spatfall, seeding efforts or the opening of previously closed shellfish grounds) and away from poorer, less productive grounds (which may be affected by disease, pollution, predators, ice or other problems).

Interstate mobility will exacerbate the tendency of the individual waterman to place a higher priority on immediate returns rather than on long-term productivity of the public bars. In the case of a private leased bed, the lessee has the greatest incentive to adopt management practices oriented toward conservation and long-term productivity.⁵⁵ He has the greatest incentive to defer present harvesting to assure future propagation. During the period prior to the Bruce decision, each waterman shared the oyster grounds of his county only with other county residents. The resource was not exclusive, but within this limited "commons" it is possible that a waterman could still view deferred production as being within his economic self-interest. However, as these bars are opened to all state residents, and eventually to any waterman at all, the economic incentive of the individual to maximize immediate gains from the available oyster resources must take greater precedence.

Even after densities in each state have become equalized due to interstate mobility of oystermen, the Virginia oyster industry as a whole will be less vulnerable to the effects of a shifting oyster fleet.

This mobility would only affect public bars: a far greater part of the Virginia industry than the Maryland industry depends upon the use of privately leased oyster grounds. It is unlikely that nonresidents would claim right to immediately disenfranchise private leaseholders. Thus, the infiltration of nonresidents into the privately leased grounds in Virginia will be controlled by the manner prescribed by state law for applying for the right to lease a given tract.⁵⁶ In each state private leases are presently limited to residents;⁵⁷ these restrictions appear to be as vulnerable to constitutional challenge as the general ban on nonresident oystermen. The state, as lessor of real property, is not immune to the requirements of the Fourteenth Amendment⁵⁸ or the Commerce Clause any more than as regulator of fisheries within state waters.


The duration of individual private leases, twenty years in both Maryland and Virginia, would slow the influx of newcomers even if nonresidents did become eligible. Further delay would result from laws which gave preference to existing leaseholders for the right to renew their leases. Such a preference has some justification as a sound conservation measure since the lessee would be encouraged to employ practices likely to result in the greatest long-term yield. If the right to renew were assured, the lessee would not be inclined to deplete his oyster

beds at the end of the lease period. While the widespread use of long-term, renewable private oyster leases in a state's management program would serve to buffer the impacts resulting from nonresident fishermen, it would also perpetuate the exclusion of nonresidents. In other circumstances, limited entry schemes which allowed preferences to prior holders of fishing licenses, have been declared unconstitutional where the effect was to exclude nonresidents.⁵⁹ However, the need for continuity in oyster leases may be found to justify the discriminatory effects.⁶⁰

Maryland currently subsidizes its oyster repletion program at a cost of half a million dollars per year, in addition to revenues generated by inspection and severance taxes.⁶¹ When the benefits of the repletion program are no longer confined to state residents, political support for continuing the subsidy will decline. If the repletion program is essential for the maintenance of productivity on public bars, then oyster taxes would have to be increased until sufficient revenues are generated to fund the entire program without subsidization. Note that even when taxes are raised to the point where the costs of the repletion program are covered, the state receives no net benefit in exchange for oysters harvested.

With the elimination of state residency requirements for oystermen, the states of Maryland and Virginia would have an unprecedented need for the

development of a joint management program. The Potomac River Fisheries Compact, which provides for joint management of one river, could provide a model for an enlarged Chesapeake Bay oyster management scheme. The coastal zone management plans currently under development in both states should be modified to accommodate the need for greater cooperation in fisheries management as state residency restrictions are eliminated.

In summary, the Maryland and Virginia oyster industries, like the fisheries in many coastal states, stand in a precarious position as a result of the Douglas v. Seacoast Products, Inc. decision. Without the insulation provided by state residency restrictions, public oyster bars will be exposed to more intensive fishing effort. The state should plan now to restructure its oyster management program to protect its property interest in state oyster grounds, to avoid subsidizing nonresident oystermen out of general state revenues and to encourage more widespread cultivation of privately leased oyster beds. 

Part IVINTRODUCTION OF EXOTIC SPECIES

The preceding section concluded that it was in the interest of Maryland and Virginia to encourage more widespread cultivation of privately leased oyster beds.

One aspect of increased private oyster culture must be the examination of possible advantages of different species of oyster such as Crassostrea gigas. The introduction of Crassostrea gigas into the Chesapeake Bay would be hampered by a number of legal constraints. In Maryland a state law provides that "[a] lessee may plant, cultivate, sow, or protect oysters only of the species known as Crassostrea virginica in waters of the state."⁶² This measure was passed to curb some rather haphazard experimentation by a local shellfish entrepreneur. Maryland law is not as explicit on the question of whether the state is authorized to plant a new species. Although the state Department of Natural Resources is directed generally to "take measures which in its judgment seem best calculated to increase the productivity or utility of any part of the natural oyster bars of the state,"⁶³ the specific provisions dealing with the repletion program appear to authorize only intrastate movement of seed, other oysters and cultch.⁶⁴

The Potomac River Fisheries Commission has no

specific regulation concerning the introduction of new species. Therefore, the Maryland laws prohibiting importation of a new species would apply on the Potomac River as well.⁶⁵

The Commonwealth of Virginia has recently enacted a comprehensive statute to regulate the introduction of fish and shellfish imported from outside the state.⁶⁶ Under this statute, the Commissioner of Marine Resources, with the concurrence of the Director of the Virginia Institute of Marine Science, is authorized to establish a list of approved states or waters in the continental United States from which approved species of fish and shellfish may be imported. If a proposed import is not an approved species from an approved area in the United States, specific permission must be obtained from the Commission prior to importation.

It appears, therefore, that the introduction of a new species of oyster must be preceded by statutory changes in Maryland and, assuming Maryland would adopt a law similar to that enacted in Virginia, regulatory review and approval by state fisheries agencies. What criteria should these agencies apply?

The original list of species permitted for importation into Virginia is left entirely to the discretion of the Commissioner of Marine Resources, subject to the veto of the Director of the Virginia Institute of Marine Resources. A species may be added to or removed from the list of approved species when the

Commissioner "deems it necessary for the protection of the waters of the Commonwealth."⁶⁷ While such a standard may be applicable when considering the deletion of a species from the list, it hardly seems appropriate for determining when to allow the importation of a new species. Such an importation would rarely be necessary for the protection of state waters.

The state of Washington, which has had more experience with oyster seed importation, has adopted a comparable statute to regulate such imports.⁶⁸ Each shipment must be inspected and may be excluded from planting unless the state fisheries officials find that "the seed in question has been found to be free of disease, infestation, pests and other substances which might endanger the oysters in the waters of this state." This regulation does not specifically address the question of the introduction of a new species. Possibly it was enacted after the importation of Japanese C. gigas seed had become an established practice to guard against the ancillary perils, rather than in response to the central question of species establishment and competition.

Plainly the lawmakers in oyster growing areas have not dealt with this problem adequately. It is difficult to dispute the need for careful state regulation of the introductions of new shellfish species, but the guidelines or criteria for determining whether a new species should be introduced must be established

based upon the current state of scientific knowledge of the possible risks and benefits presented.

While governmental regulation appears to be necessary, it does not answer or resolve all the legal uncertainties presented by the introduction of a new species. Let us assume that both Maryland and Virginia approve the introduction of Crassostrea gigas. One enterprising leaseholder then decides to invest in a shipment of Japanese seed for planting on several hundred acres of his private grounds, hoping for faster growth rates, greater resistance to pests, diseases and salinity variances, or more reliable reproduction than he had been able to obtain with Crassostrea virginica. We can further assume that a shipment of seed arrives, is inspected for pests and diseases, and is cleared for distribution on a large leased area along the western shore of the Chesapeake Bay.

By his venture, this entrepreneur has created a number of risks of economic loss to watermen dependent upon public oyster bars and to lessees of other private oyster leases using Crassostrea virginica. One obvious hazard is the possibility of bringing in an oyster predator or disease. One of the most destructive pests in the Puget Sound area is an oriental species of oyster drill, Tritonalia japonica, which was accidentally imported.⁶⁹ The spread of the fungus Dermocystidium marinum and the microparasite MSX is believed to have been tied to oyster

transplantations.⁷⁰ Is it possible to inspect a shipment of seed oysters so thoroughly as to eliminate any possibility of a disease or pest infestation? If not, they present a substantial risk of damage beyond the boundaries of the entrepreneur's leased ground.

A second area of risk is escape. Although at first blush, the idea of escaping oysters seems like a ludicrous concern, the reproductive process admits the possibility of spatfall from the introduced species several miles from the planting location. Tidal current velocities in the Bay vary from nearly zero to over two knots,⁷¹ and C. gigas larvae could well be swept to the beds of C. virginica under cultivation on other leased or public grounds. There is no way to prevent such an occurrence in open water culture and the only restraint on this spreading would be the inability of the introduced species to reproduce and thrive in the host waters. Once introduced into existing C. virginica beds, it is conceivable that a new species could become more abundant. Would this constitute potential economic loss? The answer depends on the relative desirability and marketability of the two species. If the new species is inferior in taste or market acceptability, the leaseholder or waterman will suffer a loss equal to the decrease in revenues caused by the lesser quality of much of his harvest. This loss may be offset by an increase in production, if such an increase occurs.

Existing legal institutions are not likely to provide a ready solution to the problem of shifting economic losses occasioned by the introduction of a new oyster species. An oyster planter who suffers such a loss could bring a lawsuit under one of several legal theories: nuisance, trespass or negligence theories are among the most likely to be employed.⁷² However, the litigants would face substantial practical difficulties in proving that a loss resulted from a specific importation by a specific defendant. Quantifying damages could be a wildly speculative exercise where harvests and prices are constantly changing, and where heavy rainfalls or winter icing might decimate the oyster population on a given bar. It may be possible to prevail in a case if the importation occurred only one time and if the damage could be positively linked to that importation. Some leaseholders may be able to establish the value of an annual harvest by careful record keeping so that, assuming no other significant variables, the loss resulting from someone else's importation of a new species could be quantified within reasonable limits. Nonetheless, the costs in legal fees, expert witness fees and court costs could easily be expected to exceed \$10,000. Since there is no administrative forum in which such claims could be adjudicated, a damaged planter would be forced to simply absorb his losses or face an expensive court process with little certainty to the outcome.

All this points to the necessity of proceeding with caution in the introduction of a new species in an area, like the Chesapeake Bay, which supports an existing oyster fishery using a native species. Ultimately, administrative agencies must make the difficult decision to allow or to prohibit an importation. But these agencies and the legislatures which must authorize the agencies to make such decisions must look to the scientific community to determine with some certainty the likely consequences attending the introduction of a new species. Our legal institutions can prevent an importation, regulate the manner of importation or even adjust the claims of those who are damaged, but they are powerless to restore the biological integrity of the Bay once the decision has been made to introduce a new species.

Notes and References

1. Va. Code Ann., §28.1-203; Md. Ann. Code, Nat. Res. Art., §4-306.
2. Alford, "The Chesapeake Oyster Fishery," *Annals of the Association of American Geographers*, Vol. 65, pp. 229-239 (1974) [hereinafter cited as Alford].
3. Va. Cod Ann. §§28.1-100, 101, 109, 111, 149-159; Md. Ann. Code, Nat. Res. Art., §§4-1102 and 1108(c).
4. Va. Cod Ann., §§28.1-100, 149-159.
5. Md. Ann. Code, Nat. Res. Art., §§4-1101(i).
6. *Id.*, §4-1102. See, e.g., Popham v. Conservation Comm'n., 186 Md. 62, 46 A.2d 184 (1946).
7. Md. Ann. Code, Nat. Res. Art., §§4-1109(c) and 1101(i). See discussion in Pickford v. Koeneman, 262 Md. 71, 79, 277 A.2d 1 (1971), and Power, "More About Oysters than You Wanted to Know," 30 Md. L. Rev. 199, 212-216 (1970) [hereinafter cited as "More About Oysters"].
8. Md. Ann. Code, Nat. Res. Art., §4-1109(c). Note that the provisions which require a de novo judicial determination of the extent of natural oyster bars is almost certainly unconstitutional. See Department of Natural Resources v. Linchester Sand and Gravel Corp.,

274 Md. 211, 334 A.2d 514 (1975), discussed in Tomlinson, "Constitutional Limits on the Decisional Powers of Courts and Administrative Agencies in Maryland," 35 Md. L. Rev. 414 (1976).

9. Haven, D., W. Hargis and P. Kendall, The Oyster Industry of Virginia: Its Status, Problems and Promise, Virginia Institute of Marine Science (1978).

10. Alford, supra n. 2, p. 234.

11. Md. Ann. Code, Nat. Res. Art., §§4-1108(d) and 4-1112(c). It seems that the latter section was mangled somewhat in the most recent recodification, but clearly was intended to limit the amount leaseable by one person to the maximum size limit for parcels leased.

12. Va. Code Ann., §28.1-109(8), (9) and (10).

13. Md. Ann. Code, Nat. Res. Art., §§4-1108(a) and 4-1112(c); Va. Code Ann., §28.1-109(2).

14. Va. Code Ann., §28.1-109(11); Md. Ann. Code, Nat. Res. Art., §4-1110, (personal communication with Ms. Jones, Maryland Fisheries Administration, August 4, 1978).

15. Va. Code Ann., §28.1-109(12); Md. Ann. Code, Nat. Res. Art., §4-1110(a).

16. Va. Code Ann., §28.1-134; Md. Ann. Code, Nat. Res. Art., §4-1116 and 1013. Power dredging is also permitted Monday through Saturday in Wicomico County, Maryland. Id., §4-1117.
17. Va. Code Ann., §28.1-96.
18. Md. Ann. Code, Nat. Res. Art., §4-1103(e)
19. Id. §4-1108(b).
20. Potomac River Compact of 1958, Article IV, Section 2(c).
21. Md. Ann. Code, Nat. Res. Art., §§4-1005, 1010-1013 (also COMAR 08.02.04.01, .03 and .05); Va. Code Ann., §§28.1-83, 84, 128-133, 143 and 146; Pot. R. Comm. Reg. II, Sec. 2(a) and (e).
22. Md. Ann. Code, Nat. Res. Art., §§4-1008 and 1009(a); Va. Code Ann., §§28.1-82, 85 and 139; Pot. R. Comm. Reg. II, Sec. 2.
23. Md. Ann. Code, Nat. Res. Art., §4-1015; Va. Code Ann., §§28.1-85.1, 124-126; Pot. R. Comm. Reg. II, Sec. 2(f).
24. Md. Ann. Code, Nat. Res. Art., §4-742; Va. Code Ann., §§28.1-177 to 179; Pot. R. Comm. Reg. II, Sec. 2(d).

25. Md. Ann. Code, Nat. Res. Art., §§4-1003 and 1004(b); Va. Code Ann., §§28.1-120 to 123; Potomac River Compact of 1958, Article III, Sec. 4.
26. There have been dramatic historic fluctuations in the Bay's oyster harvest. Declines are most often attributed to overfishing, pollution closures and natural phenomena (predators, storms, etc.); recent increases seem a product of government replenishment programs and increased effort by watermen.
27. Haven, D., W. Hargis, P. Kendall, The Oyster Industry of Virginia: Its Status, Problems and Promise (An Extremely Brief Summary of a Large and Extensive Work), p. 1, Virginia Institute of Marine Science (1978).
28. Enclosed letter from Kirby A. Carpenter, Asst. Exec. Secretary, Potomac River Fisheries Commission dated July 28, 1978.
29. Information provided by the Maryland Fisheries Administration, Maryland Department of Natural Resources.
30. Such programs are authorized in the several jurisdictions by the following statutes: Md. Ann. Code, Nat. Res. Art., §§4-1103 and 1106; Va. Code Ann., §§28.1-85.1, 94, 94.1 and 195(b); Potomac River Compact of 1958, Article III, §§ 1 and 5.

31. Information provided by the Maryland Fisheries Administration and the Potomac Fisheries Commission.
32. 431 U.S. 265 (1977).
33. Va. Code Ann., §28.1-60.
34. 431 U.S. at 269-270.
35. Id.
36. Seacoast Products, Inc. v. Douglas, Civil Action No. 75-69-NN (E.D. Va. 1975) (unreported).
37. 431 U.S. at 286-287.
38. Id. at 281.
39. 9 Wheat. 1, 212-214 (1824).
40. 46 U.S.C. Section 263.
41. 431 U.S. at 281.
42. 46 U.S.C. Section 263.
43. Letter of February 3, 1978, from Eleanor P. Fischer, Chief, Records and Publications Branch, Merchant Vessel Documentation Division, United States Coast Guard.
44. 46 C.F.R. 67.07-13(a).

45. 431 U.S. at 285-86.
46. 46 U.S.L.W. 4773 (June 20, 1978).
47. *Id.* at 4777.
48. 261 Md. 585 (1971).
49. *Id.* at 601.
50. Lewis and Strand, The Mobility of Oystermen and its Impact on the Management of the Maryland and Chesapeake Oyster Industry, University of Maryland Sea Grant Program, 1978.
51. See, e.g., Alford, supra at n. 2, or Suttor, R. E., "The Chesapeake Bay Oyster Fisheries: An Econometric Analysis," Agricultural Experiment Station, Misc. Pub. 740, University of Maryland, College Park, Maryland, 1970.
52. It is difficult to make comparisons on boat days between the states because method and efficiencies vary substantially; however, on the Potomac River, where both have access, Virginians land far greater amounts of oysters. In December, 1976, for example, Virginia landed over 200 times the amount that Marylanders landed. Obviously, there are more opportunities to get to denser oyster beds in Maryland.

53. Annual Reports, Virginia Commissioner of Marine Resources, 1975, reports around 100,000 leased acres in Virginia in 1974, whereas personal communication with Mr. F. Sieling, Maryland's Department of Natural Resources, revealed 9,025 acres in Maryland in 1977.

54. See n. 43, supra.

55. See discussion in Power, "More About Oysters," supra, n. 1, at 200.

56. Md. Ann. Code, Nat. Res. Art., §4-1108 et seq;
Va. Code Ann., §62.1-4 and §28.1-108 et seq.

57. Md. Ann. Code, Nat. Res. Art., §§4-1108(a) and
4-1112(b); Va. Code Ann., §28.1-122.

58. E.g., Burton v. Wilmington Parking Authority, 365 U.S. 715 (1961). An argument might be made that a state could lawfully prohibit an alien from acquiring a property interest, such as a leasehold, within its borders. See, e.g., Blythe v. Hinckley, 180 U.S. 333, 341-342 (1901). But "[r]ecently the Court has taken a more restrictive view of the powers of a State to discriminate against non-citizens with respect to public employment, compare Crane v. New York, 239 U.S. 195 (1915), aff'd. People v. Crane, 214 N.Y. 154, 108 N.E. 427, and Heim v. McCall, 239 U.S. 175 (1915), with Sugarman v. Dougall, supra; and with respect to the distribution of public funds and the allocation

of public resources, compare McCready v. Virginia, 94 U.S. 391 (1877), and Patsone v. Pennsylvania, 232 U.S. 138 (1914), with Graham v. Richardson, *supra*, and Takahashi v. Fish and Game Comm'n., *supra*." Examining Board v. Flores de Ortero, 426 U.S. 572, 604 (1976). This argument would have no application to nonresidents who are not aliens and who seek oyster leases.

59. 'Grandfather provisions in state fishing license laws which effectively exclude nonresidents have been found unconstitutional. In Reetz v. Bozanich, 297 F. Supp. 300 (D. Alas. 1969) (vacated on other grounds, 397 U.S. 82) a federal court held that state laws which limited the total number of licenses and which granted preferential treatment to previous license holders violated the Equal Protection Clause. The principal authority for that holding, Morey v. Doud, 354 U.S. 457 (1957) was subsequently overruled in New Orleans v. Dukes, *supra*. See also, Note, "Massey v. Apollonio: Is Residency a Permissible Conservation Device?" 6 Env. L. Rev. 543, 558-559 (1976); and Dobard v. State, 147 Tex. 332, 233 S.W. 2d 435 (1950), discussed in Comment, "The Constitutionality of a Program Restricting the Number of Commercial Fishermen in the Coastal Waters of the United States," 34 La. L. Rev. 801, 816 (1974).

60. Note that Maryland law also prohibits corporations from leasing private oyster beds. This provision

limits the size of the economic unit engaged in oyster cultivation and the capital resources available for that activity. Also, the discrimination against corporations may be invalid under the Fourteenth Amendment. See Power, "More About Oysters," supra n. 1, 219-220; and Edwards v. Leaver, 102 F. Supp. 698 (D.R.I. 1952).

61. "The Maryland State Budget for the Fiscal Year Ending June 30, 1979," Vol. I, pp. 474-475.
62. Md. Ann. Code, Nat. Res. Art., §4-1115(a).
63. Md. Ann. Code, Nat. Res. Art., §4-1103(a).
64. Md. Ann. Code, Nat. Res. Art., §4-1106(a).
65. Potomac River Compact of 1958, Art. VII, Section 2.
66. Va. Code Ann., §28.1-183.2
67. Id.
68. Rev. Code of Washington, §75.08.054.
69. L. E. Cronin, "The Role of Man in Estuarine Processes," Estuaries Publication No. 83, p. 681, American Assoc. for the Advancement of Science (1967).
70. Id.

71. Tidal Current Tables, NOAA, Atlantic Coast of North America.

72. See generally, W. Prosser, Torts (4th ed. 1971).

DISCUSSION

Nelson: Under the Douglas case, federally registered boats could not be excluded from fishing. This is for boats of greater than 5 tons displacements. How does this legislation relate to vessels of less than 5 tons displacement?

Lewis: I think that the principles underlying the Douglas decision, aside from the narrow question of vessel registration, still apply to the unregistered fishermen and their boats.

Power: It seems relevant to ask whether or not the owner of a vessel of under 5 tons displacement could successfully apply for and obtain a federal registration for that vessel.


Blogaslawski: I own a vessel of less than 5 tons and did apply for federal registration. I was told that due to its size, the vessel could not be federally registered. I did not challenge the decision.

Shaw: In the case of Maryland about \$1,000,000 per year of state tax money is invested in maintaining the oyster bars in state waters. Thus, it could be said that Maryland manages its oyster fishery whereas the Menhaden Fisheries are essentially unmanaged at the state level. Does this investment of state money by Maryland not allow it certain jurisdiction over the exploitation of the Oyster Fishery?

Lewis: I don't think that you can avoid the principles that the United States are a "common market" by investing state money in a resource.

Haskins: Is there sufficient flexibility within the federalism concept to allow for differential licensing fees for residents and nonresidents based upon the financial input of the state to maintaining the fishery?

Power: This argument could be made if you could demonstrate a good relationship between the magnitude of the state subsidy and the differential in the license fee.

 Nelson: A comment, I believe, that the productivity of the private leases in Maryland is approximately four times that of public bars despite the fact that the latter are generally on superior bottom.

Power: That is a good point of emphasis.

Andrews: This may not all be a one way street in favor of Virginia in that Maryland is generally short of seed oysters and would be able to collect seed in the James River, VA area.

Power: There is another, as yet unchallenged, discrimination in the Maryland oyster laws which excludes corporations from participating in the oyster business.

I think that this is unconstitutional. It is obviously a significant discouragement to bringing modern technology to the Bay.

Lipovsky: I would just like to comment that in Washington state, about 80-90% of the oyster harvest is collected by hydraulic or mechanical dredge. This does not appear to have resulted in any detrimental effect on the fishery. In fact, there is some question as to whether or not tilling an oyster bed with a bagless dredge is in fact beneficial.

Lewis: Virginia also allows such dredging.

Chew: In the state of Washington, there are hearings pending, relating to the use of escalator dredges for clams and goeducks. If the decisions are made in favor of the local residents and environmentalists, and against the fishermen, there are some definite negative implications to the future use of dredges for the oyster industry.

Nelson: In New England, I think it is fair to say, we would have no oyster industry were it not for the mechanical dredge.