Conference on Gulf & South Atlantic Fisheries:

LAW & POLICY

March 18-20, 1987
New Orleans, Louisiana

LOUISIANA SEA GRANT LEGAL PROGRAM OF
THE LOUISIANA SEA GRANT COLLEGE PROGRAM
COASTAL AND MARINE LAW RESEARCH PROGRAM OF
THE MISSISSIPPI-ALABAMA SEA GRANT CONSORTIUM

PROCEEDINGS

M. Casey Jarman
Daniel K. Conner
Editors

LOUISIANA SEA GRANT College Program

Michael W. Wascom
Frederick C. Whitrock
Co-Sponsors

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PROCEEDINGS

CONFERENCE ON GULF & SOUTH ATLANTIC FISHERIES: LAW & POLICY

March 18-20, 1987
Royal Sonesta Hotel
New Orleans, Louisiana

Sponsored by
Louisiana Sea Grant Legal Program
Mississippi-Alabama Sea Grant Consortium

Prepared by
Coastal & Marine Law Research Program
Law Center
University, MS 38677
July, 1987

M. Casey Jarman
Daniel K. Conner
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PREFACE

Conferences on fisheries law and policy are not a new idea. The University of Washington School of Law began its annual series of Fishery Law Symposiums in 1982, and in 1986 the Marine Law Institute of the University of Southern Maine followed suit in sponsoring a Conference on East Coast Fisheries Law and Policy. The former, held in Seattle, is mostly concerned with fishery management and trade issues of the Pacific coast, while the latter covered the same for the North Atlantic seaboard. Until now, the substantial contribution of the South Atlantic and the Gulf of Mexico to the nation's fisheries resources has lacked a forum for discussion of legal and policy issues.

The time had clearly come to provide such a forum. A discussion of the issues and an airing of differences in the context of law and policy was long overdue. The Gulf Coast and South Atlantic--until recently perhaps the most placid of the nation's shorelines in terms of fishery resource conflicts--erupted in controversy during 1986. Fishery managers everywhere know that their craft is never a smooth process, and is never entirely free of controversy. Yet if one were to judge by the relative calm of the fishery management process in the Gulf and South Atlantic in 1985 and the years preceding, it would have been hard to predict the vehemence of the discussion that surrounded volatile issues such as redfish management and the possibility of requiring Turtle Excluder Devices (TEDs) on shrimp trawlers.

This Conference, held in New Orleans from March 18 through March 20, 1987, presented an opportunity, not only to air our differences and to learn from past mistakes, but also to tabulate our accomplishments. Our presentations are of uniformly high quality, and reflect the experiences and studies of those actively involved in fishery resource issues. Most of our presenters were lawyers, as befitted a Conference devoted to discussion of law and policy. Yet we have valuable contributions also from non-lawyers: from resource managers, economists, extension specialists, and enforcement agents. A diverse collection, yet one that is representative of the diversity of the resource itself, of those who pursue it for a living, and those charged with responsibility for its management.

The editors of these proceedings and the hosts of the Conference itself wish to thank the Sea Grant Directors of their respective states, James Jones and Jack Van Lopik for their support and for underwriting the cost of this gathering of experts and students, thereby making it possible. Thanks are due also to Mike Wascom, Director, and Fred Whitrock, Associate Attorney, of the Louisiana Sea Grant Legal Program, Louisiana Sea Grant College Program, for their help in soliciting and rounding up these papers, and for co-sponsoring the Conference.

M. Casey Jarman
Daniel K. Conner
Editors
July, 1987

WELCOMING COMMENTS

Jack R. Van Lopik

On behalf of the Louisiana and Mississippi/Alabama Sea Grant College Programs, I would like to welcome you to New Orleans and to this Conference on Law and Policy concerning Gulf and South Atlantic fisheries.

Jimmy Jones, Director of the Mississippi/Alabama Sea Grant Program, and I are pleased that the legal sections of our respective Sea Grant operations have joined forces to host this event. You will be hearing later from LSU's Mike Wascom and Fred Whitrock, and from Casey Jarman and Dan Conner of the Alabama/Mississippi Program during the Conference.

I would like to take a few minutes to briefly mention the long history and significance of the Sea Grant Legal Program at LSU. In 1968, when the program was established, an attorney was the first new faculty member hired for the activity. In spite of what you may have been told, this is not standard operating procedure for starting operations in Louisiana. This audience will probably know many of the people who have been affiliated with the program over the years. Gary Knight, Marc Hershman, Kai Midboe, Margaret Davidson and Frank Craig are just of few of the names that come to mind. In any event, the importance of legal support for Sea Grant activities was recognized very early, and we have had a long and continuing interest in legal aspects of coastal and marine resources management.

Marine-related legal issues will continue to increase in importance. For one thing, Congress has given us every indication that it hates to make hard choices. So it writes vague laws. This, in turn, leads to numerous lawsuits, and leaves the courts looking for "legislative intent" to interpret statutes. Courts are also left to determine what to do when a noble but vague goal, written into law, conflicts with another statute of similar vagueness. Furthermore, as the government regulates more and more aspects of human activity, there is more and more to sue about. The terms TEDs, redfish, user fees and management plans all sound litigious.

Fortunately, we are well stocked with attorneys to litigate such issues. The United States now has some 700,000 attorneys, and 100,000 of them started practice during the past five years. In the District of Columbia, one in every 23 men, women, and children is an attorney. Cynics may say that this is part of our problem. The fact is, however, that during the past decade or so many of our nation's "best and brightest" have been attracted to the legal profession, and view it as an honorable and rewarding occupation.

To the growing frustration of many of these people, they must often solicit scientific and technological support. In far

too many cases the scientific database and level of understanding are simply not adequate to make truly informed decisions. Yet decisions must be made. Consequently, a vital aspect of Sea Grant's role should be to obtain feedback from attorneys and resource managers, that we may design better research programs--ones that address real-world needs and aid in making more informed resource management decisions. This must be done more effectively if we are to overcome the general perception that both scientists and attorneys are often guided by Mark Twain's comment, "First get the facts--then you can distort them to meet your purpose."

Academics have spent considerable time discussing whether science drives technology and engineering, or whether technology drives science by increasing the demand for new knowledge. More attention should be given to the issue of whether science drives policy, or whether policy initiatives lead to the scientific advances that are required to effectively implement such initiatives. Obviously, it is a two-way street, but conferences such as this should aid in better defining and mobilizing needed research efforts.

Again welcome and best wishes for a successful meeting.

FISHERIES LEGISLATIVE INITIATIVES FOR THE 100th CONGRESS

By

William E. Evans, Ph.D.
Assistant Administrator for Fisheries
National Oceanic and Atmospheric Administration
Washington, D.C.

ABSTRACT

Fisheries management, as conducted under the Magnuson Fishery Conservation and Management Act, has been the subject of recent study and debate. At the heart of the issue is the concern that the process is overtly political without a continuing purpose. Two recent studies have proposed substantive change. This paper reviews those studies and near-term responses to their recommendations. The concept of a national marine fishing license also is explored.

I am extremely pleased to be with you today to discuss marine fisheries initiatives. I look forward to discussing the legislative climate with you, and to hear what other panelists have to say as well. Frequently, we in Washington, scientists, doctors and even lawyers, spend too much time talking to each other (preaching to the choir if you will) and not enough time discussing issues and ideas with knowledgeable and interested people outside their professional community. A consequence, in spite of well intentioned efforts, can be "inbred" thinking resulting in weak ideas. I believe it is critical that we get input from those who are most affected by or most sensitive to our proposals. This is particularly important when the Government considers legislative initiatives that portend significant change in policy or program activity.

We have a number of items on our legislative agenda for the 100th Congress. The Endangered Species Act needs to be reauthorized. We would support reauthorization of the Act, without amendment, for another five years to maintain its important conservation programs. We may also seek legislation in the areas of interjurisdictional fisheries and habitat conservation.

We also plan legislation as part of our efforts to reduce the budget deficit. For example, we continue to support the transfer of operation and maintenance responsibility for Columbia River hatcheries to the Bonneville Power Admin-

istration Fund. We believe the rate payers are the primary beneficiaries of the power generated by the Columbia River dams and, therefore, should bear the cost of the hatcheries operated to mitigate the fisheries impacts. We would like legislation to abolish the S/K grants program and to redirect S/K receipts to the General Treasury. We also will seek legislative authority to make no new commitments to guarantee loans in FY 88 under the Federal Ship Financing Fund's obligation guarantee program.

Today, I want to exercise a speaker's prerogative by focusing on two areas. First, I want to tell you about our plans and current thinking with respect to operations under the Magnuson Fishery Conservation and Management Act (Magnuson Act). Second, I want to provide a brief overview of our proposed Marine Fisheries Conservation Assurance Program Act of 1987. In both cases I want to discuss the concepts behind our thinking rather than specifics of legislation.

Magnuson Act

The closing year (1986) of the first decade of Federal jurisdiction over marine fishery resources was marked by a broad debate on the effectiveness and cost of the "new system of government" established by the Magnuson Act. That new system is admirable in its many particulars, but so carefully balances the many interests involved that national priorities are muddled and responsibility has become a football. The result is perceived by many to be an overtly political process without a continuing purpose. The debate has advanced to a consideration of basic principles at a time when we have the opportunity to put the system and its funding on firmer ground.

The debate was initiated by the Administrator of NOAA who commissioned two studies of fishery management: one to examine the NOAA/Council relationship, and the other to explore alternatives to the Magnuson Act system. The impetus for the debate is the need to respond to findings of administrative messiness, to reduce costs to the general taxpayer, and to reduce Federal regulation while conserving the resources for the greatest overall benefit of the Nation.

While the debate will continue, recent legislation (P.L. 99-659) reauthorized the Magnuson Act for another two years. Some needed course corrections were made, thus preempting fundamental change from the near-term legislative agenda.

The studies of the last year or so indicate that improvements are still possible within the framework of the Magnuson Act, through regulatory and policy actions. Indeed, both studies made recommendations that, for the most part, do not require legislation. In affirming the Council

system, the studies ruled out the possibility of significant cost savings, but suggested that resource users should pay a larger share of the costs. Organizational and budgetary changes also could better focus Federal resources on high priority activities to accomplish what must be done rather than spreading available resources thinly everywhere. The NOAA Fishery Management Study found that conserving the resource ought to be the continuing purpose of fishery management and suggested several ways to safeguard basic conservation decisionmaking from the politics of allocation. Neither study offered much immediate hope for reducing the Federal regulatory burden. The best hope for reducing regulation lies in market-based, resource share systems which are radically different and politically difficult even to consider.

The continuing debate is not over the existence of politics in fishery management, but whether the Federal role is that of a guarantor of resource and fishing interests, a referee, or simply a source of data to feed the system. Management involves a choice among alternative allocations and exploitation rates, based on scientific assessments of stock status and prospects. The issue is how to structure the choice to provide the greatest overall benefit of the Nation? Views range widely.

At one end, there is the Endangered Species Act which puts a ceiling on the long-term rate at which resources may be exploited. Purposes of the Magnuson Act aside, this statute expresses national policy in favor of preserving some minimum opportunities for future generations. Some say this is all the control we need. At the other end, there is maximum sustainable yield. In concept, MSY is a level of fishing that maintains a maximum surplus over the long-term. Some say this level is the ideal that management should pursue. The assumption is that the politics of management operates between these poles. Are we content to let the choice float?

Management needs some anchor that is more conservation-oriented than preventing overfishing. Under the current definition, if preventing overfishing is our standard then you don't need most of the Magnuson Act. Overfishing is prevented by the Endangered Species Act. We are considering revisions to the Magnuson Act regulations to provide a new standard whose aim would be to maintain stocks above this minimum level.

The policy thrust of revised Magnuson Act regulations is improved accountability for the results of fishery management. This was an early theme announced by Dr. Calio and, as events have transpired, may be the principal objective achieved as a result of the debate on fishery management. The conservation/allocation distinction made by the NOAA

Fishery Management Study provides a basis for sorting out roles and responsibilities. Without changing the Magnuson Act system, the Secretary can take responsibility for defining a level of fishing mortality that would not worsen the condition of managed stocks based on the best biological information and advice available. The Councils would then have the responsibility for allocating available fishery resources within these parameters or deviating from the basic, resource-related information. Deviation could be justified on the basis of overriding social or economic considerations, subject to consistency with the national standards, other provisions of the Act, and other applicable law.

The quality of allocation decisions is strongly dependent on the membership of the Councils. A principal objective of the Fishery Management Study and P.L. 99-659 is to assure confidence in the qualifications, representativeness and responsibility of Council members. The new law tightens the standards for Council membership and requires disclosure of each member's interest in the fisheries of the region. These provisions of the new law, along with an oath of office and an orientation for new members as recommended by the Fishery Management Study, will be implemented in the revised Magnuson Act regulations to strengthen accountability.

Apart from considerations of regulatory revision, the fishery management debate has focused attention on the need to shorten the pipeline for review of FMPs and amendments, and to obtain and apply the best scientific information available. Both of these are affected by improved accountability. The clearer accountability for basic biological information must lead to renewed emphasis on fishery research and data gathering. Review will be shortened to the extent that better standards of conservation are provided. Further, NMFS is being reorganized so that institutional matters do not interfere with the goals of efficient Secretarial action and quality science.

In summary: 1) the Magnuson Act is reauthorized through FY 1989 with improvements, 2) most of the recommendations of the two studies can be implemented administratively, and 3) regulatory revision is being considered in conjunction with implementation of P.L. 99-659.

Probably the most controversial proposal arising from the Magnuson Act study is the marine fishing license system. The legislative debate concerning this proposal should be extremely interesting.

Marine Fishing License

The Administration has proposed a bill entitled the "Marine Fisheries Conservation Assurance Program Act of 1987." The legislation would impose modest user fees on marine fishermen, both commercial and recreational, who benefit from government conservation efforts. Revenues would be used to support state and Federal fishery conservation and management programs. The intent is to assure stable funding needed for high priority marine fishery needs, lessen the burden on the general taxpayer, and help reduce the budget deficit. We believe this proposal is a fiscally prudent approach and is consistent with sound public policy in other areas where natural resources are held in trust by the Federal Government.

At present, most Federal programs to conserve and manage our Nation's marine fishery resources are funded by general revenues, taxes paid into the General Treasury. Conservation and management, in a common property environment, require a general public investment, but the public deserves a royalty from those who make use of the resources held in trust for all the people. We believe since all marine fishermen derive significant benefits from the extensive Federal fishery programs that they should pay for the use of the resource.

Fees would be collected by the sale of marine fish conservation permits and stamps, and from an assessment on landing or delivery of fish for commercial purposes. Revenues would be shared with the coastal states. It is expected that the total revenue would approach $100 million annually.

Permits would be required to fish in all marine waters subject to tidal influence, including the Exclusive Economic Zone. All fishermen from 16 to 65 years of age would be required topurchase an annual permit. The permit would be valid in all marine waters during the calendar year.

The idea of licensing and charging a user fee for marine fishing is not new, particularly where there is an identifiable group benefiting from public expenditures or services. All of the coastal states charge some sort of fee, though often nominal, for commercial fishing. The Pacific Coast States all require some form of marine recreational fishing license. A few Gulf Coast States require a marine recreational fishing license, and efforts are ongoing to initiate a marine recreational fishing license in several east coast states, including Florida and Massachusetts. Bills (H.R. 2965 and H.R. 4788) to provide for state licensing of marine recreational fishermen were introduced in both sessions of the 98th Congress. So, the concept is not new. What is new is that the Federal Government is seeking to bring Federal policy on marine fishery resources

into alignment with state practice and its own practice in other natural resource areas.

Particularly where there is a Federal initiative into an area traditionally considered state domain, there is a period of controversy and debate, distillation of ideas, and compromise. The Federal marine fishing license proposal is very much in the period of controversy and debate. However, from a Federal perspective, we are convinced that the proposal is a fair and equitable way to realize a return to the general public for its investment in fishery conservation and management. We are committed to the concept, and we are eager to work with the Congress and constituents to enact this legislation during the first session of the 100th Congress.

My intent was to highlight basic concepts we are considering with respect to Federal marine fishery responsibilities. We are making every effort to improve the process and our performance under the Magnuson Act. We are working hard to establish a fair and equitable approach. We are counting on a public-spirited review of basic policy.

BIOGRAPHY

Dr. William E. Evans has degrees in education from Bowling Green State University and Ohio State University, and a doctorate in physiology, ecology, biology and animal behavior from the University of California, Los Angeles, CA. He is nationally recognized for his research on the behavior of marine animals, including dolphins, whales, tuna and sharks. Dr. Evans is Executive Director Emeritus of the Hubbs Marine Research Institute in San Diego, CA and Chairman Emeritus of the U.S. Marine Mammal Commission. He is currently the head of NOAA's National Marine Fisheries Service. Dr. Evans is married and has two sons.

FISHERIES JURISDICTION IN THE GULF AND SOUTH ATLANTIC

Michael W. Wascom
Sea Grant Legal Program
and Coastal Fisheries Institute
170 Law Center, LSU
Baton Rouge, Louisiana 70803

ABSTRACT

The states of Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, and North Carolina and the portions of the Gulf of Mexico and Atlantic Ocean adjacent to these states are located in the National Marine Fisheries Service's Southeast Region. These states are subject to their own jurisdictions, the jurisdiction of regional fisheries commissions, the jurisdiction of the regional state-federal fisheries management boards, the jurisdiction of the regional fisheries management councils and the jurisdiction of the National Marine Fisheries Service. This paper consists of a discussion of the different powers of these jurisdictions over commercial fisheries.

In this paper, I am going to discuss the agencies having commercial fisheries jurisdiction in the Gulf of Mexico and the South Atlantic. I'll first discuss the 5 Gulf states, the Gulf States Marine Fisheries Commission, the Gulf States-Federal Fisheries Management Board, and the Gulf of Mexico Fishery Management Council; then I'll discuss Georgia, South Carolina, North Carolina, the Atlantic States Marine Fisheries Commission, the South Atlantic State-Federal Fisheries Management Board, and the South Atlantic Fishery Management Council. This will cover all of the coastal states and associated water areas located in the National Marine Fisheries Service's Southeast Region. In conclusion, I will briefly discuss the National Marine Fisheries Service's role in this region.

By authority of the Submerged Lands Act, coastal states have jurisdiction over the territorial sea out to 3 nautical miles from shore. By virtue of U.S. Supreme Court decisions, Texas has jurisdiction out to 9 nautical miles off its shore and, Florida has jurisdiction out to 9 nautical miles off its western shore.

In Texas, fisheries* resources come under the jurisdiction of the Texas Department of Parks and Wildlife. The administrative head of the Department is the Executive Director. The fisheries policy and fisheries regulation-making authority is with the 9 member Texas Parks and Wildlife Commission which is in the Department. The head of the Commission is the Chairman. Three Commission members must be members of the general public. A person is not eligible for appointment as a public member if the person or the person's spouse: (1) is employed by or participates in the management of a business or other organization regulated by the Department or receiving funds from the Department; (2) owns, controls, or has, directly or indirectly, more than a 10% interest in a business entity or other organization regulated by the Department or receiving funds from the Department; or (3) uses or receives a substantial amount of tangible goods, services, or funds from the Department. An employee who is a paid consultant of a statewide association in the field of conservation or outdoor recreation may not be a member of the Commission nor may a person who cohabits with or is the spouse of a managerial employee or paid consultant of a statewide association in the field of conservation or outdoor recreation. Finally, a person who is required to register as a lobbyist by virtue of his activities for compensation in or on behalf of a profession related to the operation of the Commission can't be a member of the Commission.

The Commission regulates fisheries by enacting fisheries proclamations (regulations) for the Texas coastal counties. These proclamations do not require any legislative or executive branch approval in order to go into effect. Redfish and speckled trout, formerly the most important commercial marine finfish species in Texas, are currently regulated by statute, but Texas law allows the Commission to issue proclamations that will supercede some of these statutory provisions. The Commission has

*As used herein, the term "fisheries" means marine finfish, mollusks, crustaceans, and all other forms of marine animal life other than marine mammals, birds, sea turtles, corals and sea fans, and highly migratory species of finfish.

not yet done so. Shrimp and oysters are also currently regulated by statute, but these statutory provisions (as well as perviously adopted Commission proclamations) can be superceded by Commission proclamations after Commission approval and adoption of statutorily-mandated shrimp and oyster management plans prepared by the Department. The Commission has not approved and adopted such plans yet. There is some statutory regulation of finfish in general. Oyster cultivation leases are issued by the Department. Licensing is regulated by statute and administered by the Department. Fisheries research and enforcement are handled by the Department, through the Coastal Fisheries Branch of the Fisheries Division and through the Law Enforcement Division, respectively.

In Louisiana, fisheries jurisdiction rests in the Department of Wildlife and Fisheries. The administrative head of the Department is the Secretary. The fisheries policy and regulation-making authority is vested in a 7 - member, constitutionally - created Wildlife and Fisheries Commission in the Department. The head of the Commission is the Chairman. Three members of the Commission must be electors of the coastal parishes and representatives of the commercial fishing and fur industries; the other 4 must be electors of the state at large other than representatives of the commercial fishing and fur industries.

Although the Commission is the regulation-making authority for fisheries, most fisheries regulation is accomplished by statute. There is extensive statutory regulation of oysters, shrimp, finfish, crabs and clams. Oyster cultivation leases are granted by the Department.

Rules adopted by the Commission must be approved by oversight sub-committees of both the House and Senate Natural Resources Committees. If either subcommittee rejects a rule, the rule goes to the Governor. If both sub-committees fail to reject the rule or if the Governor approves the rule, the adopted rule can be issued as adopted by the agency, or with technical changes or with changes suggested by one or both subcommittees.

Licensing is regulated by statute and administered by the Department. The Department is responsible for fisheries research and enforcement - through the Seafood Division of the Office of Marine and Coastal Fisheries and through the Enforcement Division of the Office of the Secretary, respectively.

Fisheries jurisdiction in Mississippi is in the Department of Wildlife Conservation. The administrative head of the Department is the Director. The fisheries policy making and regulation-making authority is the Commission on Wildlife Conservation located in the Department. The head of the Commission is the Chairman. The Commission is composed of 5 members who are people with extensive knowledge in at least one of the areas of jurisdiction of the Commission. One of the Commissioners must be knowledgeable and experienced in marine fisheries management and have a bachelor's degree in marine technology.

Regulations of the Commission do not require any legislative or executive branch approval in order to go into effect.

The Commission's regulation-making power is somewhat restricted by statutory regulation of fisheries. The principal example of this is the regulation of oysters, which are primarily regulated by statute. Finfish are somewhat regulated by statute and there is some statutory regulation of shrimp and crabs. The Commission grants oyster cultivation leases.

Licensing is regulated by statute and administered by the Department. Research and enforcement are handled by the Department - through the Fisheries Division and the Enforcement Division of the Bureau of Marine Resources, respectively.

In Alabama, fisheries jurisdiction is in the Department of Conservation and Natural Resources. The administrative head of the Department is the Commissioner. The Commissioner is the fisheries policy making authority for the Department. Fisheries regulation-making authority is vested in the Commissioner and the Advisory Board of Conservation and Natural Resources which is in the Department. The head of the Advisory Board is the Chairman. The Advisory Board consists of the Governor, the Commissioner of Agriculture and Industries, the Director of the Agricultural Extension Service at Auburn University and 10 other members appointed by the Governor. These appointed members are selected with special reference to their training and experience along one or more of the principal lines of authority vested in the Department. The Advisory Board has authority to examine and amend or repeal fisheries regulations proposed by the Commissioner or existing regulations and to make additional ones with the approval of the Governor.

In order to go into effect all regulations have to be signed by the Commissioner. Regulations signed by the Commissioner (including those adopted by the Advisory Board and approved by the Governor) have to go before the Legislative Review Committee. If disapproved by the Committee, a proposed regulation has to go before the Alabama Legislature. If the Legislature takes no action or overrules the Legislative Review Committee, the rule goes into effect. If the legislature upholds the Legislative Review Committee, the regulation doesn't go into effect. If the Legislative Review Committee takes no action on the regulation, it goes into effect.

Oysters, shrimp, and finfish are partially regulated by statute, which restricts the regulation-making authority of the Commissioner and the Advisory Board somewhat. The Commissioner grants oyster cultivation leases.

Licensing is regulated by statute and administered by the Department. Research and enforcement are duties of the Department accomplished through the Marine Resources Division.

In Florida, fisheries jurisdiction is vested in the Department of Natural Resources. The administrative head of the Department is the Secretary. Fisheries regulation-making authority is vested in the Marine Fisheries Commission located in the Department of Natural Resources, and the Commission also has policy making authority. (There are a few fisheries regulations that were issued by the Department,

itself, prior to creation of the Commission, but if the Department regulations conflict with subsequently adopted Commission regulations, they are superceded by the Commission regulations. Some Department regulations have been superceded by Commission regulations and it is contemplated that all Department regulations will be eventually superceded by Commission regulations). The head of the Commission is the Chairman.

The Commission is composed of 7 members, each of whom has to have resided in Florida for 5 years. The Governor has to consider affected interests in making Commission appointments, and no single interest group can dominate the membership of the Commission. The Commission is empowered to develop management plans, consisting of the regulations adopted by the Commission and the supporting documentation of those regulations. The Commission always provides supporting documentation when it adopts a regulation, consequently, when the Commission adopts regulations for a species, it is also in effect, adopting a fisheries management plan for that species.

Regulations of the Commission have to be approved by the Governor and Cabinet sitting as head of the Department. The Governor and Cabinet may only approve or disapprove a regulation.

Currently, there is extensive statutory regulation of shrimp, oysters, and clams and some statutory regulation of finfish, blue crabs, stone crabs, spiny lobsters, and sponges. However, when the Commission was created, nearly all fisheries regulation statutes, and subdivisions thereof, were "conditionally" repealed. This means that as the Commission adopts a regulation that conflicts with a fisheries regulation statute that has been conditionally repealed, or a subdivision thereof, the statute or subdivision is repealed. Most fisheries regulation statutes will eventually be repealed in this manner.

There are also over 200 local fisheries regulation laws, that, at the time of the creation of the Commission, were made Department fisheries regulations. These regulations can be superceded by Commission regulations, and some have already been superceded.

The Department grants oyster and clam cultivation leases.

Licensing is regulated by statute, Department regulation, and Commission regulation and administered by the Department. Research and enforcement are handled by the Bureau of Marine Research and the Florida Marine Patrol of the Department's Division of Marine Resources and Division of Law Enforcement, respectively.

In a cooperative management agreement, the 5 Gulf states belong to the Gulf States Marine Fisheries Commission, established pursuant to the Congressionally approved Gulf States Marine Fisheries Compact of 1949. The Commission is a body established to assist the states in the coordinated regulation of the fisheries within their territorial waters. The Commission is composed of three commissioners from each state: (1) the top fisheries administrator in each state or his designee; (2) a

legislator from each state; and (3) a citizen of each state who is knowledgeable in marine fisheries, appointed by the Governor.

The Commission has the authority to study fisheries of the Gulf states, to recommend joint legislative action on territorial waters marine fisheries to the Gulf states' legislatures and joint regulations to the Gulf states' marine fisheries agencies. The Commission also developed a red drum profile together with the Gulf of Mexico Fishery Management Council.

The Commission has 4 standing committees: (1) the technical coordinating committee, or TCC as it is better known; (2) the law enforcement committee; (3) the recreational fisheries committee; and (4) the industry advisory committee. The TCC is composed of two scientists from each Gulf state. It coordinates Gulf fishery research from whatever funding source. The TCC has four subcommittees: (1) the Seamap Subcommittee, Statistical Subcommittee, Blue Crab Subcommittee and Anadromous Fish Subcommittee. The Seamap effort of the Commission is an example of the scientific community and fisheries managers getting together and working out fisheries research priorities for fisheries-independent research.

Although the compact allows for its amendment (subject to approval by Congress) by two or more states which wish to designate the Commission to serve as joint regulating authority for the joint regulation of specific fisheries affecting only such states, such a provision has never been adopted.

Federal input into the Commission's work is through the Gulf States-Federal Fishery Management Board, an autonomous group that works in conjunction with the Commission. The State-Federal Fishery Management Program was established to provide a mechanism for cooperative management of marine fisheries that transcend state and state-federal jurisdictional boundaries. State-Federal Fishery Management Boards were established for the purpose of determining fisheries in need of management, developing management plans, identifying data requirements, and implementing action programs necessary to achieve management goals and objectives. In the Southeast Region of the National Marine Fisheries Service, two State-Federal Boards were organized - one for the Gulf States and one for the South Atlantic States - under the authority of the respective Congressionally-approved interstate marine fisheries compacts existing in those regions. The state fisheries administrator who serves on the Gulf States Marine Fisheries Commission, the state legislator serving on the Commission, the Regional Director of the Southeast Region of the National Marine Fisheries Service, and the Region 4 Director of the U.S. Fish and Wildlife Service or their designees serve as the voting members of the Gulf States-Federal Fishery Management Board. Each state has one vote on all matters before the Board. The Executive Director of the Commission serves as a non-voting member of the Board.

The Board has developed three fishery management plans: (1) a shrimp management plan that became the starting point for development of the shrimp management plan developed by the Gulf of Mexico Fishery

Management Council; (2) a menhaden management plan; and (3) a striped bass management plan. The Board is somewhat similar to the Gulf of Mexico Fishery Management Council, only the Board has authority to recommend, not mandate, management actions to the states and is empowered to deal with only fisheries that transcend state and state-federal jurisdictional boundaries. The Board has one committee, the menhaden advisory committee. This is also true with respect to the South Atlantic State-Federal Fisheries Management Board and the South Atlantic Fishery Management Council.

Under the Magnuson Fishery Conservation and Management Act, the U.S. has undertaken to regulate fisheries resources in the U.S.' exclusive economic zone (EEZ), from the outer limits of the states' territorial waters out to 200 nautical miles. The U.S. regulates foreign fishing in these zones by means of treaties called Governing International Fisheries Agreements. Regulation of domestic fishing is accomplished through the development of fishery management plans by regional fishery management councils. In the Gulf, the EEZ is regulated by fishery management plans developed by the Gulf of Mexico Fishery Management Council. The Council is composed of the principal state official with fisheries management responsibility or his designee, the regional director of the National Marine Fisheries Service or his designee, and 11 members appointed by the U.S. Secretary of Commerce. These appointed members of the Council must be individuals who are knowledgeable or experienced with regard to the management, conservation, or recreational or commercial harvest of Gulf of Mexico fisheries resources. The Secretary appoints these members from a list of nominees submitted by the Governor of each Gulf state and has to appoint at least one member from each state. The nonvoting members are: (1) the Region 4 Director of the U.S. Fish and Wildlife Service or his designee; (2) the Commander of the Eighth Coast Guard District or his designee; (3) the Executive Director of the Gulf States Marine Fisheries Commission or his designee; and (4) a representative of the U.S. Secretary of State or his designee.

The Council is responsible for developing fishery management plans for each fishery in the Gulf of Mexico EEZ that requires management. Thus far, the Council has developed plans for shrimp, stone crabs, reef fish, and coral. In addition, it has developed joint plans with other councils for mackerels and swordfish. In developing management plans, the Council uses its Standing Scientific and Statistical Committee and special Scientific and Statistical Committees, which are composed of experts who advise the Council on the technical merit of the plans, and uses its advisory panels for various species, which are composed of members of a particular fisheries industry and which give the Council advice on the workability of a plan.

Fishery management plans have to meet 7 national standards that are set out in the Magnuson Act. One of these standards requires that fisheries plans not discriminate between residents of different states. Another requires that fishery management plans be based on the best scientific information currently available. A third national standard requires that, to the extent practicable, an individual stock of fish is to be

managed as a unit throughout its range and interrelated stocks of fish shall be managed as a unit or in close coordination. In order to accomplish this, there must be a coordinated working relationship between the regional fishery management councils, the State-Federal Fisheries Management Boards, the interstate commissions, the state agencies, and the National Marine Fisheries Service. This is facilitated by the membership composition of the interstate commissions, the State-Federal Fisheries Management Boards and the regional fisheries management councils.

Among the management measures fishery management plans may contain are the relevant fishery conservation and management measures of the coastal states nearest the fishery. This has been done in Gulf fishery management plans, as there have been cooperative shrimp closures offshore Texas and Florida between the Gulf Council and the states of Texas and Florida, and the spiny lobster and stone crab fishery management plans have adopted Florida management measures. This approach facilitates management of an individual fish stock throughout its range.

In the Magnuson Act, there is a formal procedure that allows the Secretary of Commerce to preempt a state's management authority in its territorial waters - other than the state's internal waters. If the Secretary of Commerce finds that the fishing in a fishery covered by a fishery management plan occurs predominately within and beyond the EEZ and that a state has taken any action or omitted to take any action the results of which will substantially and adversely affect the carrying out of a fishery management plan for that species, the Secretary is required to invoke promptly the procedure for preempting the state's management of its territorial waters. This is formal preemption.

There is also informal, or, supercession preemption with respect to state laws and fishery management plans. If a state law will conflict with provisions of a federal fishery management plan, then that state law will be superceded to the extent of the conflict. This is the case with the recently-published Secretarial Management Plan for Gulf of Mexico redfish. The Secretarial Plan allows for the commercial sale of a certain amount of redfish taken in the Gulf EEZ. To the extent that state laws prohibit the commercial sale, landing, and possession of redfish landed in a state - and several Gulf states have these prohibitions - those state laws will be superceded under the Secretarial Plan by authority of the Supremacy Clause of the U.S. Constitution.

Additionally, the Magnuson Act further addresses state fisheries jurisdiction by stating that nothing in the Act is to be construed as extending or diminishing the jurisdiction or authority of any state within its boundaries. And, the Act addresses state extra-territorial jurisdiction. The Act provides that a state may not directly or indirectly regulate any fishing vessel outside its boundaries, unless the vessel is registered under the laws of that state. Even so, if such a state extra-territorial regulation conflicts with a fishery management plan, it will be superceded even if the state is regulating a vessel registered under its laws. This statement of extra-territorial jurisdiction is much narrower than that formerly allowed by the U.S.

Supreme Court decision in Skiriotes v. Florida. That case had allowed extra-territorial regulation of its citizens by a state, regardless of where the vessel is registered. Now, only vessels can be regulated extra-territorially.

I'll now move to the South Atlantic, composed of the east coast of Florida, Georgia, South Carolina and North Carolina. Of course, I've already covered Florida. In Georgia, fisheries resources come under the jurisdiction of the Department of Natural Resources. The head of the Department is the Commissioner. The Department is under the fisheries policy and regulation-making authority of the Board of Natural Resources located in the Department. The head of the Board is the Chairman.

The Board is composed of 15 members appointed by the Governor - 1 from each of the 10 Congressional Districts, one appointed to represent the 6 coastal counties, and 4 at large appointees.

Board regulations do not require any legislative or executive branch approval to go into effect.

Most fisheries regulation in Georgia is accomplished by statute. There is extensive statutory regulation of oysters, clams, shrimp, crabs, and finfish. There is some regulation of eels by statute. Oyster and clam cultivation leases are granted by the Department.

Licensing is regulated by statute and administered by the Department. Research and enforcement are handled by the Coastal Resources Division and Game and Fish Division of the Department, respectively.

Fisheries resources in South Carolina are under the jurisdiction of the Department of Wildlife and Marine Resources. The Department is headed by the South Carolina Wildlife and Marine Resources Commission. The administrative head of the Department is the Executive Director. The head of the Commission is the Chairman. Fisheries policy and regulation-making authority is in the Commission.

The Commission is composed of nine members, one from each of the six South Carolina Congressional Districts, one at large-who is appointed by the Governor, the Chairman of the Fish, Game, and Forestry Committee of the State Senate, and the Chairman of the Agriculture and Natural Resources Committee of the State House of Representatives.

Regulations issued by the Commission must go to the General Assembly (legislature) which has 120 days to approve the regulations, disapprove of them, or hold hearings on them.

Most of the fisheries regulation in South Carolina is accomplished by statute. There is extensive statutory regulation of oysters, crabs, and shad, the latter, the most important commercial marine finfish in South Carolina. There is some statutory regulation of sturgeon, other finfish in general, shrimp, and prawns. Exclusive oyster and clam culture permits (analogous to leases) are issued by the Department.

The Commission has five advisory boards, one of which is the Marine Advisory Board. The Board hears reports from the Marine Resources Division of the Department and other sources. The Board, which represents the public, gives advice and recommendations to the Commission for fisheries action, including recommendations for fisheries regulations. Licensing is regulated by statute and administered by the Department. Research and enforcement are functions of the Marine Resources Division and the Law Enforcement Division of the Department, respectively.

In North Carolina, fisheries resources are under the jurisdiction of the Department of Natural Resources and Community Development. The head of the Department is the Secretary. Fisheries policy and regulation-making authority are vested in the Marine Fisheries Commission. The head of the Commission is the Chairman.

The Marine Fisheries Commission is composed of 15 members appointed by the Governor including: 1 member representing commercial fishing; 1 having a wildlife or sport fishing background; 1 with training and education in marine ecology; 1 with experience in coastal land development; 1 representing seafood processing and distributing; and 10 at large members, at least 7 of whom must be residents of a legislative district containing a county in the coastal area.

Rules of the Commission have to go to a legislative committee, the Administrative Rules Review Commission, for approval or disapproval.

Almost all fisheries regulation in North Carolina is accomplished through Marine Fisheries Commission regulations. The main exception to this is some statutory regulation of shellfish. There is also some slight regulation of finfish by statute. The Commission grants shellfish cultivation leases.

The Commission is empowered to delegate to the Secretary of the Department, acting through the Director of the Division of Marine Fisheries of the Department, the authority to issue proclamations suspending or implementing, in whole or in part, particular regulations of the Commission which are affected by "variable conditions". (The Secretary has delegated this authority to the Director of the Division of Marine Fisheries). Some examples of what constitutes "variable conditions" affecting regulations include conditions that affect determinations such as the dates for opening and closing seasons, the legal maximum and minimum sizes of a species, and the areas that are opened or closed for harvest. For instance, regulations of the Commission that involve the setting of seasons can be suspended or implemented, in whole or in part, by issuance of a proclamation. What constitutes "variable conditions" affecting a particular regulation is determined from the substance of that regulation.

There is general authority given to the Secretary by a Commission regulation to issue a proclamation <u>suspending</u>, in whole or part, regulations affected by variable conditions. The authority to <u>implement</u>, in whole or in part, Commission regulations affected by

variable conditions through issuance of a proclamation is set forth in the particular regulation to be implemented

The Chairman of the Commission may call an emergency meeting of the Commission, when there is a need to act on a regulation affected by variable conditions, to review proclamations issued or proposed to be issued under the authority of the Secretary (except those proclamations issued for reasons of public health) or to review the need to issue a proclamation to allow the taking of certain fisheries resources in areas not opened through proclamations issued under the Secretary's authority. After this review, the Commission may approve, cancel, or modify the proposed proclamation or the issued proclamation under review or direct the Secretary (and hence, the Director of Marine Fisheries) to issue a proclamation that allows the taking of certain fisheries resources.

Proclamations are issued by authority of the Commission and do not require any other executive or legislative branch approval to go into effect.

Licensing is regulated by statute and administered by the Department. Enforcement and research are performed by the Division of Marine Fisheries of the Department.

The four South Atlantic states are members of the Atlantic States Marine Fisheries Commission, established by interstate compact in 1940. As with the Gulf States Marine Fisheries Commission, the Atlantic States Marine Fisheries Commission is a body established to assist the states in the coordinated regulation of fisheries within their territorial waters. The Commission has the same membership structure as the Gulf States Marine Fisheries Commission, i.e., the top fisheries administrator or his designee from each state, a legislator from each state, and a citizen of each state who is knowledgeable in marine fisheries, appointed by the Governor.

The Atlantic States Marine Fisheries Commission, like the Gulf Commission, has the authority to study fisheries of the Atlantic states, to recommend joint legislative action on territorial sea marine fisheries to Atlantic states' legislatures and joint regulations to Atlantic states' marine fisheries agencies. These recommendations come in the form of fishery management plans for various species found in the waters of the Atlantic states. Of relevance to the South Atlantic states are the Commission's red drum, spotted seatrout, river herring and shad, and weakfish plans. The Commission is currently working on a bluefish plan.

Under the Commission's Interstate Fisheries Management Program, in fisheries management plan development, the Atlantic States Marine Fisheries Commission Advisory Committee, made up of state assistant fisheries directors or chiefs of research, recommends new species for development of fisheries management plans. Then a technical committee of scientists does a profile of the fishery and sets out management recommendations. This information then goes to a species management board, composed of some of the fisheries management directors of the states interested in the species proposed for regulation. The

information then goes to the Interstate Fisheries Management Program Policy Board, (ISFMP Policy Board), composed of all state fisheries agency directors (or their designees), the the Director of the Northeast Region of the National Marine Fisheries Service, and a Washington, D.C., representative of the U.S. Fish and Wildlife Service (these latter two consult with the Director of the Southeast Region of the National Marine Fisheries Service and the Region 4 Director of the U.S. Fish and Wildlife Service, respectively). If the plan passes the ISFMP Policy Board, it goes to the full Commission for approval.

The Atlantic States Marine Fisheries Commission Advisory Committee has taken on the additional duty of reviewing fishery management plans that are in effect and recommending to the ISFMP Policy Board whether the plans should be modified, changed, or updated. If the Advisory Committee recommends one of these three courses of action, the recommendation goes to a technical committee and the process set out above for approval of a fisheries management plan is followed in considering the recommendation.

The four South Atlantic States of the Commission have formed their own South Atlantic State-Federal Fisheries Management Board, composed of the fishery directors from each state plus the Regional Director of the Southeast Region of the National Marine Fisheries Service. Unlike the Gulf's State-Federal Fisheries Management Board, the South Atlantic State-Federal Fisheries Management Board is not autonomous from the Atlantic States Marine Fisheries Commission but works as part of the Commission by coordinating its (i.e. the State-Federal Fisheries Management Board's) activities with the ISFMP Policy Board. The State-Federal Fisheries Management Board coordinates the research efforts of the 4 states, works on the proposed fishery management plans, coordinates the collection of state-federal statistics and, this year, coordinated the South Atlantic's portion of the Seamap research program, a fisheries independent research program.

The states party to the Atlantic States Marine Fisheries Compact have amended the Compact to allow the Commission to serve as joint regulatory authority for two or more of them, but this provision hasn't been used in the South Atlantic.

The east coast of Florida and the states of Georgia, South Carolina, and North Carolina form the area covered by the South Atlantic Fishery Management Council. As with the Gulf Council, this Council regulates fisheries in the EEZ off the South Atlantic. The Council has 13 members, the heads of the states' fisheries agencies or their designees, the Director of the National Marine Fisheries Service's Southeast Region or his designee, and 8 members at large, at least one of whom must come from each state. The 4 non-voting members are the Executive Director of the Atlantic States Marine Fisheries Commission or his designee, the Region 4 Director of the U.S. Fish and Wildlife Service or his designee, the Commander of the 9th Coast Guard District in Miami or his designee, and a representative of the Secretary of State or his designee. The fishery management plan development process, the Scientific and Statistical Committee, and the advisory panels operate the same as with the Gulf Council. The South Atlantic Council has developed fishery

management plans for snapper and grouper and coral, developed mackerel and spiny lobster plans in conjunction with the Gulf Council and, as plan coordinator, has developed a joint swordfish plan along with 4 other Councils. None of these plans has incorporated state laws or regulations as part of the plan.

The National Marine Fisheries Service (NMFS) is the fisheries arm of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce. NMFS' mission is to promote the conservation, management, and development of living marine resources for commercial and recreational use. NMFS is responsible for implementing over 100 different statutes, among which are: the Magnuson Fishery Conservation and Management Act; the American Fisheries Promotion Act; the Fish and Wildlife Act of 1956; the Endangered Species Act; the Marine Mammal Protection Act; the Fish and Wildlife Coordination Act; the Saltonstall-Kennedy Act; the Merchant Marine Act of 1936 and the Merchant Marine Act of 1938. NMFS activities are in futherance of statutory regulatory requirements and also in the following areas: fisheries management; fisheries development; recreational fisheries; international fisheries; habitat conservation; law enforcement operations; endangered species; marine mammals; and financial assistance. NMFS serves as the reviewing agency for the Secretary of Commerce in his review of regional fishery management plans.

In St. Petersburg, Florida, NMFS has its Southeast Regional office. In Miami, Florida, NMFS has its Southeast Fisheries Center, which serves as headquarters for the six labs the NMFS has in the Southeast Region: Beaufort, North Carolina; Charleston, South Carolina; Miami, Florida; Panama City, Florida; Pascagoula, Mississippi; and Galveston, Texas.

Thus we see that the coastal states and associated water areas located in NMFS' Southeast Region are subject to a number of jurisdictions, state, interstate and federal. Effective and efficient fisheries management in this region requires a close working relationship between the agencies involved.

Submerged Lands Act 43 U.S.C. 1301 et seq. (State 3 mile territorial sea jurisdiction statute.

U.S. v. La., et al 363 U.S. 1 (1960) (Texas 9 mile territorial sea jurisdiction case).

U.S. v. Fla. 363 U.S. 121 (1960) (Florida 9 mile territorial sea jurisdiction case).

Texas Parks and Wildlife Code.

Title 56, Louisiana Rev. Stat. of 1950.

Title 49, Mississippi Code of 1972.

Title 9, Code of Alabama 1975.

Title XXVII, Florida Stat.

Title 27, Official Code of Georgia.

Title 50, Code of Laws of South Carolina, 1976.

Chapter 113, Gen. Stat. of North Carolina.

Gulf States Marine Fisheries Compact, PL 81-66, 63 Stat. 70 (1949).

The Shrimp Fishery of the Gulf of Mexico United States: A Regional Management Plan. Gulf Coast Research Laboratory, August, 1977.

Magnuson Fishery Conservation and Management Act 16 U.S.C. 1801 et seq.

Skiriotes v. Fla. 313 US 69 (1941) (Florida extra-territorial fisheries jurisdiction case).

Atlantic States Marine Fisheries Compact PL 77-539, 56 Stat. 267 (1942), PL 81-721, 64 Stat. 467 (1950).

American Fisheries Promotion Act of 1980, PL 96-561, 94 Stat. 3275 (1980).

Fish and Wildlife Act of 1956 16 U.S.C. 742a, et seq.

Endangered Species Act, 16 U.S.C. 1536, et seq.

Marine Mammal Protection Act, 16 U.S.C. 1361, et seq.

Fish and Wildlife Coordination Act 16 U.S.C. 661, et seq.

Saltonstall-Kennedy Act, 15 U.S.C. 713c-3

Merchant Marine Act of 1936, 46 U.S.C. 1171, et seq.

Merchant Marine Act of 1938, 46 U.S.C. 1271, et seq.

INTERJURISDICTIONAL CONFLICTS -- HOW CONSERVATION PROGRAMS ARE COMPROMISED BY THE POLITICAL PROCESS

Jay S. Johnson*

Abstract: The existence of multiple institutions with overlapping claims to manage migratory marine fishery resources has created an unnecessarily complex political situation. Where no single institution can provide coordinated management throughout the migratory range of the resource, the costs of management programs will be greater, and the effectiveness of conservation measures will be less certain. The paper suggests a redirection of state and federal fishery management institutions with each state assuming responsibility for conservation of marine fishery resources that migrate from its coastal waters to the exclusive economic zone. Concurrently, the Federal Government would assume greater responsibility for conservation of interstate migratory fishery resources.

Introduction. With the trepidation that befits a Yankee who ventures South to suggest a greater Federal role in anything, particularly in this Administration, I am pleased to address this conference. My last foray into the interjurisdictional fisheries debate took place at last year's Fisheries Law Conference at Portland, Maine. I began that presentation, and will begin this one, with a quotation from former Alaska Senator Mike Gravel that I hope you will keep in mind.

> "You cannot draw a political line in the water and hope that these fish are going to obey it or hope that people who make their livelihood there will have a unanimity of attitude at all times as to what conservation should be.
>
> If it means my making a lot of money this year as opposed to your making a lot of money this year, I am more for my conservation approach than for your conservation approach, because my conservation approach is going to have the merit and the virtue of making me a lot of money as I conserve." 1/

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* Assistant General Counsel for Fisheries, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Washington, DC 20230. The views expressed in this paper do not necessarily reflect those of any government agency.

Senator Gravel's remarks were in opposition to passage of the Magnuson Fishery Conservation and Management Act. He saw no constructive purpose that would be served in dividing fishery management authority between Alaska and the Federal Government at the three-mile limit of the territorial sea. With respect to fisheries that are adjacent to a single state, I agree.

My last paper focused on the legal constraints that apply to state, interstate, regional, federal and international fishery management institutions. 2/ I do not intend to describe those constraints in great detail today because I am more interested in describing problems and suggesting solutions. I will be speaking solely from my own perspective; what I may perceive as a failure of the existing management institutions may well be perceived as a success by others.

FAILURES

Atlantic Herring. In its August, 1978, fishery management plan (FMP), the New England Fishery Management Council noted that juvenile herring in the Gulf of Maine stock are largely found in areas within 3 miles of the State of Maine coastline while older fish could be harvested not only in Maine, but also in New Hampshire, Massachusetts, Rhode Island and in the fishery conservation zone (FCZ). 3/ The Council observed that since nothing in the Magnuson Act could diminish the jurisdiction of any state within its borders 4/, "appropriate institutional arrangements" between the state and federal managers would be needed to implement the FMP successfully. In fact, the FMP contained an explicit presumption: "that the State of Maine in the management of the fisheries for juvenile herring carefully considers the bioeconomic interaction between the juvenile and adult components of the Gulf of Maine herring stock and through appropriate measures . . . does not impede the achievement of the Council objective[s]." 5/

The problem was that most Maine fishermen caught juvenile herring for sardine canneries while most fishermen in other waters caught adult herring for filleting and freezing. The divergent economic interests appealed to different political institutions. The Maine fishermen sought the state's indulgence and got it. The others sought federal protection and fell short. Several amendments to the FMP failed to resolve these competing objectives. Maine, for compelling political reasons, would not restrict her sardine fishery in order to increase yields to fishermen from other states. The threat of federal preemption was not available because the fishery did not occur predominately in the FCZ. 6/ The FMP failed and the Secretary of Commerce withdrew approval and repealed the implementing regulations in 1983. 7/

My assessment: The herring stocks have not been rebuilt because the management institutions with competing claims to manage the resource did not agree on a shared objective. Since Maine had first access to the herring as juveniles, Maine could fulfill her objectives without relying on any action by the other states or the federal authorities. The reverse, however, was not true.

Striped bass: The migratory range of the Atlantic striped bass extends from North Carolina to Maine. It is largely confined to waters within 3 miles. That portion of the stock that spawns in Chesapeake Bay has been severely depressed for a number of years. 8/ Despite sound management measures contained in an interstate plan prepared by the Atlantic States Marine Fisheries Commission (ASMFC), several critical states failed to implement the plan. 9/ Unless explicitly given direct regulatory authority by its member states, ASMFC is powerless. Its recommendations must be adopted as state law. Some states refused; many delayed action.

The Mid-Atlantic Council, to its credit, began work on an FMP that would have applied the ASMFC recommendations in federal waters. But very few striped bass are caught in federal waters and preemptive action under the Magnuson Act was not possible. My client, the National Marine Fisheries Service, advised the council to discontinue FMP development because there was no assurance that complementary state action would be forthcoming. 10/

Eventually, as the Chesapeake spawning stock continued to decline, the U.S. Congress took up the problem and adopted special legislation to encourage the states to comply with the ASMFC plan. 11/ Under this legislation, the Secretaries of Commerce and the Interior may impose a moratorium on fishing for striped bass in any state that fails to comply. Even under that threat, New Jersey fishery managers have yet to convince their legislature to adopt the interstate plan. 12/

My assessment: There are too many jurisdictions. Although conservation problems in this fishery were apparent years ago, political considerations in each of the coastal states prevented adoption of a common objective. Congress' response was late, cumbersome, inflexible, and unnecessarily burdensome. Late because the evidence had to be overpowering to cause Congress to displace states' authority. Cumbersome because two federal agencies and the ASMFC must agree that a state has not complied. Inflexible and burdensome because the only federal response is a complete ban on fishing rather than a simple federal regulation to apply the ASMFC plan.

Tanner Crab: The Federal FMP developed by the North Pacific Council had as its original focus the elimination of foreign fishing. 13/ Understandably, this objective was shared by the Alaska Department of Fish and Game (ADF&G) and virtually all U.S. crab fishermen. Just when this objective was achieved, however, an unexplained collapse of the king crab stocks and increased world prices produced a rapid increase in Tanner crab fishing effort.

ADF&G responded with prompt, but frequently unexplained, openings and closings of fishing areas and districts. Non-resident vessels complained of discriminatory treatment and sought the protection of the federal authorities. The federal managers, however, could not change regulations as quickly as the state due to the Administrative Procedure Act requirement to explain the basis for all regulatory changes. 14/ Matters were also complicated by the Magnuson Act requirement that regulations implement the FMP, which in this instance was considerably out of date. 15/ In some instances, districts and areas were not closed in time.

To avoid the federal procedural requirements from causing overfishing, the Secretary of Commerce has recently proposed repealing the FMP as a temporary measure, allowing ADF&G to regulate the entire fishery in the interval. 16/ However, ADF&G has no authority over the non-resident fleet unless the vessels are registered in Alaska. 17/ This approach will fail if the large non-resident fleet decides to deliver its catch to floating processors or to freeze it for delivery in Seattle.

We are now working with the Council and ADF&G to develop another approach that would use state regulatory authority except where the Secretary of Commerce has determined that a violation of the Magnuson Act's national standards would result. It is hoped that this approach will allay the fears of the non-resident vessels that Alaska will favor her own fishermen and thus avoid a shift to at-sea delivery solely to avoid regulations that are perceived as discriminatory. In many respects, this approach follows Senator Gravel's 1976 suggestions.

My assessment: Despite a common interest in conservation, the rulemaking systems used by the state and federal managers are quite different. ADF&G has a hands-on, real-time ability to open and close seasons by fiat. The federal authorities are more deliberative, providing more time for public input and written explanation. The inability of the state to explain the basis for inseason management actions sufficiently in advance of the need for them prevented the federal government from responding on time.

SUCCESS

Pacific Salmon: The actions of five states, several Indian tribes, three interstate compacts, two regional councils, at least ten federal agencies, two international commissions, Japan, Canada, and the Soviet Union must be coordinated to provide sound conservation of this highly interjurisdictional resource. 18/ Until recently, lack of agreement on a single issue had prolonged a situation of competitive overfishing. That issue was allocation.

In terms that are much simpler than the real situation, Alaskans thought the Japanese caught too many Alaskan salmon, the Canadians thought the Alaskans caught too many Canadian salmon, and Washingtonians and Oregonians thought both Alaskans and the Canadians caught too many northwestern salmon. At the same time, Indian, non-Indian, sport, and commercial fishermen engaged in confrontational litigation about who got what share of a steadily declining resource. State and federal relations were also quite poor, with the Federal Government fighting the Indians' battles against both Washington and Oregon and twice preempting Oregon's salmon management authority in her territorial waters. 19/ In this interjurisdictional muddle, the natural runs of Columbia River salmon declined year by year.

It took 15 years of negotiation to solve the salmon problem. By treaty, the United States and Canada agreed to share the salmon resource according to each nation's production of the resource. 20/ With minor deviations for transboundary rivers, the two sides agreed to balance interceptions so that the benefits of conservation would accrue to the nation that undertook the conservation measures. By another treaty, the two nations brought pressure on Japan to reduce high seas gillnetting that intercepted North American salmon. 21/

Before it could succeed, however, the U.S.-Canada treaty also had to deal with U.S. domestic allocation. Some of the stocks most in need of conservation were northwestern stocks that were harvested by both Alaskans and Canadians. Indeed, it appeared to be in Alaska's immediate interest to avoid the treaty, since there would be no reason for Alaskans to save lower-48 fish that would only be taken by Canadians. To break this deadlock, Indian fishermen turned to the federal courts, pressing a claim that Alaskan harvests counted against the non-Indian share of the 50-50 allocation that had been set by the Supreme Court. 22/ Had the Indians succeeded in this claim the federal authorities might have been forced to reduce Alaskan harvests to permit continuation of the non-Indian fishery off Washington and Oregon.

Ultimately, the Indian litigation was settled on condition that the U.S.-Canada treaty be signed, ratified, and implemented by legislation that itself was the product of negotiations.

The Pacific Salmon Treaty Act is unique fisheries legislation. 23/ State and tribal representatives decide what conservation and allocation objectives the U.S. seek from Canada. The voting membership of the U.S. section consists of one member from Alaska, one from either Oregon or Washington, one from the Indian tribes, and one federal member. The federal member has no vote. Unanimity is required. If the members cannot agree on allocation, there is no fishing. Virtually all commission decisions are implemented by state and tribal fishery managers. The Federal Government ensures, however, that obligations to Canada are met by use of preemptive authority. That authority has been used only once. 24/

The treaty is working. Last year's returns of upper Columbia River chinook were the highest in fifty years.

My assessment: The treaty works because the U.S. and Canada share the same conservation objectives because each will benefit. Domestically, the treaty works because there is a single political institution that makes internal allocations by unanimous consent. The states are encouraged to implement Commission decisions by the threat of federal preemption.

THE JURY IS STILL OUT

Gulf Redfish: Juvenile red drum are found in near coastal waters of all five Gulf states. Each state has developed different management programs. The adult spawning population is mainly found in the federally managed exclusive economic zone [EEZ], but until recently there was little fishing effort applied in the EEZ because of low prices. A new recipe for blackened redfish markedly changed that and a few very efficient purse seine vessels began targeting the spawning population. 25/

As is well known, a political and legal controversy is now in progress. Generally speaking, the Gulf states have laws that allow a near shore fishery on juvenile redfish. The states support either recreational or small commercial fisheries. Purse seines are not allowed to take redfish in state waters. Some states restrict sale of redfish. Nevertheless, too many juvenile fish are taken in state waters to provide adequate numbers of spawners to maximize production.

The federal authorities that I represent have issued the first federal FMP. The regulations that implement the FMP

do not currently permit a directed fishery in the EEZ. 26/ If further research confirms the ability of the stock to support a directed commercial fishery in the EEZ, a quota will be set. The bycatch of the shrimp fishery may be landed and sold only as permitted by state law. 27/ The redfish bycatch of the purse seine fisheries is subject to a quota. That bycatch, however, and any future directed catch, may be landed and sold in any state. 28/ Finally, the FMP states an explicit objective to encourage greater escapement of juvenile fish to the spawning population.

There will be other speakers on this agenda presenting their perspectives on the redfish issue. I am sure some of you find it strange that the federal authorities have superseded some state laws, preserved others, and asked the states to restrict near shore fisheries to save the resource for a potential future purse seine harvest in the EEZ. I do not intend to deal with those issues at this meeting. But I will ask you to compare redfish to some of the other fisheries I have discussed.

1. Like herring, there is a dispute between the states and the federal authorities as to the preferred size of fish to be harvested.

2. Like striped bass, there is wide disparity between existing state rules.

3. Like Tanner crab, there is a real need for coordination between state and federal managers.

4. Like salmon, the courts have become involved.

My prediction: The redfish FMP will work so long as the state and federal objectives are not in conflict. This will mean that the states will impose conservation burdens on their coastal fisheries to the point that those coastal fisheries will gain the benefit. However, the states will be unwilling to restrict coastal fisheries to the point that a directed commercial fishery in the EEZ could be authorized by the federal managers under the current FMP. Unless the Federal Government is prepared to preempt the states, it will be difficult to provide any future benefit to the fishermen who have been restricted by the federal FMP.

A SOLUTION

Senator Gravel was right. Geographical divisions of fishery management authority that do not reflect the range of the resource will provoke controversy and ineffective management. There is a need for management institutions that have the ability to address the entire range of the fishery resource. When they have that ability, they will be accountable to the regulated public for the effectiveness of their conservation and management programs.

I do not recommend a federal takeover. I suggest a readjustment of state and federal authority along the following lines.

1. The seaward boundaries of coastal states would be extended for fishery management purposes to the 200 mile limit of the EEZ. Each state would acquire the same jurisdiction over fishing in that area that it now enjoys over fishing within its borders, subject only to the federal preemptive powers listed below. Each state would be solely responsible for management programs for fishery resources that do not migrate to another state, subject only to Constitutional standards of fairness to fishermen from other states.

2. The federal authorities would have preemptive jurisdiction over fishery resources that migrate between the new boundaries of two or more states. For fishery resources that migrate between only two states, the federal government would mediate disputes. For fishery resources that migrate between three or more states, the regional fishery management councils would have jurisdiction to develop and seek federal approval of an interstate fishery management plan. Once a dispute was settled or an interstate plan approved, the states would implement the necessary regulations, subject to the right of any state or of the regional council to ask for federal preemption.

3. Foreign fishing in the EEZ would be ended.

4. U.S. representation on international fishery management institutions would provide for representation of fishery managers from affected states and for implementation of necessary regulations by those states. Federal preemption would be reserved to instances of potential treaty violations.

Under such a system, the federal regulatory and enforcement burden would be reduced to resolving interstate conflicts and enforcing any necessary preemptive regulations. The states would have a better ability to manage resources that

are locally important, but that now migrate beyond state borders. Many important resources could be transferred fully to state management. Migratory resources would be managed cooperatively by the states subject to federal preemption. For every fishery, there would be a single, accountable management institution. Political problems would be more readily resolved.

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THE PUBLIC TRUST DOCTRINE AND FISHERIES MANAGEMENT IN THE EXCLUSIVE ECONOMIC ZONE

M. Casey Jarman*

Abstract

Traditionally, the resources of the sea have been treated as common property where all nations had the right to exploit resources while maintaining a reasonable regard for the concomitant rights of others to carry on similar activities. Recent developments in international law have resulted in the enclosure of ocean space by coastal nations and a consequent restriction on access to the resources within. The U.S. government's recent exercise of control over the resources within a zone 200 nautical miles from its coasts is a reflection of this movement. Because the fishery resources within this area are held by the government in trust for its citizens, an obligation exists to manage them in a way that will maintain the resources for present as well as future generations to benefit from. This paper argues that adoption of the public trust doctrine by the courts will help ensure that this goal is met.

Introduction

On March 10, 1983 President Reagan issued a Proclamation establishing an "exclusive economic zone" (EEZ) extending 200 nautical miles from the baseline from which the territorial sea is measured. The Proclamation claims for the United States sovereign rights for the purpose of exploring, exploiting, conserving, and managing natural resources, both living and nonliving, of the seabed and subsoil and the superjacent waters, as well as for protection of the marine environment. Proclamation No. 5030, 48 Fed. Reg. 10,605 (1983). As a result, the United States has asserted jurisdiction over ocean resources covering an area of over six million square miles, an area representing approximately one and a half times the total land mass of the United States.

The EEZ Proclamation is the latest in a series of events whereby the U.S. government has enclosed ocean space for the purposes of conserving and exploiting the resources contained therein. A number of laws affecting management of ocean resources, including fisheries, within 200 miles of the coast already were in place when President Reagan announced formal creation of the EEZ. Existence of the Proclamation leaves open to question whether it imposes any new responsibilities on the federal government in relation to fisheries management or whether it is simply an executive branch affirmation of pre-existing legislative assertions of jurisdiction over fisheries and other marine resources.

*Casey Jarman is the Director of the Coastal and Marine Law Research Program of the Mississippi-Alabama Sea Grant Consortium at the University of Mississippi Law Center. This article is a summary of her article which appeared in 65 OREGON LAW REVIEW 1 (1986).

Resources claimed under the Proclamation are public resources which the government holds in trust for the people of the United States. The formal establishment of sovereign rights arguably carries with it an increased role of public stewardship over these resources. To ensure that these trust resources are adequately protected, the courts should adopt the public trust doctrine, thereby creating a judicially enforceable public trust overrride in their management. This paper discusses the public trust doctrine as applicable to fishery management decisions in the EEZ.

Evolution of the Exclusive Economic Zone

Until recent times, a nation's control over oceanic natural resources was limited to its territorial sea, a relatively narrow band of water adjacent to the coast. Within this zone coastal nations had the exclusive right under international law to regulate foreign and domestic fishing, as well as commerce and navigation. The width of the territorial sea fluctuated widely throughout history. However, since completion of the United Nations Conference of the Law of the Sea in 1982, most states have accepted twelve miles or less as the permissible distance. The area of ocean outside the territorial sea, known as the high seas, was considered a commons where all nations had the right to exploit resources while maintaining a reasonable regard for the concomitant rights of others to carry on similar activities. Under the free access principles of the high seas, regulation of fisheries outside territorial sea areas was effectuated by explicit agreements and customary practices among nations having an interest in the fishery.

By the middle of the twentieth century, it became apparent that traditional methods of regulating marine fisheries were not sufficient to protect these resources from overexploitation. As a result, exclusive fishery zones began to emerge and encroach upon the high seas. The United States initiated this movement in 1945 when President Truman announced the "Fisheries Proclamation". Proclamation No. 2668, 10 Fed. Reg. 12,303 (1945). This Proclamation asserted the right of the federal government to establish fishery conservation zones in areas of the high seas contiguous to the U.S. coast in order to regulate fishing activities of U.S. nationals. Such zones were deemed necessary to conserve and protect the coastal fisheries. With respect to foreign fishermen, the Proclamation suggested the development of international agreements. It also asserted that the United States would respect the corresponding rights of other nations to establish conservation zones so long as the foreign government recognized any existing fishing interests of U.S. nationals in such zones.

It was not until 1976 that Congress passed comprehensive legislation governing fishery resource management beyond the 12-mile exclusive fishery zones. The Magnuson Fishery Conservation and Management Act (MFCMA) creates a regime for managing the fisheries off the U.S. coast within what is now the EEZ. This extension of exclusive fisheries jurisdiction from 12 to 200 miles, which occurred simultaneously with international negotiations over a 200-mile EEZ, evidenced Congress' growing concern over the decline of the U.S. fishing industry as well as impatience over the pace of the international negotiating process in resolving fishery management problems. The legislative history of the MFCMA specifically acknowledges fisheries as

a common property resource. In recognition of the existence of other public trust uses exist in the area, the law sets forth a policy of non-interference with other lawful uses of the seas except when a conflict exists with conservation and protection of fisheries resources.

Public Trust Doctrine

The public trust doctrine obligates government to protect the public's interest in certain common resources. The tidelands trust over marine resources generally is believed to have developed from Roman and English law. As adopted in the United States, the government (either federal or state) holds title to tidal lands and the resources within, with a concurrent trust obligation in favor of the citizens. The leading Supreme Court case interpreting the government's role is Illinois Central R.R. v. Illinois. The Court held that a state cannot alienate public trust property if such reallocation results in subjecting public uses to private interests. It determined that a state may dispose of public trust lands only on a showing that its action does not result in the wholesale divesture of its authority over public resources, or that doing so furthers some other trust purpose. Since Illinois Central, the public trust doctrine has been used as a tool to prevent private interests from controlling the sea and its associated coastal tidelands. It seeks to conserve the natural resource, recreational, ecologic, and aesthetic values of these areas for the benefit of the public at large.

Although the tidelands trust has not been used by the courts in conflicts over use of ocean resources, the doctrine is arguably applicable. Until the advent of the EEZ concept, ocean areas outside the limited territorial seas of coastal nations generally were considered high seas. Within this area, resources were regarded as common property to which all nations had equal rights. Although a specific international public trust as such has not been acknowledged over these resources, the customary international law doctrine of freedom of the high seas is based upon the same commons concept from which the public doctrine developed. Present application of the public trust doctrine therefore is consistent with historic treatment of EEZ resources.

Under the Proclamation, the federal government now owns the living and nonliving resources of the EEZ in trust for the people of the United States. In addition, the government is obligated to preserve certain high seas common rights for the world community. This dual responsibility supports the need for an increased role of public stewardship beyond that provided under the current statutory regime. The tidelands public trust is an appropriate legal tool for exercising this stewardship. Because the rationale behind the existence of such a trust for tideland resources is equally applicable to the EEZ, it is arguable that the sovereign rights asserted over EEZ resources are burdened with a judicially enforceable trust obligation to protect the public's interest in these common resources.

Because historically the states have exercised jurisdiction over fisheries resources within the territorial sea, case law sufficient to delineate the scope of the trust in relation to federally owned tidelands does not exist. Most laws concerning a tideland trust have developed independently, albeit similarly, within each state court system. Therefore,

to determine the scope of the doctrine, it is necessary to draw analogies from federal and state court decisions. Certain common principles are evident from a review of these cases. First, no absolute prohibition exists against the disposition of public trust properties. Tidal resources can be allocated to private parties so long as the government does not divest itself of its ability to control a "whole area" of submerged lands. Courts enforcing the public trust look closely at reallocations favoring narrow constitutencies. Second, the diposition cannot substantially impair the public interest in remaining areas. Third, the resource must be maintained and held available for uses that benefit the public. This holding is tempered by some courts which provide a limited exception for statutorily authorized conveyances that promote the general interests of the public. Fourth, conveyances of public trust lands to private parties do not extinguish the trust; i.e., a new landowner cannot prohibit the public from exercising, in a reasonable manner, common rights such as fishing and navigation. Finally, there are no definitive sets of priorities among trust uses.

Central to the above principles is the existence of a government duty to manage trust resources so as not to extinguish the public's right to use them. Underlying this duty is a presumption that the legislature does not intend to violate the trust. Congress, then, can pass legislation managing fishery resources, but if such laws impair the trust, the courts have the authority to review the legislation or the administrative action taken pursuant to the law.

Application of the Public Trust

It could be argued that the existence of the MFCMA obviates the need for such a judicial remedy. Presumably, that law, along with a myriad of others governing management of other EEZ resources, requires the government to fulfill trust obligations commensurate with those of the public trust. While this argument has merit, current natural resource and environmental legislation fails to provide adequate remedies for trust violations, particularly in light of the rights oriented basis of the public trust doctrine.

First, the regulatory scheme in place prior to the EEZ Proclamation, passed in piecemeal fashion, was essentially single-purpose. Legislation was responsive to resource-specific claims only. As a result, few opportunites exist for the public to make tradeoffs among different marine uses. Even government agencies are limited in enforcing their authority over a resource beyond specific management objectives.

Second, the standard of review under the various laws, including MFCMA, is less stringent than that available under a public trust review. The MFCMA contains no citizen suit provision to enforce regulations implemented pursuant to Fishery Management Plans (FMP). In fact, judicial review is quite limited. Regulations issued pursuant to a FMP may be reviewed only if a petition for review is filed within thirty days from promulgation of the regulations. Furthermore, the scope of review is restricted to the standards of (a) arbitrary and capricious conduct, (b) conduct in excess of statutory jurisdiction, (c) failure to follow procedural requirements, and (d) conduct contrary to a constitutional right or power.

Furthermore, when substantial scientific uncertainty exists regarding the potential environmental effects of an action, courts have given great deference to agency decisionmakers under their legislatively delegated authority. A mistake in judgment in favor of dumping materials with potential significant harm to the marine environment would have serious consequences on renewable trust resources, particularly fisheries. It therefore is imperative that the traditional judicial soft glance be replaced by a public trust override that better can provide for a core level of protection for renewable resources dependent upon a healthy environment.

Neither will the "hard look" given agency actions by the courts always be effective. The "hard look" ensures that agencies consider the significant environmental consequences of their decisions. But the ultimate test is one of reasonableness, and deference almost always is granted the administrative agencies. Because the presumption that the legislature does not intend to violate its trust duties elevates these concerns to a priority position in an agency's decisionmaking process, the public trust doctrine provides judicial review a step beyond the hard look.

One of the benefits of the trust doctrine is that it permits management of resources over time. A preference for renewable resources, such as fisheries, when a decision needs to be made regarding pollution v. non-pollution or renewable vs. non-renewable resource development, would not be detrimental to potential "polluters" or to those exploiting non-renewable resources. Advances in technology over time can resolve safety issues. When that occurs, decisions can be reassessed. This policy would encourage development of technology that is both efficient and environmentally sound and protect the fisheries from suffering from an otherwise "reasonable" error of judgment.

Conclusion

The EEZ Proclamation for the first time makes a comprehensive sovereign claim over the marine resources within 200 miles of the United States coastline. Resources encompassed by the Proclamation, particularly fisheries, are the type that receive elevated status under the public trust doctrine. They are held by the government in trust for the people of the United States. In addition, because the federal government does not claim exclusive ownership of the seabed and subsoil or of the water column, the international community retains certain high seas rights in the EEZ.

The current statutory framework for marine resource management, passed in patchwork fashion, is insufficient to ensure that trust resources are adquately protected. Not all of the statutes contain trust language for the resource being managed. There is little indication that Congress will pass comprehensive EEZ resource legislation in the near future. Therefore, other mechanisms must be explored for ensuring that the public's interest in the long-term protection and utilization of valuable marine resources is not subverted to short-term economic gain. The judiciary has shown its ability in state tidelands cases to oversee the discharge of this important duty. Adoption of a similar public trust doctrine to oversee EEZ resource decisionmaking is one way for the courts to protect this interest.

THE CONSISTENCY OF UNITED STATES DOMESTIC FISHERIES LAW WITH THE UNITED NATIONS LAW OF THE SEA TREATY

Miranda S. Wecker*

Times were when the laws pertaining to offshore fisheries were very simple. They were no were better expressed than by that Leviathan of American Literature --Herman Melville in his classic Moby Dick. Melville has Ishmael digress from his discussion of the habits of sperm whales to give an account of the laws and regulations of the whale fishery. Ishmael tells us:

> "...the most vexatious and violent disputes would often arise between the fishermen, were there not some written or unwritten universal, undisputed law applicable to all cases.
>
> Perhaps the only formal whaling code authorized by legislative enactment was that of Holland. It was decreed by the State-General in A.D. 1695. But though no other nation has ever any written whaling law, yet the American fishermen have been their own legislators and lawyers in this matter. They have provided a system which for terse comprehensiveness surpasses Justinian's Pandects and the By-laws of the Chinese Society for the Suppression of Meddling in other People's Business. Yes; these laws might be engraven on a Queen Anne's farthing, or the barb of a harpoon, and worn around the neck, so small are they.
>
> I. A Fast-Fish belongs to the party fast to it.
> II. A Loose-Fish is fair game for anybody who can soonest catch it.
>
> But what plays the mischief with this masterly code is the admirable of it, which necessitates a vast volume of commentaries to expound on it.
>
> First: What is a Fast-Fish? Alive, or dead a fish is technically fast, when it is connected with an occupied ship or boat, by any medium at all controllable by the occupant or occupants,-- a mast, an oar, a nine-inch cable, a telegraph wire, or a strand of cobweb, it is all the same... These are scientific commentaries: but the commentaries of the whalemen themselves sometimes consist in hard words and harder knocks --the Coke-upon-Littleton of the fist."

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* Associate Director and Staff Attorney with the Council on Ocean Law, Suite 302, 1717 Massachusetts Ave. N.W., Washington, D.C. 20036.

Ishmael then goes on to describe a case of whale trover (i.e. theft) litigated in England which was ultimately decided on two great principles of law: The Fast-Fish principle which protects property rights and the Loose-Fish principle which preserves the availability of unclaimed resources.

The laws were more simple then because there were plenty of loose fish for the Rachel, the Pequod, the Rose-bud and the other whaling vessels. Times have changed. For years, fish and mammal stocks have been captured at an rate unimaginable in Ishmael's day. A modern day Melville would need to catalogue advances in the technology of fishing, development in fish-locating devices, growth in human demands and in the stresses on associated species, and widespread destruction of crucial spawning habitat, etc. In their day, Ahab, Ishmael and Queequeg never heard of the "tragedy of the commons."

But we here all have. Resources have been shown to be renewable but limited. Allocation and conservation decisions must be made. Thus we have the acendancy and growing complexity of fisheries law. I will present my views on the consistency of US and international fisheries law. I hope to be accurate but because I must be brief, I will greatly simplify the content of domestic law by looking only at the Magnuson Act and not at the laws governing fisheries within state waters. With respect to international law, I will only discuss the provisions of the 1982 United Nations Convention on the Law of the Sea. Time permitting I will also mention several international initiatives currently under way which affect US fisheries interests and of which Gulf and South Atlantic States should be fully aware of.

Before beginning the comparison, it may be useful to remember that a prime motive in convening the LOS treaty in the early 1970s was to limit the trend towards nations claiming more extensive authority in offshore areas. At that time, efforts by nations to secure resources rights were threatening to spill over into claims for overall jurisdiction in offshore area. The concept of a 200-mile exclusive economic zone was developed in the treaty talks as a compromise to defuse the movement which may have led to 200 mile territorial seas in which coastal nations would assert control over shipping and other traditional high seas freedoms. Exclusive resource authority was recognized but important high seas freedoms in the EEZ were also reaffirmed. The US position taken at the treaty negotiations was to temper the dangerous trend to grab for coastal authority. It was motivated by a concern to limit coastal nation authority, to protect its navigation rights and other distant water interests. After the US rejected the treaty, the Reagan Administration issued its EEZ proclamation and a related policy statement endorsing the balance of rights embodied in all but the seabed mining portions of the treaty. Thus, the fishing provisions of the treaty have been accepted by the Administration.

First, I will offer a quick comparison of the operation of the Magnuson Act and the provisions of the LOS treaty. When

analysing fisheries laws, one must first examine the stated objectives of the laws. The Magnuson Act is officially titled the Fisheries Conservation and Management Act. The objectives of the law are in the title-- and succinctly put, they are to manage and conserve to prevent overfishing.

Defining what is meant by the objective "to prevent overfishing" is very much like defining what is meant by "Loose-Fish." This is so first because defining overfishing would be difficult and would require vast volumes of commentaries. Second, this is so because in our times governments decide which fish are indeed Loose-Fish --that is -- which fish are up for grabs. We now live in an era when the government declares some portion of the stocks they choose to manage as Fast-Fish-- Fish already claimed by the government as the property of the public and future generations for perpetuation of the resources. Governments base their decisions on how many fish are to be Loose and how many are to be Fast on analysis of many factors. To put it in Ishmael's terms, international and domestic laws tell us which government decides about which fish--the jurisdiction question-- and how the number of Fast-Fish and the number of Loose-Fish are determined -regulatory questions. These I will try to summarize.

Under US law, the number of Loose Fish up for capture is called the optimum yield (OY). The Magnuson Act directs that the number or quota of Loose Fish available for capture be set on the basis of scientific information and other factors. FCMA takes as a starting point the science-based concept of Maximum Sustainable Yield (MSY)-- which has been defined in terms of the biological characteristics of species and the catches sustainable given those biological characteristics. It then authorizes the departure from the scientific standard of the MSY to take into account "optimization" of socio-economic objectives. One such socio-economic factor, for example, is the tendency towards overcapitalization in the fisheries industry. That is, the existence of too many very efficient ships to be profitably supported by the available resources creates dislocation in the domestic industry and thus may be taken into account in the formula for optimum yield. Other socio-economic factors which may be weighed include government responsibilities under the public trust doctrine and traditional rights of Native Americans. Skirting the complex and often unhappy question of the successfulness of the government in carrying out this balancing act, I simply hope to point out that the overall standard --the optimum yield-- is a hybrid of science, law and policy considerations.

The formula for annual catch in the LOS treaty is nearly identical in its flexibility: nations are directed to determine a total allowable catch -which like the OY --is formulated on the basis of scientific analysis of the stock's MSY as modified by other interests including environmental, social and economic interests.

It should be noted that during the LOS negotiations on

fisheries provisions the US had disparate interests to promote being both a coastal nation with tremendous living resources within its 200 mile zone and also an important maritime nation with distant water fisheries industries particularly tuna and shrimp fisheries. Set in the context of the strong movement towards international acceptance of the 200 -mile exclusive economic zone concept, the US delegation urged some constraint on the sovereignty of coastal nation authority with respect to certain species and stressed the commitment to principles of optimum utilization and conservation.

The resulting provisions in general satisfied the US concerns. Nations are committed to conserve --(ensure that living resources are not endangered by exploitation Article 61-4.) They are also committed to provide for harvesting the entire allowable catch. That is, any surplus over and beyond what the domestic fisheries industry is able to harvest of the yearly allowable catch-- must be allocated to foreign nations. The idea promoted by the US was to spur nations to allow the utilization of stocks they are unable to use themselves. This principle is fair minded and is not onerous since the allowable catch is determined -without any interference- exclusively by the coastal nation and is not subject to dispute settlement procedures available for other treaty related conflicts.

The broad objectives of the treaty and FCMA are identical--conservation and management. The decision mechanisms are similar -both involving the setting of a catch quota based on scientific analysis with socio-economic factors taken into account. The treaty recognizes coastal nation sovereignty exercised in the FCMA but with the caveat that there should be optimum utilization and protection of the resources.

Optimum Utilization

On the issue of optimum utilization of fisheries resources, the comparison becomes more difficult. During the LOS treaty negotiations, the US urged that nations should not be permitted to "sit on their fish resources and let them go to waste" and that there should be some protection for traditional distant water fisheries and the interests of geographically disadvantaged and land-locked states. The treaty exhorts states to consider these interests in dividing up their surpluses among foreign fishermen, but the treaty does not provide a mechanism for foreign fishermen to force coastal nations into declaring a surplus and opening their zones to foreign fishing. Optimum utilization is ultimately defined by the coastal nations themselves, although the spirit of the treaty could be said to strongly suggest if not demand that when the domestic industry is not up to the task of harvesting all the available fish, others should be allowed to benefit from the seas' bounty.

As foreign vessels' catch in the waters off US shores increased, a movement to promote the US fishing industry and diminish the extent of foreign fishing in the US zone grew.

Toward this end, amendments to the Magnuson Act were enacted to allow the government to withhold an extra portion from the surplus which would normally be allocated to foreign fishing vessels. The portion withheld would be available to US fishermen to accommodate expected growth in the domestic harvest. The part withheld would be released the following year if US fishermen have not been able to make use of the additional quota. This is not consistent with the spirit of the treaty which demands coastal nations to allow utilization of stocks they are not able to harvest and to provide for optimum utilization.

Of greater concern to advocates of optimum utilization were bills introduced in the 99th Congress which would have established a fixed-time phase out of all foreign fishing in the US EEZ. Such a phase-out unrelated to real growth in the capacity of the American fishing industry would lead to under-utilization contrary to the mandate of the treaty. While phase-out legislation failed in the 99th Congress, any future initiatives of this type should be scrutinized closely.

Conditions on Access

The Magnuson Act sets up a number of conditions on access to the Loose-Fish in the US zone. The US says to foreign fishermen, "These are only Loose-Fish for you IF you accept our terms." Some conditions on access are unrelated to fisheries such as the sanction against the Soviet Union in response to their invasion of Afganhistan and the Packwood amendment reduction of fishing quotas to lever adherence to the rules of the International Whaling Commission. Other conditions on access are means to eventually edge out the foreign fishermen who until the last few years dominated the US zone. The guiding principle is to allow access only to those foreign nations which do not unfairly discriminate against the American industry, and going further to give preferential treatment to countries which actually promote in some way the American fishing industry. The LOS treaty clearly permits such favoritism in stating that coastal states may condition access to their zones taking into account all relevant factors. A wide-ranging and non-exhaustive list of factors the coastal nations may consider is presented in the treaty.

Species Approach

During the treaty negotiations, US fisheries interests were not simple -- the coastal fishermen wanting exclusive US management of coastal stocks and the distant water fishermen wanting assured access to tuna and shrimp in other countries' zones. What resulted from this mix of conflicting interests was the so-called "species approach." The US pushed for and achieved special treatment for certain species based on the proposition that due to their peculiar biological characteristics these species need special arrangements. Whereas most coastal species are managed exclusively by the coastal nations in whose zone they reside, anadromous, catadromous, and highly migratory species are

mentioned in the treaty as special cases.

With respect to anadromous species, the treaty permits the "state of origin" (where the fish originated) to manage fishing within and outside the EEZ. Note that state of origin regulations apply even on the high seas. **No authority to regulate high seas fishing** has ever been countenanced in a global treaty before this. The LOS treaty directs that the state of origin confer with traditional fishing nations regarding conservation and management on the high seas and that enforcement of the state of origin regulations on the high seas must be conducted in accordance with agreements with the foreign fishing nation.

Consistent with the treaty, the FCMA claims exclusive management authority over anadromous fish throughout their range. In the North Pacific, the US, Canada, Japan, and other nations have concluded regional and bilateral agreements limiting interception of salmon. Questions of consistency remain however with regard to whether the US adequately consults with traditional fishing nations on high seas regulations. Concern also focuses on whether FCMA enforcement provisions are consistent. FCMA authorizes criminal penalties for violations of its provisions, whereas the LOS treaty specifically forbids imprisonment for violations of coastal nation fisheries regulations, unless the nations have agreed otherwise. Consistency would thus depend on whether an agreement on enforcement questions has been reached with the foreign fishing nation.

With regard to tuna jurisdiction, the discussion of the consistency of US and international law becomes very controversial. Tuna are a highly migratory species specially exempted from coverage under FCMA. The US does not assert authority over tuna and does not recognize the authority of other nations to assert such control over tuna. Other nations do recognize coastal nation management authority over tuna. Indeed, some nations very much resent the fact that the US has chosen to go against the current of international custom on this issue. The arguments put forward by the US appear to other nations as thinly veiled apologies for subservience to the interests of the US tuna industry. Many developing nations in the southern hemisphere have been particularly incensed by the US Fishermen's Protective Act -- a law which authorizes the government to deduct the costs of seizure of US tuna vessels from the economic aid going to those countries which enforce tuna fishing management laws not recognized by the US. Fortunately, progress has been made through bilateral and multilateral agreement to set up satisfactory arrangements for US access to tuna. The South Pacific Tuna Agreement is in its final stages of adoption.

That the US itself declines to assert authority it may under international law does not necessarily mean the US is inconsistent. But US law calls for sanctions applied to nations for actions which most nations see as exercises of their legitimate rights under international law. This is a more serious

problem and one that will probably be discussed in Congress when FCMA comes up for reauthorization again in two years.

In summary, the treaty and the FCMA are compatible and similar on most counts. The treaty permits strong coastal state authority over coastal stocks with the obligation to allow foreign fishing for those surplus fish the domestic industry is not able to harvest. Conservation and management principles are very general in both. The method of arriving at quotas involve science and policy. The US policy with respect to criminal penalties for fisheries violations, some aspects of anadromous fish regulation and tuna jurisdiction run contrary to the treaty.

International law is important and it has proven to be beneficial. It is not inconsequential, remote, irrelevant. We all must begin to think globally, think regionally, and within the means at hand act locally. Here is a brief update on some international initiatives you may want to learn more about because their outcomes will affect you:

The Cartagena Convention: A regional environmental protection forum sponsored by the UN Environment Program, the Cartagena Convention may be the key to protecting the Caribbean and Gulf waters from transboundary pollution and pollution caused by vessel traffic and offshore structures.

The International Maritime Organization's Marine Environmental Protection Committee (MEPC) and Maritime Safety Committee (MSC): These committees charged with providing "safe ships and clean seas" are now considering international standards for abandoned or decommissioned offshore rig removal. The standards will address the need for removal of rigs and the environmental impacts of removal techniques.

MEPC is also engaged in developing implementing guidelines for Annex V of MARPOL-- the international agreement with will control the discharge of garbage from ships and offshore structures. Studies have shown much of the litter tossed in the sea by passing vessels ends up on Gulf Coast beaches.

The oil spill liability and compensation protocols developed by the IMO are before the Senate for ratification. Domestic implementing legislation is needed, but stalled due to hesitance over the preemption of state liability laws. Support for the unified international approach is crucial for it will provide a legally enforceable international committment by foreign flag vessel owners and parties to the treaty to compensate for pollution damage.

The London Dumping Convention, another IMO forum, will be continuing to look into the impacts of ocean incineration, radioactive waste disposal and offshore rig disposal.

I would like to close by returning to Ishmael's comments on the applicability of the Loose Fish -Fast Fish doctrine. He tells

us:

> "What are the Rights of Man and the Liberties of the World but Loose-Fish? What all men's minds and opinions but Loose-Fish? What is the principle of religious belief in them but a Loose-Fish? What to the ostentatious smuggling verbalists are the thoughts of thinkers but Loose-Fish? What is the great globe itself but a Loose-Fish? And what are you, reader, but a Loose-Fish and a Fast-Fish, too?"

THE FLORIDA MARINE FISHERIES COMMISSION: STATUS OF SPANISH MACKEREL AND REDFISH LITIGATION

Charles L. Shelfer

ABSTRACT.-The Florida Marine Fisheries Commission was created in 1983 and, according to specific management standards, given exclusive rulemaking authority to implement measures such as gear restrictions, bag and size limits, species that may not be sold, and seasons. Last year the FMFC proposed rules implementing comprehensive management measures for Spanish mackerel and redfish, both of which were challenged by commercial interests. The Spanish mackerel rules, which imposed quotas and prospective minimum mesh size requirements on the commercial gill net fishery, were upheld by both an administrative hearing officer and an appellate court as reasonable and within delegated authority. The redfish rules, which made the species a gamefish and imposed tight bag limits, were at first held to be invalid by a hearing officer, who cited their unfairness to commercial fishermen and the FMFC's lack of authority to prohibit sale. An appellate court has reversed that determination and held the rules to be within delegated authority. That reversal is not yet final and the rules are still subject to approval by Florida's Governor and Cabinet.

I. THE FLORIDA MARINE FISHERIES COMMISSION: HOW IT CAME ABOUT AND HOW IT WORKS

The Florida Marine Fisheries Commission had its origins in the 1980 Florida Legislature with the creation of the Saltwater Fisheries Study and Advisory Council. The Council was mandated to study all aspects of the state's saltwater fisheries and to develop a comprehensive saltwater fishery conservation and management policy for the territorial saltwaters of the state.

The Legislature, up until the creation of the Council, had always regulated the state's fisheries with the coherence and thoughtful deliberation always observed in the nation's statehouses. Besides expressing state fisheries policy in a hodge-podge of piece-meal general statutes, county-by-county fishing regulations had been imposed by the Legislature in the form of more than 200 "special acts," Florida's equivalent of Washington, D.C.'s

porkbarrel, "get me reelected" governance. One could pass from one county's waters to another and instantly be subject to radically different rules and penalties. The year 1980 marked a watershed in Florida fisheries regulation, in the recognition that there must be a better system, particularly in a state that attracts nearly 1,000 new residents each day, many of whom come to Florida in expectation of enjoying the state's marine cornucopia.

After two years of public hearings throughout the state and a considerable amount of study, the Council submitted its report to the Legislature, making numerous recommendations on all aspects of fisheries management. A major component of these recommendations included the creation of a Marine Fisheries Commission, designed to stress conservation, increase management flexibility and public responsiveness, and to provide checks and balances to assure the utilization of marine resources by all the people of the state. The Council further recommended that it be the policy of the State to manage and preserve its renewable marine fishery resources, based upon the best information available, emphasizing protection and enhancement of the marine and estuarine environment, in such a manner as to provide for optimum sustained benefits to all Florida citizens, now and in the future. The Council also recommended standards to be used in managing and conserving the saltwater fisheries consistent with the stated policy.

As a result of these recommendations, the Florida Legislature created the Marine Fisheries Commission in July, 1983,[1] granting to it full rulemaking authority over all marine life, except endangered species. Rules promulgated by the Commission are subject to final approval by the Governor and Cabinet and may address the following specific measures:

1. Gear specifications;
2. Prohibited gear;
3. Bag limits;
4. Size limits;
5. Species that may not be sold;
6. Protected species;
7. Closed areas;
8. Quality control codes;
9. Seasons; and
10. Special considerations relating to egg-bearing marine animals.

The Commission also received authority over the 200-plus special acts which already imposed local saltwater fishing regulations.

The management standards which the Marine Fisheries Commission is required to follow are not totally dissimilar

to those enunciated in the Magnuson Fishery Conservation and Management Act. There are, however, three significant differences which I wish to describe generally here for their importance to litigation in which we have been involved.

1. The initial standard of the federal law states that "[c]onservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield in each fishery."[2] The first Florida standard, however, declares that "[t]he **paramount concern** of conservation and management measures shall be the continuing health and abundance of the marine fisheries resources of this state."[3] Note that Florida's standard does not speak of optimum yield, but instead makes the health and abundance of the resource the primary consideration. Another Florida standard requires that conservation and management measures "permit reasonable means and quantities of annual harvest, consistent with **maximum practicable sustainable stock abundance** on a continuing basis."[4] The latter term, "maximum practicable sustainable stock abundance," is nowhere to be found in the federal law, or for that matter, in any standard fisheries management textbook.

2. The second difference concerns the "fair and equitable" standards in the respective statutes. The fourth federal standard prohibits discrimination between residents of different states and then provides:

> If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (a) fair and equitable to all such fishermen; (b) reasonably calculated to promote conservation, and (c) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.[5]

The comparable Florida standard provides that "[c]onservation and management decisions shall be fair and equitable to all the people of this state and carried out in such a manner that no individual, corporation, or entity[6] acquires an excessive share of such privileges."[6] The word allocation appears nowhere in the Florida law.

3. The fifth federal standard stresses promotion of "efficiency in the utilization of fishery resources," but states that "no...measure shall have economic allocation as its sole purpose."[7] This standard would seem to concern only commercial harvest and there is no counterpart in the Florida law.

The Commission consists of seven members appointed for

four-year terms by the Governor and appointments must be confirmed by the Senate. The Commissioners are all engaged in other business pursuits and are remunerated $50 per day while on Commission business.[8]

A wild card in the Marine Fisheries Commission's rulemaking process is the requirement that fishery rules be approved by Florida's Governor and Cabinet prior to becoming effective. They may not amend a rule, but may only approve or disapprove one. Cabinet members are elected statewide and include the state's Comptroller, Insurance Commissioner, Commissioner of Agriculture, and Commissioner of Education, as well as the Attorney General and Secretary of State. They each have their own constituencies and are not naturally attuned to fishery issues. The process tends to be political. Rules that have been through months or even years of workshops and hearings before the Commission can be simply disapproved with an admonishment to return to the drawing board and think up something else.

In May of 1986, after 2 1/2 years of existence, the Commission had had most of its rule recommendations approved by the Governor and Cabinet and all parties interested in fisheries issues had managed to avoid litigation. That peaceful reality changed in short order in May of last year and legal proceedings have gone on, practically nonstop, until this moment. The two primary areas of litigation involve Commission rules governing Spanish mackerel and redfish.

II. LITIGATION - SPANISH MACKEREL

In May of 1986, the Commission proposed a rule package to deal with the declining Spanish mackerel fishery.[9] The advent of large, power-assisted, spotter pilot guided, deep water gill net gear in the mid-1970's had, in the Commission's judgment, left the resource in a seriously overfished state. The proposed rule package established minimum gill net mesh sizes for three different regions of the state and a prospective increase in mesh sizes; closed weekends to net fishing for Spanish mackerel; established set seasons for operators of the larger gill net boats, subject to early closure by region upon attainment of a specified level of maximum harvest or quota; and imposed a bag limit of 4 fish per person per day for recreational harvesters. The quota levels and the bag limit represented a 45% reduction in catch for the commercial and recreational sectors.

The proposed rules were challenged by commercial interests in an administrative proceeding before a hearing officer of the state's Division of Administrative Hearings. The Florida Conservation Association intervened on the Commission's behalf. The central issues in the proceeding

were whether the Commission had the authority to impose quotas as a mechanism to close seasons and whether the prospective increase in the minimum mesh sizes in the gill net fishery was arbitrary and capricious.

With respect to quotas, the commercial challengers argued that since the term "quota" is not listed specifically in the Commission's enabling law, imposition of such a measure was beyond the delegation of authority made by the Legislature. The Commission argued that among measures available, seasons and season closures were definitely allowed and that a season harvest limit or quota was merely one of a number of ways to define a season.

On the issue of the prospective minimum gill net mesh sizes, commercial interests contended that the Commission had no evidence and certainly had not used the best available evidence of gill net selectivity. We responded that the best fishery-independent evidence available indicated that many smaller Spanish mackerel were caught by even much larger mesh sizes. Because we are commanded by the Legislature to hold the health and abundance of the resource paramount, the prospective imposition of a mesh size statewide that would significantly reduce the harvest of smaller Spanish mackerel was a reasonable, conservative position on behalf of the resource. By making the larger mesh sizes prospective (not effective until October, 1988), better data on gill net selectivity might become available to allow for adjustment of the rule before implementation.

In August, 1986, the hearing officer held that the use of quotas to close seasons is within the MFC's authority.[10] She viewed the season closure question in context with the entire package of management measures:

> Rather than taking a wait-and-see approach, the MFC has applied a conservative management philosophy in response to these conditions so as to arrest the continuing reduction and prevent the future depletion of the resource. That conservative approach combines various fishery management techniques and applies them to different types of fishing operations. The differing seasonal catch limits or quotas for commercial fishermen is an attempt to assure that the ultimate goal of restoring the resource is attained, and it also allocates the resource and increases the availability of the resource to other fishermen should the remaining restrictions prove to be inadequate. While the MFC could have established shorter seasons for commercial harvesting, closed other areas or even prohibited large-scale gill netting of Spanish mackerel altogether in order to achieve its desired goals,

> it chose instead to combine a series of management techniques in an effort to fairly allocate the resource and achieve a 45% reduction in commercial effort. Such a combination of techniques clearly falls within the statutory standards and provisions set forth in Sections 370.025 and 370.027, Florida Statutes.[11]

The hearing officer in like fashion dealt with the prospective minimum gill net mesh size question:

> Petitioners' attack upon the proposed rules on the ground that they are arbitrary and capricious is likewise without merit. This argument is directed primarily toward the statewide requirement of a 3 5/8 inch gill net mesh size by October 1, 1988, especially as it impacts commercial fishermen and processors in North Florida and market conditions. At the present time, there is inadequate data concerning the selectivity of various gill net mesh sizes. While the undersigned, and obviously the petitioners, may have written the rule differently with regard to the date or size restrictions of nets in the various regions, it can not be concluded that the MFC was arbitrary or capricious in determining the dates or sizes set forth in the proposed rules. Its phased-in approach, starting with the sizes currently in use by the industry in the three different regions, is economically fair and affords all concerned persons the opportunity to further study the effects of the size differentials upon the industry, the market and the resource. Should it become apparent that different sizes or a regional differentiation is justified, in protecting both the resource and the industry, the rules can be amended to effectuate such a result. There is no reason to assume that the MFC, or the commercial sector, will not continue to study and monitor the future health and abundance of the Spanish mackerel fishery in Florida.[12]

This was the first challenge of any action of the Florida Marine Fisheries Commission and the order and its broad interpretation of Commission powers were welcome news to an agency that had dreaded its first brush with litigation. The decision was appealed to the appellate court by the commercial fishermen, but was upheld without opinion by a unanimous three-member panel in January, after the Court had previously refused to stay the effect of the rules.[13] The Spanish mackerel rules are in place and have already operated to close the season for the large gill net boats

on Florida's east coast.

Perhaps the most important effect of the Spanish mackerel decision is the legitimacy it imparts on the Commission and its processes. It signals that the Commission was created for a valid reason, that it is dealing with controversial resource questions in a reasonable fashion, and that the various groups impacted by Commission decisions will have to join the Commission in its statutory focus on the conservation of marine resources.

III. LITIGATION - REDFISH

Beyond the question of the legitimacy of the Florida Marine Fisheries Commission, the central conflict evident in fisheries management elsewhere, the commercial-recreational tug-of-war, will be played out in Florida through litigation over the Commission's attempt to make redfish a gamefish. That attempt formally began in July, 1986, when the Commission proposed its comprehensive management rules for that species.[14]

The Commission had determined that Florida's inshore redfish populations were seriously overfished, with considerably less than 1% of juvenile redfish surviving to join adult schools offshore. This overfishing had been going on for at least 20 years, a fact that was made more alarming by the burgeoning harvest of adult redfish by purse seine in federal waters. The Commission began with a goal of increasing juvenile escapement to 10% and set about comparing management alternatives through computer modeling to determine how best to reach that goal.

The alternatives chosen by the Commission and reflected in its proposed rules were not popular with the commercial fishing industry. The rules prohibited the sale of native redfish, limited every person in the state to five fish per day, closed the months of March and April to the harvest of native redfish, and imposed several gear restrictions.[15]

This policy choice was one of a few that the computer model predicted would render the desired escapement level. The other alternatives would have required an annual closure on all fishing for at least several months. In addition to using computer-generated tables, the Commission also conducted over twenty days of hearings on the proposed rules at which it considered testimony and written submissions from scores of witnesses: experts in economics, law enforcement, sociology, and fisheries management; advocates for the commercial fishing industry, the recreational fishing industry, small and minority businesses, and conservation and environmental groups; and interested parties including commercial fishermen, fishing guides, charter boat operators, fishing lodge operators,

bait shop owners, recreational fishermen, restaurant and hotel operators, and fish dealers.

The "gamefish" alternative was chosen because the Commission believed that a long season closure in a mixed fishery would be economically more detrimental to the state as a whole and because such elements as effort shifting and less-than-100% law enforcement would produce an escapement level less than indicated by the computer model.

In July of last year, a group of dissatisfied parties, led primarily by commercial fishermen, challenged the proposed rules, again in an administrative action. The petition alleged that the proposed prohibition on sale and restrictions on incidental redfish catch would adversely affect commercial fishermen and businesses relating to commercial redfishing, and that the closed season and restrictive bag limits would adversely affect businesses dependent on recreational fishing. The Florida Conservation Association was again granted Intervenor status in defense of the proposed rules. The Commission's case and the subsequent appeal were prosecuted by attorneys from the Florida Attorney General's Office.

A formal administrative hearing to consider the validity of the proposed rules was conducted in September and lasted 6 days. A variety of biological, economic, sociological, and legal questions were the subject of evidence and argument at the hearing. In October, the hearing officer issued an order holding the prohibition of sale and bag limit provisions of the proposed rules invalid, concluding that the rules were "unfair" under the Florida fairness standard and that the Commission lacked the statutory authority to confer gamefish status on redfish. The order construed the fairness standard to require equal burdens on all interest groups, despite the specific authority to designate species that may not be sold.

The hearing officer's order dealt a severe blow to the Commission's efforts to have its management scheme in place in time to govern the fishery during the prime late fall-winter redfish season. To deal with this situation while it appealed the order, the Commission promulgated an emergency rule, which was approved by the Governor and Cabinet, closing state waters to all harvest of redfish for 90 days, beginning on November 7, 1986.[16]

The Commission and the Florida Conservation Association appealed the hearing officer's order and sought expedited review by Florida's First District Court of Appeal. Expedited status was granted. We argued that the hearing officer had totally misapprehended the results of the computer-modeled alternatives in finding that "numerous other approaches" were available to the Commission to avoid

prohibiting the sale of redfish. In this sense, the point was emphatically made that the hearing officer, confronted with the same evidence as had been before the Marine Fisheries Commission, had simply substituted his judgment and reached different policy conclusions. As to "fairness," the Commission argued that the Florida fairness standard explicitly requires that conservation and management measures be fair and equitable to "all the people of the state" and does not speak of equity among "interest groups." Why else would the Commission have been given the clear authority to designate "species that may not be sold?"

The Florida Conservation Association, in a separate filing, maintained that the administrative order ignored undisputed evidence and testimony regarding the relative enforceability of alternatives and the conservation effects of the bag limit.

On Febrary 19, 1987, the Court issued a decision in this case reversing the hearing officer's order.[17] While sidestepping the Commission's substitution of judgment argument, the Court held the Commission's redfish rules to be a valid exercise of delegated legislative authority and took the hearing officer to task for concluding that the restrictions were not fair and equitable because of their overwhelmingly adverse impact on commercial fishermen. After reviewing the list of measures available to the Commission for the management of fisheries, the Court observed that "these specifically delegated powers inherently encompass results which would have varying impacts on different groups." The Court adopted the broad interpretation of the fairness standard advocated by the Commission:

> The ability to designate species that may not be sold intrinsically has a greater impact on those persons who will have to forego sales: commercial fishermen. Similarly, gear restrictions would impact differently on recreational and commercial fishermen depending on whether the gear in question are hooks and lines or nets. An uneven impact on differing groups is not a sufficient basis for invalidating the Commission's exercise of specifically delegated authority particularly when, as here, the restrictions are equally applicable to **all the people of the state.**[18] (Emphasis added.)

I must point out that the Court's opinion is not yet final; a Petition for Rehearing or Clarification has been filed by commercial interests. We are of course, hopeful that the Court will affirm its previous ruling. The rules at issue in this case will go before the Governor and Cabinet for

approval or disapproval on April 2, in about two weeks. The scene there is likely to be highly political and, even if the appeals court decision is made final, could turn on factors other than what is best for the redfish resource in the State of Florida.

IV. CONCLUSION

The litigational climate that consumed the Florida Marine Fisheries Commission and interested parties in this past year may finally be coming to an end. Nevertheless, commercial-recreational conflict will continue in Florida and the Commission will remain at the center, seeking solutions to solve very real marine resource problems. We can only hope that regard for these resources will be the focus of all sectors and of the people who must make the critical decisions for future generations.

REFERENCES

1. Chapter 83-134, Laws of Florida.
2. 16 U.S.C. 1851.
3. Section 370.025(2)(a), Florida Statute (1985).
4. Section 370.025(2)(c), Florida Statutes (1985).
5. 16 U.S.C. 1851(a)(4).
6. Section 370.025(2)(g), Florida Statutes (1985).
7. 16 U.S.C. 1851(a)(5).
8. Section 370.026(3), Florida Statutes (1985).
9. Chapter 46-2, Florida Administrative Code.
10. Division of Administrative Hearings, Final Order in Case No. 86-1841R, issued August 26, 1986, by Diane D. Tremor, Hearing Officer. (Spanish Mackerel Final Order).
11. Spanish Mackerel Final Order, pages 11-12.
12. Spanish Mackerel Final Order, pages 12-13.
13. Per Curiam Opinion filed January 7, 1987, Case Nos. BP-133 and BQ-24, First District of Appeal, State of Florida.
14. Proposed Rule Chapter 46-22, as noticed in the July 11, 1986 issue of the Florida Administrative Weekly, pages 2595-2597.
15. Proposed Rules 46-22.004, 46-22.005, and 46-22.006.
16. Emergency Rule 46 ER 86-3, Red Drum (Redfish), Emergency Closure of Florida Fishery, effective November 7, 1986.
17. Opinion filed February 19, 1987, Case No. BQ-41, First District of Appeal, State of Florida. (D.C.A. Opinion).
18. D.C.A. Opinion, page 5.

COMMERCIAL-RECREATIONAL FISHERIES LITIGATION IN FLORIDA

Kenneth G. Oertel
Oertel & Hoffman, P.A.
Tallahassee, Florida

The past year in Florida has seen protracted and intense litigation on fisheries' questions that directly impact the relationship between commercial and recretational fishing interests. If you accept the proposition that there presently exists intense conflict between parts of the recretational and commercial fishing sectors along the gulf coast states within the United States, particularly for the fisheries that have come under study as needing greater restrictions on catch, such as redfish and mackeral, it is easy to understand how this litigation can be characterized as a manifestation of conflict between recreational and commercial fishing.

As someone who represents the commercial fishing industry in Florida and confesses to such bias, it is my impression that commercial fishermen want no more than a reasonable piece of the pie, while the recreational sector wants the entire resource for its exclusive use. This is nothing new but perhaps what has changed or evolved in the recent time is the strength of opinions expressed on both sides of this complex issue.

In Florida, fisheries regulation is accomplished by rules adopted by the Florida Marine Fisheries Commission. This Commission is composed of lay members appointed by the Governor to serve as a seven member panel to consider and adopt fisheries regulations. All such rules proposed by the Florida Marine Fisheries Commission must be approved by the Governor and six elected cabinet officials, who comprise, in this instance, the Florida Department of Natural Resources. Within the past year, rules of the Marine Fisheries Commission relating to mackeral and redfish have come under legal challenge.

The first rule was a rule putting a commercial quota on the harvest of Spanish mackeral. This was challenged by Southeastern Fisheries Association. The challenge was rather technical and dealt largely with whether the Marine Fisheries Commission had the statutory

authority to adopt a "quota". Challenges to proposed rules in Florida are heard by administrative hearing officers who decisions are final. Such orders are appealed directly to the District Court of Appeal. In the litigation regarding the Spanish mackeral the hearing officer found the Commission had the authority to impose a quota on the catch of Spanish mackeral. Subsequently, the First District Court of Appeal in Florida affirmed that decision. The second challenge to the proposed Commission rules was more complex and involved a proposed rule to make redfish a "gamefish" by forbidding the sale of native redfish in Florida. This rule was also challenged before a state hearing officer who, after hearing extensive testimony from a variety of expert witnesses from the University of Miami, University of Florida and U. S. Dept. of Commerce and other recognized experts, determined the rule would violate the Florida Marine Fisheries Commission's rulemaking statutes and was invald.

The hearing officer based his decision largely on the facts, as shown at hearing, that in Florida commercial fishing catches as few as one-eighth of the total harvest of redfish; recreational fishing catches the remainder. The hearing officer thought it was grossly unfair that the protection of redfish from overfishing was to be accomplished by eliminating commercial fishing, which was catching a very small number of the total redfish harvest in any given year.

The hearing officer also made other findings indicating the rule also exceeded permissible legal standards in that it was not based on the best information available, would not provide optimum yield, and would allocate an excessive share of the resource to a particular user group; all of which violate the relevant Florida Statute, Section 370.025.

On appeal the District Court of Appeal in a decision dated February 19, 1987, overturned the hearing officer's ruling and with very little discussion indicated that regardless of the facts, the Marine Fisheries Commission could make redfish a gamefish. The District Court of Appeal reinstated the validity of the rule. At present a Motion for Rehearing is pending before that court. If rehearing is not granted it is probable

the decision will be appealed to the Florida Supreme Court.

Related Criminal Prosecution

The notoriety regarding redfish has not escaped law enforcement authorities in Florida. In 1986 the Florida Marine Patrol decided to press criminal charges against Raffield Fisheries, Inc. of Port St. Joe, Florida for catching and possessing red drum caught by purse seine in the EEZ, off the State of Louisiana. These arrests culminated several weeks of "undercover" operation conducted jointly by the U. S. Dept. of Interior and Florida Marine Patrol investigating purse seine fishing within the EEZ off Louisiana. To fully explain this litigation some factual introduction would be helpful.

In 1984 the National Marine Fishery Service culminated a long study of the status of redfish in Federal waters in the Gulf of Mexico and concluded that no restrictions on catch were justified at that time. Pursuant to that decision, a management plan was not adopted or recommended to the Secretary of Commerce, and the National Marine Fishery Service allowed unrestricted catch of redfish in the EEZ.

In June of 1986, partly in response to Congressman Breaux's hearing held in New Orleans on June 2, 1986 regarding potential legislation over redfish in the EEZ, the National Marine Fishery Service adopted an emergency rule allowing the taking of up to 1 million pounds of redfish by purse seine in the EEZ for up to 90 days. Raffield Fisheries obtained a permit under this rule from the U. S. Dept. of Commerce to fish for redfish as allowed by the rule. Following receipt of the permit the "Fisherman's Pride," a vessel owned by Raffield Fisheries, participated in the redfish fishery along with other vessels from various coastal states. The redfish caught by the Fisherman's Pride were landed in Venice, Louisiana and trucked to Florida.

Based on these facts, the Florida Marine Patrol filed criminal charges against Raffield Fisheries and its owner, Eugene Raffield, individually, for violating Florida's "purse seine law." This law, Section 370.08(3), F.S., forbids any person from fishing for food fish anywhere in the world by use of a purse seine and to possess fish so caught if they are possessed for purposes of sale.

Even though the fish in question were caught pursuant to permit issued by the U. S. Government, and even though the fish were not caught in Florida waters, or anywhere near Florida waters, the Florida Marine Patrol considered the violation they perceived to be so serious that 35 Marine Patrol officers had to serve the warrants and "secure the premises" when they descended upon Raffield Fisheries.

All charges against Raffield Fisheries were eventually dismissed by County Court Judge David Taunton based on a variety of grounds. He found the Florida statute in question to be unconstitutional for several reasons, including; it violated the Supremacy Clause of the U. S. Constitution regulating interstate commerce; it violated due process questions in that the statute was vague; it violated equal protection protections in that Florida citizens were being deprived access to a fishery that citizens of other states were allowed to participate.

The State of Florida appealed Judge Taunton's decision and the case is now pending in the First District Court of Appeal in Tallahassee. The State's case suffers from several weaknesses, including the obvious question of federal preemption. The law is very clear that where in matters of commerce where the Federal Government permits certain activities to occur, a state cannot regulate or countermand federal laws or rules. It is clear the attempted prosecution in this case applies to a circumstance where the Federal Government gave permission to permitted boats to harvest redfish in the EEZ. The state prosecution attempts to make that same conduct a criminal offense.

The implications of the decisions that will be rendered by the Florida court on the validity of Florida's purse seine statute could have significant implications with regard to any other similar laws of this nature that may exist in any other coastal state. For example, if the National Marine Fisheries Service decides to allow fishing for redfish in the EEZ anytime in the future, and if all coastal Gulf states were to adopt statutes similar to Florida's purse seine law, the Management Plan of the National Marine Fisheries could be countermanded by state legislation. It is doubtful this would be permitted by the courts as it would be equivalent to allowing the states to overrule federal management policy over fisheries in the EEZ.

Because of the importance of these issues the decision by the Florida courts on this case should be of great interest to other coastal states, and, in particular, the commercial fishing sector that fishes within the EEZ in the Gulf of Mexico.

Another related prosecution to the Raffield purse seine case occurred at the same time the state charges were being brought. The United States Attorney's Office in New Orleans, Louisiana, after lengthy proceedings before a Federal Grand Jury, charged Raffield Fisheries with felony counts of the Lacey Act. The basic facts underlying the charges were similar to those described above in the state prosecution under Florida's purse seine law. The theory behind the Lacey Act prosecutions was that Florida's purse seine law was violated when the fish were caught, since Florida law prohibits the taking of food fish by purse seine. Even though the fishing occurred outside the territorial limits of Florida, the U. S. Attorney's Office sought to maintain that the catching of the fish by purse seine, contrary to Florida law, gave them a contraband status. Then transporting those fish, so caught, across state lines, under the U. S. Attorney's Office theory of the case, created the violation of the Lacey Act.

Representing Raffield Fisheries I filed a Motion to Dismiss, in Federal Court, alleging, among other things, that the Florida Statute was unconstitutional as found by Judge Taunton described above. Therefore, under that argument, no Federal violation could occur if the Florida statute was invalid or unenforceable. It was also argued that the Florida Statute was preempted by federal law in that the U. S. Dept. of Commerce, in 1984, had made a decision that redfish could be harvested without limitation in the FCZ by purse seine.

Other equal protection and due process arguments were submitted to the U. S. District Court on those Lacey Act charges. Shortly before the Motion to Dismiss was to have been heard by Judge Beard, the U. S. Attorney's Office dismissed all charges. That ended the federal criminal prosecution, at least for the time being.

What is most disturbing about both these prosecutions is that they are blatant attempts to manage a fishery

through the attempted "enforcement" of theoretical criminal violations. Regardless of which side of the fence a particular person may sit on the question of commercial fishing for redfish, and it is hard to find a person truly neutral on this point, it is hard to argue with the proposition that fishery management should not occur through imaginative legal theories that would impose criminal responsibility or routine commercial fishing.

In the federal prosecution it was extremely clear that the Grand Jury indictment was obtained at the insistence of the U. S. Department of Interior, whose agents had a philosophical disagreement with the National Marine Fisheries Service on whether redfish should be harvested in the EEZ. Having not convinced National Marine Fisheries on that policy question, the U. S. Attorney's Office was used as a means to intimidate commercial fishermen operating with the express permission of the U. S. Department of Commerce, putting not only their liberty, but all their equipment and business in jeopardy.

Getting back to the state prosecution of Raffield Fisheries, which is presently pending before the Florida First District Court of Appeal, it is not anticipated that a decision on that case would be rendered at least for several months. Regardless of how that court decides the question of the constitutionality of Florida's purse seine law, it is certain the matter will then go to the Florida Supreme Court.

CONFLICTS BETWEEN FISHERIES

Maumus F. Claverie, Jr.

ABSTRACT. A healthy supply of fish minimizes conflicts between fishermen. As the supply diminishes, conflicts between fishermen increase. When overfishing takes place under the federal management system, an increase in conflicts between fishermen results. These conflicts can be reduced by a management system that assures an adequate supply of the resource on a species-by-species basis.

I. INTRODUCTION

Conflicts among fishermen arise when fishery resources dwindle. There is minimum confrontation when enough fish per geographic area are available to keep fishermen "happy". When the resource dwindles below the "happy" level, conflicts begin to occur because of frustration and concern for the resource.

A reading of the findings of the Magnuson Act (16 USC 1801) shows that one of its aims is to keep or rebuild stocks at the "happy" level. 16 USC 1801 (a) (5) and (6) state that a national program "is necessary to prevent overfishing, to rebuild overfished stocks" and that "if placed under sound management before overfishing has caused irreversible effects, the fisheries can be conserved and maintained so as to provide optimum yields on a continuing basis."

When stocks fall below "happy" levels, reduced fishing mortality becomes the most common management measure to solve the problem. As abundance declines, less efficient fishermen suffer reduced catches before more efficient fishermen do. This places "inefficient" fishermen in conflict with the "efficient" fishermen because the former are concerned for the resource and upset about being displayed by the latter.

In most recent cases I know of, the concern of the inefficient fisherman was a harbinger of resource problems. It seems to me that the Magnuson Act, as set forth in the findings just quoted, was designed to avoid these sort of problems.

II. FAILURES OF THE MAGNUSON ACT

Let's take a look at how the agency charged with implementing the Magnuson Act has prevented the Act from achieving that goal in favor of over-exploitation. In the New England fishery, one of the management concepts is "pulse overfishing" on a species-by-species basis such that one species is "fished down." Fishing pressure is then switched to another species while the first species recovers. Because of the economics of management, enforcement, and marketing, this is not necessarily bad in itself--so long as the resource itself remains healthy,

and there are no competing fishermen who prefer a constant abundance of that species.

J. Burton Angelle, Secretary of the Louisiana Department of Wildlife and Fisheries, has stated: "If depletion of the species occurs, numbers of fish comprising the population usually reach such a low level that commercial fishing is no longer profitable. There remains, however, sufficient numbers to replenish that population if the habitat and associated hydrological and environmental conditions are maintained at suitable levels." (Letter, April 14, 1986 from Angelle to Hannemann).

The main problem with this approach to fisheries management is two-fold. First is the serious question as to whether pulse overfishing is allowed by the Magnuson Act. Second, does anyone know a species which only one group of fishermen uses? A textbook example might come from aquaculture: suppose a farm contains twenty-four ponds and every month one of the ponds is netted for production. The management goal would be to leave enough fish to assure adequate production within twenty-four months. Certainly, this management regime would not want to allow fishing that pond until the next "pulse," so that a maximum resource would be available.

To avoid the kind of conflicts brought about by diminishing fisheries resources, the Magnuson Act is designed to prevent "overfishing." National Standard One (16 USC 1851 (a)(1)) provides that: "conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the benefit of the U.S. fishing industry." This national standard is the one that embodies the concept contained in the findings (16 USC 1801 (a)(5) and (6)). To the extent that preventing this type of overfishing would avoid conflicts, the Magnuson Act attempts to prevent such conflicts.

The question is, has this worked? In the Gulf, King mackeral, redfish, croaker, red snapper and pompano all seem to have been overfished in a "pulse" fashion. As new fishing pressure is placed on the resource by more efficient gear or increased numbers of fishermen, the resource declines. The least efficient fishermen are adversely affected, and become aware of the decline first. This brings about a conflict between fishermen of a magnitude in accordance with the degree to which that species is taken by more inefficient fishermen.

Why does this happen under the Magnuson Act? You would think it was designed to avoid such conflicts by assuring an abundance to the fishermen. To arrive at the answer, we should look at the "prohibition" against overfishing provided by National Standard One, and what the agency has done with it.

The National Marine Fisheries Service says that "pulse overfishing" is not among the types prohibited by National Standard One. Therefore, it is all right to overfish by "pulse."

In the advisory guidelines published by the Secretary, as required in the Magnuson Act (16 USC 1851(b)), the agency states in 50 CFR 602.11(d)(5) that "pulse overfishing" is not "overfishing" under National Standard One. In fact, the agency intimates that the "overfishing" allowed contrary to National Standard One's prohibition can, under certain circumstances, deplete the resource to the point just before that resource qualifies under the Endangered Species Act (50 CFR 602.11(d)(1)).

If any species of finfish managed by the federal system in the Gulf has a serious resource problem, it has that problem because it has been overfished. An examination of commercial landings of Gulf Croaker and Redfish over time reveals the "pulse" and the resultant devastating effect on the resource. Croaker have slight following among inefficient fishermen, and you do not hear much about demise of the croaker resource. You may have heard redfish--thay have a large following among inefficient fishermen.

Could conflicts like these have been avoided? Probably yes, if pulse overfishing were not allowed. Increase in catch would not have been allowed unless good and competent science could assure sustainable catch levels, without displacement of fishermen or adverse impact on the species.

Realization of this goal would require only a change within the agency. Unfortunately for the health of the resource and for the inefficient fishermen, there are indications that Congress is inclined in the opposite direction. Because of time limitations, that will have to be the subject of some other presentation.

III. THE REDFISH CONTROVERSY: INEFFICIENT VERSUS EFFICIENT FISHERMEN

The Secretary's Redfish Plan positions the federal government to preempt state laws, in order to reduce inshore fishing pressure for the benefit of the offshore purse seine fleet. This approach will ultimately be bad for the resource because under this regime inshore fishermen will be reluctant to reduce their fishing pressure.

Louisiana's inshore stock of redfish is overfished to the extent that far too few juveniles are passing through the inshore fishing gauntlet to reach the offshore spawing stock. The inshore component of the fishery is composed of "super-inefficient" (i.e., "rod and reel" recreational and commercial fishermen) vs. more efficient (i.e., net fishermen). The offshore component is composed of the historical recreational (and occasional commercial catches) and the new "super-efficient"

purse seine fleet. As a result, we have relatively inefficient fishermen inshore vs. relatively efficient fishermen offshore.

As determined by the Gulf Council after its 1981-1984 study of Gulf redfish, an increase in offshore fishing pressure could quickly and drastically reduce spawning stock to the point of recruitment failure. In spite of this finding, the Gulf Council did not go forward with a redfish management plan in 1984, for three reasons. First, the commercial interests who had been pushing for the plan came to realize that the data leaned toward prohibiting the offshore purse seine fishery. They therefore changed their votes, voting against the plan. Second, the Texas interests on the Council were concerned about the effect a federal plan would have on state management regimes. Despite requests to set forth the problem and give answers, the Council had never been advised in this regard. Third, since the purse seine fishery had not then developed, it was fairly obvious that producing a fishery management plan would be fruitless, in view of the reluctance of the federal Office of Management and Budget to spend money solving a problem that did not yet exist.

Because of the drastic increase in offshore fishing pressure with onslaught of the purse seine fleet in federal waters, the Secretary of Commerce issued the first Fishery Management Plan for redfish in December, 1986. The draft of that plan stated that if states must reduce their fishing pressure, then no take of redfish would be allowed in federal waters. Section 12.6.2(7) of the draft redfish plan states that, in the event it is concluded there is insufficient spawning biomass to accommodate the historical state yearly harvest of ten million pounds, "the regional director shall advise the states and council of the situation and seek greater conservation efforts by the states to reduce catches in state waters. This will also result in increased recruitment to the spawning stock from state waters. If this situation occurs, the retention of red drum will be prohibited in the FCZ" (emphasis added).

This approach would have avoided conflict between efficient and inefficient fishermen by putting the historical fishery first. It would have been a great step forward in encouraging reduced inshore fishing pressure as needed for the health of the resource. Unfortunately, the plan as published changed this approach by 180 degrees. (See section 12.6.2(7) of the final redfish plan, which states: "should this stock assessment in (1) conclude that a need exists to increase recruitment into the spawning stock biomass, the regional director shall advise the states and council of the situation and seek conservation efforts by the states to adjust harvest in state waters.")

IV. CONCLUSION

This new approach results in two problems. First, the federal management regime is now positioned to preempt state laws. The intent is to reduce inshore fishing pressure for the benefit of the offshore fishery (i.e., the purse seine commercial fleet) rather than only as needed for the health of the resource. Second, this approach will create serious problems for the resource itself. While inshore fishermen may be willing to reduce fishing pressure for the benefit of the resource, it will be extremely difficult to convince them to do so if the apparent effect is to save the fish for the benefit of the offshore purse seine fleet.

FISHERIES MANAGEMENT AND ECONOMIC EFFICIENCY: IMPLICATIONS FOR THE GULF OF MEXICO REGION

Walter R. Keithly
Michael Wascom

Coastal Fisheries Institute
Center for Wetland Resources
Louisiana State University
Baton Rouge, LA 70803-7503

ABSTRACT

Regulation of fisheries for biological reasons, even if done with legitimate governmental purposes, renders fisheries economically inefficient. With respect to commercial fisheries, management objectives can be either biological or economic in scope. Economic objectives can be broken down as to whether the emphasis is on economic efficiency or the equity of distribution of economic benefits. Regulation based on biological standards meet no efficiency criteria and fail in terms of most equity criteria. It can be argued that fishing policy at the state level in the Gulf region is largely biological in scope subject to the condition that employment not be constrained. A review of the objectives used for fishery management in each of the Gulf states supports this contention. The Gulf fishing industry is experiencing transition and increasing competition both domestically and internationally. Successful adjustment for the industry may require a more efficient harvesting sector. Since increased economic efficiency necessitates limited access to the fishery, Gulf policy makers may wish to consider this option.

INTRODUCTION

The United States commercial fishery sector is in a period of transition. Nowhere is this likely to be more evident than in the Gulf region. Declining economic activity in the oil and gas industry has led to layoffs and a high level of unemployment among coastal residents in some Gulf States. Many of these residents have turned to commercial fishing as a source of income. Consequently, there is increasing competition among commercial fishermen for the limited, and in some instances dwindling, fishery resources as well as additional conflicts between commercial and recreational interests. Finally, the Gulf fishing sector is facing increased competition from a growing import market and potential fish-substitute products. In the face of this transition, it is useful to examine state policy, and its implications, with respect to the commercial fishing sector.

Thus, the primary goal of this paper is to examine current fishery management policy at the state level in the Gulf region and to discuss possible implications contained therein. To accomplish this goal, some of the more frequently considered fishery management objectives are initially reviewed. This review is followed by an examination of the criteria used for fishery management among Gulf states. The third section of the paper provides some specific Gulf region fishery management examples. The paper then turns to examining possible ramifications to the harvesting sector in the Gulf region resulting from current management objectives. Finally, the paper concludes with some suggestions for future management considerations.

FISHERY MANAGEMENT OBJECTIVES

Before addressing the issue of management objectives, one may ask why fisheries are managed. To answer this question, we need to examine what transpires in an open-access, unregulated fishery. Since, by definition, entrance to this type of fishery is unrestricted, investment and manpower will be attracted to it "so long as the 'opportunity' incomes of these factors (going interest and wage rates) are being matched therein [MacKenzie, 1983, p. 5]". In other words, movement into the fishery will occur as long as individuals find it advantageous to do so. They will find it advantageous as long as expected earnings exceed all costs associated with fishing; including interest that could be earned on investment and the costs associated with one's own time (i.e., what the individual could earn in his best alternative form of employment). Investment and manpower will be forced out of the fishery when the opportunity incomes of these factors are not being matched therein. Since regulations are not imposed on individual fishermen, they are free to take those actions they feel to be in their best interests. As such, they will evaluate output prices and input costs with respect to anticipated catch and will choose that combination of inputs that will maximize expected profits. Though there are some obvious benefits

associated with an open-access, unregulated fishery (such as the fact that there are no government interferences or enforcement costs associated with the management of the fishery), the fact that fisheries are managed suggests that policy-makers feel these benefits are outweighed by the costs. And indeed, costs can be large.

Since fishermen are in competition with one another over the same resource, there is little incentive for individual fishermen to conserve it. This reflects the fact that property rights to the resource are not assigned to individuals; rather, the resource is common property. In instances where cost per unit of fishing effort is low relative to revenue received, effort will tend to expand and will, in the long-run, always be excessive on an economic basis and often on a biological basis.

From an economic viewpoint, a reduction in industry effort, by transferring investment and manpower from an open-access fishery to more productive uses in society, will result in an increase in net economic benefits to society. If industry effort is excessive from a biological viewpoint, reductions in it will result in an increased sustained yield and higher industry revenues (assuming dockside price does not vary more than landings in percentage terms as the latter are increased).

In instances where industry effort is excessive in biological terms and still expanding, industry catch can often exceed the ability of the fish stock to replenish itself. This can ultimately lead to the economic collapse of the fishery. The social costs associated with the collapse of the fishery are obvious, though immeasureable, and include the sudden, and often massive, displacement of manpower and investment. Government assistance in the form of loans, etc. may then be required. Furthermore, as the fish stock is regenerated, the cycle repeats itself as manpower and investment are again attracted to the fishery only to once again be displaced by its collapse. Thus, the fishery may tend to operate through time in an oscillating manner; i.e., a continual pattern of large increases in effort followed by large decreases.

The previous discussion is not meant to imply that all commercial fisheries face certain economic collapse in the long-run if not properly managed. Industry profits in an open-access, unregulated fishery will, however, almost certainly tend to dissipate through time (assuming the fishery is in high commercial demand) and will approach zero in the long-run.

To see why this is so, first consider the case where industry revenues exceed industry costs. In this situation, individual fishermen are earning profits. This will encourage entrance and a possible expansion of effort among existing fishermen. Such actions will tend to drive industry profits toward zero. Conversely, negative industry profits will tend to stimulate exit and a possible change in the level of effort among remaining fishermen. Again, industry profits will eventually approach zero.

Equilibrium in the fishery (a situation where (1) catch is equal to stock replacement and (2) where there is no incentive by individual fishermen to change their level of effort or for fishermen to enter or leave the fishery) will only be attained when industry profits equal zero. At this equilibrium, fishermen on average are just recovering all their costs (including the costs associated with their time), and hence are highly susceptible to shocks from outside the fishery (such as a sudden escalation in fuel prices) as well as from within (such as a sudden change in environmental factors which impact the fish stock). This susceptibility can also lead to sudden, and often massive, displacement among fishermen. As previously mentioned, there are immeasurable social costs related to this displacement.

Faced with the consequences of unmanaged fisheries, policy makers have generally decided to manage those fisheries in heavy use. There are an infinite number of types and degrees of fishery management based upon just as many different management objectives. With respect to commercial fisheries, management objectives might include, but are in no way limited to those listed in Table 1. These objectives are categorized according to whether they are biological or economic in scope. If economic, the objectives are further defined as to whether emphasis is on economic efficiency or the equity of distribution of economic benefits.

A review of the regulations typically imposed on the U.S. commercial fishing sector, especially at the state level, suggests that management objectives tend to be based on biological principles and if economic principles are considered, the concept of equity is of primary concern.[1] As shown in the next section, state policy in the Gulf region is an excellent case in point. These regulations take a variety of forms including one or more of the following: (1) restrictions on the size of fish taken, (2) seasonal and area closures, (3) gear restrictions, and (4) industry quotas.

Restrictions of the types discussed above are generally implemented for the purpose of protecting the fish stock. They do so, however, by imposing regulated inefficiency on the fishing industry. For example, area and seasonal closures are generally implemented as a means of preventing catch when fish are most susceptible to certain harvesting techniques. Though able to achieve their stated objectives, restrictions of this nature force fishermen to act in a less efficient manner than would otherwise be the case. Seasonal closures may also result in the

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1By comparison, the national standards for fishery conservation and management explicitly recognizes efficiency as a management objective:

> Conservation and management measures shall, where practicable, promoted efficiency in the utilization of resources; except that no measure shall have economic allocation as its sole purpose [Subchapter IV (Title III). National Fishery Management Program sec. 1851, sec. 301(5)].

Table 1. Selected Fishery Management Objectives.

Objectives	Main Purpose		
	Biological	Economic	
		Efficiency	Equity
1. Conserve fish stocks	X		
2. Maximize catches	X	X	
3. Stabilize stock levels	X		
4. Stabilize catch rates		X	
5. Provide employment			X
6. Increase fishermen's income		X	X
7. Increase cost effectiveness		X	
8. Reduce overcapacity		X	

Source: adapted from Clark (1985) p. 144.

nonoptimal use of resources in the sense that manpower and investment (vessels, processing houses, etc.) often lie idle for extended periods of time. Gear restrictions are clear examples of attempts to limit the efficiency of individual enterprises. To the extent that fishermen are often able to circumvent the policy intentions of the original gear regulations by making minor gear modifications, etc., they will do so whenever they see it to be in their best interests. Additional gear restrictions will need to be imposed in response, further limiting industry efficiency. Industry quotas, without additional quotas on individual enterprises, encourage fishermen to expand fishing effort beyond what would normally be the case in order to obtain an increased share of the total allowable catch. This not only leads to excessive industry effort but also results in manpower and investment lying idle for long periods of time once quotas are reached.

Since none of the aforementioned regulations limit access to the fishery, entry into the fishery will still occur as long as the industry is generating profits. Industry profits will therefore be driven towards zero in the long-run, even with regulations of the type discussed above. Therefore, even with these regulations, fishermen are still highly susceptible to shocks from outside as well as from within the fishery. While protecting the fish stock, commonly employed regulations do little or nothing to improve the economic position of individual fishermen. Thus, these regulations meet no efficiency criteria and fail in terms of most equity criteria (with the exception of providing employment).

Management measures to increase fishing efficiency are rarely seen in the United States. This reflects the fact that economic efficiency in the fishery can rarely, if ever, be achieved in the long-run without first limiting access. If access is not limited, industry profits will always be driven towards zero in the long-run if the fishery is in high commercial demand. Thus, there is an immediate and difficult tradeoff between the economic issues of equity and efficiency; in other words, a tradeoff between providing employment and increasing fishermen's income and cost effectiveness (through a reduction in capitalization). In addition to limiting access to the fishery, effort per enterprise will need to be limited if efficiency is to be eventually attained. This reflects the fact that without further restrictions, enterprises will continue to increase effort to obtain a larger share of total industry catch. Enterprise restrictions can be achieved through financial disincentives, such as a tax on fishing effort or catch, or through an individual enterprise quota allocation (see Clark, 1985, for details).

MANAGEMENT POLICY AMONG GULF STATES

Fishery management policy in the Gulf region is determined at the state and federal level. At the state level, fishery policy reflects an amalgamation of several broad, sometimes conflicting, objectives. These objectives can either be written, as in the case of statutes, or unwritten, as with customs. It can be argued that fishery policy at the

state level in the Gulf region is that of providing employment opportunities subject to the constraint that fish populations and subsequent harvest be maintained at some 'adequate' level. Economic objectives, other than one of providing employment, are not often used in fishery management at the state level, and when specified by law, tend to be couched in vague terms. A quick review of the objectives used for fishery management in each of the Gulf states will help support this contention. This review draws heavily on work conducted by Knight and Jackson (1973) and in specific instances, their work is quoted directly.

In the State of Florida, the Division of Marine Resources (under the Department of Natural Resources) is given the duty

> [T]o preserve, manage, and protect the marine, crustacean, shell and anadromous fishery resources of the state in the waters thereof; to regulate the operations of all fishermen and vessels of this state engaged in the taking of such fishery resources... [and] to conduct scientific, economic and other studies and research, all of which duties and operations shall be directed to the broad objectives of managing such fisheries in the interest of all people of the state, to the end that they shall produce the maximum sustained yield consistent with the preservation and protection of the breeding stock [Fla. Stat. 370.02(2)(a)].

Among other measures, management regulations must be consistent with the following standards [Fla. Stat. 370.025 (a),(b),(g)]

> (a) The paramount concern of conservation and management measures shall be the continuing health and abundance of the marine fisheries resources of the state.
> (b) Conservation and management measures shall be based upon the best information available, including biological, sociological, economic, and other information deemed relevant by the commission.
> (g) Conservation and management decisions shall be fair and equitable to all the people of this state...

In the State of Alabama, full jurisdiction and control of all seafoods existing or living in the waters of the State is given to the Department of Conservation and Natural Resources [Ala. Code Tit., 9 sec. 9-2-4(a)].

> [The Department] shall ordain, promulgate and enforce all rules, regulations, and orders deemed by it to be necessary for the protection, propagation or conservation of [all seafoods]; [It] may by order duly made and published proscribe the manner of taking or catching, the time when, and designate the places from which seafoods may or may not be taken or caught,... as it may deem to be for the best interest of the seafood industry.

In Mississippi, the Mississippi Commission on Wildlife Conservation is vested with full power to manage, control, supervise and direct any matters pertaining to all saltwater aquatic life [Miss. Code. Ann. (Recomp 1972) 49-15-11(a)]. The seafood chapter of the Mississippi Code contains a statement of public policy for the state as follows [Miss. Code. Tit., 49 sec. 49-15-1]:

> [T]he public policy of this state shall be to recognize the need for a concerted effort to work toward the protection, propagation and conservation of its seafood and aquatic life in connection with the revitalization of the seafood industry of the State of Mississippi ... [I]t is the intent of the legislature to provide a modern, sound, comprehensive and workable law to be administered ... as may be necessary to protect, conserve and revitalize seafood life in the State of Mississippi.

In Louisiana, "[T]he control and supervision of the wildlife of the state, including all aquatic life ..." is given to the Louisiana Wildlife and Fisheries Commission. La. R.S.56: sec. 601(A). In addition, the Commision is established

> To protect, conserve, and replenish the natural resources of the state, including all aquatic life ... [La. R.S.56 sec 1(A)]

Recent enactments suggest a broader approach to seafood resource management in Louisiana. Specifically, Section 571 of Title 56 of the Louisiana Revised Statutes (commonly referred to as the Underutilized Species Act) provides the following general guidelines for management:

> Recognizing the value of the seafood industry to the economy of the state of Louisiana, recognizing that the seafood industry employs hundreds of Louisiana citizens, thereby decreasing unemployment and the burden unemployment places on the state fisc ... it is [therefore] the policy and purpose of this [section] to provide every method of encouragement and assistance to the commercial fishermen of the state of Louisiana, ..., to prevent unemployment of Louisiana citizens, ..., [and] to provide economic stability in those areas of Louisiana so dependent on the seafood industry.

In Texas, the Parks and Wildlife Department is authorized to

> [R]egulate the taking and conservation of fish, oysters, shrimp, crabs, ..., and all other forms of marine life [Tex. Parks and Wildlife Code Tit. 1, Ch. 1, Subchapter B, Section 1.011(d)]

With respect to oysters and shrimp, objectives to be used to "regulate the taking and conservation" of these species closely follow the national standards for fishery conservation and management and include (though

specific to shrimp, the following objectives are essentially the same for oyster regulation) [Ch. 77, Subchapter A, Section 77.007 (b) and Ch. 76, Subchapter E, Section 76.301 (b)]

(1) measures to prevent overfishing, while achieving, on a continuing basis, the optimum yield for the fishery;
(2) measures based on best scientific information available;
(3) measures to manage shrimp throughout their range;
(4) measures, where practicable, that will promote efficiency in utilizing shrimp resources, except that economic allocation may not be the sole purpose of the measure;
(5) measures, where practicable, that will minimize cost and avoid unnecessary duplication in their administration; and
(6) measures which will enhance enforcement;

As the review of the management objectives for each of the Gulf states suggests, biological principles are heavily weighted in policy making. Economic objectives, where stated, are generally vague and hence can imply several different, often conflicting, economic policy prescriptions.

In Florida, fisheries are to be managed for maximum sustained yield; largely a biological tenet to fishery management. Economic information can, however, be used in achieving this management objective. There appears to be no statement though as to which economic objectives (i.e., maximizing employment, maximizing individual enterprise revenues, etc.) should be used as a conduit for meeting the biological objective except that management is to be in the interest of all people in the state and that management decisions shall be fair and equitable to all the people of the state. The fact that decisions must equitable suggests that efficiency is not of paramount concern.
In Alabama, seafood resources are to be managed for protection, propagation, or conservation; subject to the constraint that rules and regulations are 'for the best interest of the seafood industry'. Though economically oriented, the term 'for the best interest of the seafood industry' provides very little guidance as to which economic objectives are to be used in policy making. Depending on interpretation, the economic concepts of equity and efficiency may both be considered in the best interest of the seafood industry. These alternative economic positions tend, however, to be mutually exclusive which complicates the development of rules and regulations based on economic interests.

Like Alabama, fishery management objectives in Mississippi are heavily weighted toward biological measures (i.e. protection, propagation, and conservation) though these measures are to be in conjunction with the economic objective pursuant to 'revitalization of the seafood industry'. While clearer than Alabama's economic standards for fishery management, the interpretation of the economic standard 'revitalization of the seafood industry' is not clear-cut and hence can be interpreted in terms of employment, revenue, profits, etc. Each economic measure generally would require implementation of different management measures.

While Louisiana's resource management objectives are biologically oriented (protect, conserve, and replenish), recent legislation (Section 571 of Title 56 of the Louisiana Revised Statutes) gives an indication of the increased political awareness regarding the economic contribution of Louisiana's fisheries. Given that Louisiana's fisheries are to be used 'to prevent unemployment of Louisiana citizens, ..., [and] to provide economic stability in those areas of Louisiana so dependent on the seafood industry', there appears to be little doubt that the equity issue of employment is of major concern in the management of Louisiana's commercial fisheries.

Fishery management criteria in Texas, at least for shrimp and oysters (which together accounted for about 95 percent of the total value of commercial landings in Texas in 1985), are rather explicit and clearly identify economic efficiency as a consideration in management. This makes Texas the sole state in the Gulf region which clearly identifies economic efficiency in the fishing sector as a management objective. At the other extreme, Louisiana clearly does not recognize economic efficiency for management purposes but rather stresses the equity of the distribution of economic benefits. The other states, depending on interpretation of terms such as 'for the best interest of the seafood industry', may or may not consider economic efficiency as a management objective.

In addition to the written criteria regarding fishery policy among Gulf states, there are also customs that must be considered. Since none of the Gulf States has apparently attempted to limit entrance of commercial fishermen in any way (except for the declaration of game status for certain species), it can be further argued that, de facto, fisheries in the Gulf region are viewed by policy makers mainly as a source for employment. Even the licensing structures in each of the Gulf states suggests this. Overall, the license fees required for the commercial fishing sector are so low that they probably exclude only the most inefficient of the inefficient enterprises. Thus, customs also suggest that economic equity overrides efficiency as a fishery management issue in the Gulf region.

MANAGEMENT EXAMPLES

Though an in-depth analysis of the myriad of state laws affecting the economic efficiency of the Gulf region fish harvesting sector is beyond the scope of this paper, two selected examples will help provide some 'substance' to the previous discussion. First, a history of regulations affecting purse-seining in Louisiana's waters is given to illustrate the inherent complexities associated with the use of restricting gear types for management purposes. Second, state laws regarding the taking of shrimp are provided for the purpose of evaluating the economic consequences contained therein.

In response to increasing objections from commercial fishermen regarding the use of purse seines, this type of gear was first prohibited in Louisiana's inside and outside waters, except under experimental permit, in 1981. Since the definition of purse seines in this statute was circumvented by fishermen, this law proved to be difficult to enforce. In response, purse seines were redefined in 1982. That definition also proved to be easy to circumvent, so the definition was changed in 1985. Because there were no restrictions by law regarding what species could be harvested under experimental permits, purse-seiners seized the opportunity to harvest redfish pursuant to experimental permits when demand and subsequent price for redfish expanded in the 1980's. In response, the exception to purse-seining in Louisiana's inside and outside waters (i.e., the experimental permit) was repealed in 1986. Also in 1986, it was made illegal to have a purse seine and redfish together on a vessel, whether inside or outside of Louisiana's waters. Finally, commercial fishermen were limited to possession of not more than two redfish in excess of 30 inches.

As this example indicates, what was originally intended to be a relatively simple law enacted to limit the use of purse seines to certain, specific instances, has now been expanded to a complicated set of regulations. This is due to the profit motive of fishermen which gives them the desire (and generally the ability) to circumvent the intent of regulations whenever they find it to their advantage. It now appears as though gill nets, a less efficient form of gear than purse seines, are becoming increasingly popular for the purpose of taking redfish in Louisiana's waters, so, there is new discussion of placing additional restrictions on the use of gill nets for harvesting redfish.

State laws regarding the taking of shrimp are many and diversified. These laws include most of the frequently used management measures for restricting catch (i.e., gear restrictions, seasonal and area closures, and size restrictions).

With respect to gear restrictions, examples are prolific. For example, it is illegal in Mississippi for a boat or vessel engaged in shrimping to use more than one trawl in the Mississippi portion of the Mississippi Sound. It is also unlawful for anyone to shrimp with a trawl in Mississippi which has a continuous measurement of more than 50 feet along the cork line or more than 60 feet along the lead line. In Louisiana, the use of chopsticks trawls and beam trawls are prohibited. Also, a vessel in Louisiana's inside waters may pull only one trawl not exceeding 50 feet in length or not more than two 25 foot trawls (with exceptions for certain parishes). In Texas, there are also restrictions on the size of trawls which may be used for commercial shrimping, especially for the harvesting of white shrimp.

Seasonal and area closures are just as common as gear restrictions. For example, Florida closes the large shrimp beds which lie in and around the coast of the lower Florida Keys and in the vicinity of the islands of the Dry Tortugas in the Florida Keys. All rivers, bayous, and creeks in

Alabama are permanently closed to the taking of saltwater shrimp for any purpose. In Mississippi, the shrimp season opens on the first Wednesday in June (except south of the Intercoastal Waterway) and closes on January 1. Louisiana has two shrimp seasons in inside waters; one for brown shrimp and one for white shrimp. Also, shrimping in Louisiana's outside waters may be closed from January 15 to April 15, or for such a period of time as deemed appropriate by the Wildlife and Fisheries Commission. Seasons also exist in Texas.

With respect to size restrictions, Florida has a count law of 70 headless or 47 heads-on shrimp to the pound. Alabama has a count law of 68 heads-on shrimp to the pound and 114 headless shrimp to the pound as a minimum which can be made larger by the Commissioner of Conservation and Natural Resources. Mississippi has a count law of 68 shrimp to the pound except for catch taken in another state's waters. The possession count on saltwater white shrimp taken in either inside or outside waters of Louisiana must average no more than 100 shrimp to the pound. Texas has a count law of 65 headless fresh shrimp to the pound or 39 heads-on shrimp to the pound, though these minimum size restrictions do not apply as long as there is a "Texas Closure" provision in the Federal Shrimp Management Plan. In the major Texas bays, there is a count law of 50 heads-on shrimp to the pound from August 15 to October 31.

Though the discussion pertaining to the state laws affecting the commercial taking of shrimp is by no means complete, it hopefully gives an appreciation of the multitude of state laws surrounding the issue. Since it is virtually impossible to overfish a shrimp stock (which is an annually renewable resource due to the very short life span associated with tropical shrimp), it would be difficult to argue that these laws have been enacted for the protection of the species. At the same time, since harvesting a larger count of shrimp tends to increase total poundage harvested and the related value per pound, it can be argued that regulations regarding size restrictions and seasonal and area closures have been established for economic purposes. However, it is apparent that most of the restrictions placed on the industry have been established for equity purposes and do little, or nothing, to encourage increased efficiency.

Restrictions on gear, such as limits on the number and size of trawls that can be pulled, are clearly an attempt to limit the efficiency of large enterprises, and also provide less efficient enterprises a better chance to successfully compete for the limited resource. Seasonal closures in the inshore shrimp fisheries among some of the Gulf States, especially Louisiana, have led to long periods of idleness among fishermen and processors (especially canners) dependent on the small shrimp resource. Also, the opening of the shrimp season and the subsequent large catches during the first few weeks of the season are said to depress prices considerably. Finally, since access to the commercial shrimp fishery is in no way limited, industry effort has increased considerably in recent decades. It is currently believed to be excessive from an economic viewpoint, with industry profits being

marginal in some years and negative in other years when prices or landings are depressed.

RAMIFICATIONS FOR THE GULF FISHING SECTOR

As stated in the introduction, the Gulf region fishing sector is in a period of transition. High unemployment in coastal communities of some of the Gulf States has led to an increase in commercial fishing activity among residents in these areas. Also, recreational fishing activities have increased and are expected to grow with concurrent increases in discretionary income and leisure time. These changes have resulted in increased competition for the limited, and in some instances dwindling, fishery resources.

Increased competition among Gulf region commercial fishermen comes at a time when they are being asked to compete more intensely with comparable imported products. Imports of shrimp for example, the most valuable of the southeastern fisheries, have increased about 75% from about 260 million pounds (headless weight) in 1981 to 452 million pounds in 1985. By comparison, landings of shrimp in the southeastern United States have increased only slightly (though there has been year-to-year variation) since the 1970s, even though the total number of shrimp fishing craft has increased about 40 percent. Whereas imported shrimp accounted for only about 50 percent of total U.S. shrimp consumption throughout the 1970s and early 1980s, it now accounts for more than 70 percent. Significant quantities of oysters (mostly canned), grouper, snapper, and other finfishes are also imported, and these imports are generally increasing.

There are several reasons why imports of the aforementioned species are large and, in most cases, increasing. The reasons are both domestic and international in scope, but basically reflect the fact that increasing domestic demand for these species is not being met by concurrent increases in domestic supplies at acceptable prices. In some instances, domestic supplies are declining even though fishing effort is increasing.

At the domestic level, various federal policies have encouraged imports which compete with products landed in the Gulf region of the United States. For example, the Caribbean Basin Initiative Program was recently established to help 27 developing Central American and Caribbean countries gain economic prosperity through a program of trade, economic assistance, and tax measures. Since many of these countries are endowed with fishery resources similar to those species landed in the Gulf region, success of this program has probably encouraged, and will further encourage, increased Central American landings and exports of these species.

In addition to the domestic factors that have encouraged competition between Central and South American seafood exports and domestic seafood products landed in the U.S. Gulf, international factors also play a role. The large devaluation of currencies in many of the Central and South

American countries and the related demand for U.S. dollars in these countries are two factors to be considered. The devaluation of foreign currencies vis-á-vis the dollar has made exporting of products such as shrimp, grouper, and snapper very attractive. The demand for U.S. dollars in many Latin American countries has resulted in some governments providing industrial incentives for firms doing export business. These industrial incentives have probably encouraged seafood exports through the development of domestic fishing fleets, joint ventures, and aquaculture.

In addition to having an incentive to increase seafood exports, Latin American countries also have the ability. Many of the common property fisheries in the region have not yet been heavily exploited. Thus, there appears to be room for considerable expansion in many of these fisheries at relatively low costs per unit of output. Aquaculture ventures in Central and South American countries have also risen sharply with Ecuador and Mexico leading the way. Much of the recent increase in U.S. shrimp imports is the result of increased foreign aquaculture production. The fishing industry in the Gulf region will undoubtedly face increased competition as fisheries in these countries become more developed. The ability of the Gulf region fishery sector to successfully compete with these imports may well become increasingly difficult as competition within domestic fishery resources intensifies.

In addition to the growing seafood import market, the Gulf region fishing industry may be forced to contend with imitation seafood products in the near future. While a high-quality imitation shrimp product has not yet been developed, "analogs are already competitive at the lower end of the shrimp price spectrum (Vondruska, 1984)". Successful development of a high quality shrimp imitation product could seriously depress domestic shrimp prices. Again, the ability of the Gulf region fishing sector to compete with imitation products may be difficult if access to the domestic shrimp fishery remains open. In the long-run, this may result in a large disinvestment in the Gulf region commercial harvesting capacity.

FUTURE MANAGEMENT CONSIDERATIONS

Given the transitions taking place in the Gulf region fishing sector, policy-makers will likely be called upon with increasing frequency to help fishermen adjust to the changes. Successful adjustment may require, at least in the long-run, a more efficient harvesting sector in the Gulf region. Policy-makers may, therefore, wish to focus attention on means of increasing economic efficiency in the Gulf region harvesting sector. Since increased economic efficiency, at least in the long-run, necessitates limited access to the fishery, policy-makers may wish to consider this issue. Successful implementation of such a program could help ensure a gradual reduction of effort with a minimal level of social costs in the long-run.

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FISHERIES MANAGEMENT: CONSERVATION VERSUS EFFICIENCY

by

Jerry E. Clark and Gary C. Matlock

Texas Parks and Wildlife Department
Coastal Fisheries Branch
4200 Smith School Road
Austin, Texas 78744

Fisheries Management: Conservation Versus Efficiency

The objective for fisheries management in the United States has historically been biologically based. That is, fishery managers have set and attempted to meet goals which are primarily biological in nature (e.g., Maximum Sustainable Yield (MSY)). In 1976, the concept of Optimum Yield (OY) was endorsed, at least at the federal level in the Magnuson Fishery Conservation and Management Act (MFCMA). A recent recommendation that is gaining support, again at the federal level, is that management should first be conservation oriented and then allocative (Hargis 1986). This amounts to the re-emergence of, if not MSY, some other variant of biologically-based fisheries management. This change is attributable to a generally perceived failure of the OY concept (Hargis 1986).

In this paper it will be argued that a return to biologically-based fisheries management is a mistake. This is not to say that biological assessments are unimportant or unnecessary, but the objective of fisheries management should be to maximize economic returns to society from its fishery resources. If maximizing economic returns and its OY implementation are falling out of favor, it is because they have almost never been invoked. It is not because they have failed. To the contrary, it will be argued in this paper that biologically-based fisheries management has failed.

The red drum fishery in Texas will be used to demonstrate the argument. Historically, red drum (Sciaenops ocellatus), spotted seatrout (Cynoscion nebulosus) and black drum (Pogonias cromis) caught in bays were the primary fish species harvested in Texas. In 1974-75, these three species constituted 35, 31 and 19% of the weight and 42, 39 and 11% of the value, respectively, of the total fish landed from Texas bays by commercial fishermen (Texas Parks and Wildlife Department 1975). These combined species also accounted for 43% of the 1975-76 bay sport landings (Osburn and Ferguson 1986).

Of these species, however, red drum has received the most attention from members of both the public and resource managers. There are records almost 100 years old which document a regulatory concern for red drum in Texas (Heffernan and Kemp 1980). The management of red drum in Texas has been an iterative process following the life cycle scenario of Smith (1986). The latest episode is the recently adopted Secretarial fishery management plan instituted by the U.S. Secretary of Commerce (Leach 1986) which reinstitutes in a limited manner a commercial red drum fishery off Texas. In this paper the life cycle of a fishery (red drum) is followed, and an argument is provided that this cycle should be radically altered by selecting allocation as the primary management objective.

The first section of this paper will examine Smith's (1986) life cycle hypothesis as it relates to the red drum fishery in Texas. The second section presents an argument that fisheries experience Smith's life cycle because first, they are open access and second, resource managers choose only to attempt their conservation. The third section will present an argument that the process, based on an attempt to conserve a resource in the face of an open access fishery, is necessarily wasteful and an alternative management scenario based on an allocative principle would be superior.

The Life Cycle Theory

The historical changes in the Texas red drum fishery follow almost exactly the life cycle theory of Smith. As Smith argues:

> "The capture-to-culture evolutionary process creates opportunities, but not for commercial fishing. With more users the typical pattern is for resource use to shift from food production to recreation."

Smith further argues that "management measures typically introduce gear restrictions and reduce fishing time in an attempt to keep catch and effort where they will not do long-term resource damage". The logic behind the life cycle theory appears to be that fisheries eventually have the commercial component removed because it simply kills or takes too many fish. The recreational fishery replaces the commercial fishery because at least at the time when the commercial fishery is removed, recreationists do not take as many fish and, therefore, the resource is conserved. In the limit, however, too much pressure can build in a pure recreational fishery to the point where even with catch and release the resource can be put in jeopardy. As Smith points out via a number of fishery examples, fishery managers have a great deal of trouble actually conserving the resource during the life cycle. These problems emerge even with what is assumed by fishery managers to be total regulatory control.

The situation in Texas follows Smith's life cycle theory including the point of having trouble protecting the resource. As commercial landings of red drum in Texas dramatically increased through the 1970's, harvest restrictions were imposed (Table 1). Trotlines with artificial baits, weekend netting and trotlining and other gears were prohibited. Some of the most extensive restrictions were imposed in 1977 when the Red Drum Conservation Act (Senate Bill 624 of the 65th Texas Legislature) was passed. The Act restricted commercial red drum harvest to full-time commercial fishermen and imposed a boat limit (90.7 kg/day) for the first year and a commercial quota (635-726 thousand kg/year) in subsequent years. However, illegal netting for red drum increased dramatically (Table 2) as reported landings declined,

prices increased (Table 3) and the number of commercial fishermen increased (Figure 1). In 1981, the commercial red drum harvest in Texas was banned completely. Recreational possession limits were instituted in 1978 and size and possession limits have become more restrictive as the years have passed.

What the above scenario does not illustrate is the fact that, until the commercial harvest of red drum was banned in Texas, the conservation goal was not being met. The commercial harvest of red drum peaked in 1976 and then collapsed in the following years to less than half of the 1976 landings. The amount of red drum caught in routine fishery-independent resource sampling program in Texas during the mid and late seventies reflected the decline in the commercial harvest (Table 4). The above is obviously some evidence that the resource was not being conserved.

The questions, and the problems, remain. Why do resource managers often fail to conserve fishery resources, given their conservation goal? What drives the life cycle of fisheries, and is there some other principle besides conservation which will allow fishery managers to do a better job? In the next section, the forces which lead to the changes that Smith has identified in his life cycle hypothesis are described, and the reason fishery managers often fail to meet their goals is discussed.

Conservation and Open Access

The historical justification for fisheries management by governments is the problem of open access. Without some form of management authority, it is argued, fish stocks will by "overfished". Over the years management agencies have generally attempted to solve the problem of overfishing with a single goal: conservation or protection of the resource. Attempts to protect the resource have been made by the techniques which are now standard fare in fisheries management: season and area closures, protected nursery areas, quotas and a plethora of tackle and gear restrictions. However, as a management strategy, conservation attempted via these methods puts fishermen and fishery managers in direct conflict. The reason for the conflict is that attempts to conserve the resource do nothing to reduce the economic opportunities which create the open access problem in the first place. In Smith's life cycle hypothesis, this problem first emerges when the commercial segment predominates.

The problem of open access is that the wrong economic signals are being sent to market participants (fishermen). This is known as a market failure. Fishermen, in the face of regulations designed to conserve the resource, find their economic opportunities unmodified from the open access situation. It is still in their interest to take as much of the highest valued resource at the lowest cost possible while ignoring their impacts on others and

even their own future in the fishery. In other words, the open access problem remains unabated in a fully regulated fishery. Regulations which are only designed to protect the resource are seen by fishermen as nothing more than an economic barrier to overcome. The iterative nature of fisheries management is explained by these forces and these same forces drive Smith's life cycle hypothesis. Every attempt to increase landings by fishermen through technological or market innovation is met with new or more restrictive regulations. The new regulations only serve as an incentive for the fishermen to try newer strategies and the cycle begins anew.

This is clearly demonstrated in the Texas red drum fishery when every attempt to reduce the take by the commercial sector did just that in the short term, but through innovation, the commercial fishermen were able to overcome every restriction in just a year or two. In 1974, the most popular bait for trotlines (plastic) was banned in Texas. The number of licensed trotlines dropped dramatically in 1975, but then increased in 1976 and 1977. In 1977, several rules and regulations came into being to reduce the catch of red drum. Again the number of trotlines dropped the following year, but steadily increased in the next three years to levels which had not been seen since 1974 (Figure 2). The number of commercial red drum fishermen followed the same pattern (Figure 1). None of the attempts to reduce the catch of red drum by commercial fishermen in Texas had any appreciable long run success. The only event which reduced the catch was a decline in the numbers of fish to be caught.

The open access problem has been further aggravated, at least in the United States, by increasing real prices received by fishermen for their catch and the increasing demand for alternative forms of recreation as our society has become wealthier. This has led to further pressure on resources by an increasing number of profit-maximizing fishermen using the latest technological developments and an increasing number of recreational fishermen. Again, the red drum fishery is a case in point. An already overfished fish stock had 6.95 million pounds removed Gulf-wide in under 6 months during 1986 by purse seines which in previous years had accounted for an insignificant portion of the Gulf-wide catch (Leach 1986). This is the kind of economically driven event which has led to the common feeling that OY has failed as a management strategy. Fishermen acting in what they see as their best economic interests and in the face of regulations designed to prevent it are able to increase pressure on the resource to critical levels, even to the point of extinction (Smith 1986). The economic opportunities faced by fishermen have been so good, that through business and political entrepreneurship and often illegal activity, they have been able to thwart management agencies in their conservation goal. Many fish stocks continue to be "overfished".

Further, nearly all of the techniques adopted in the name of conservation are specifically designed to make the fishermen economically inefficient. In commercial fisheries, gear restrictions keep fishermen from prosecuting the fishery with the least cost form of harvesting technology, and this raises the cost to society of operating this fishery. It can even by argued that this has further exacerbated the problem by keeping larger numbers of people fishing than would be otherwise, and a larger number of commercial harvesters compounds the problem technically, economically and politically.

The conservation or biologically-based approach to the problem has failed because it has not dealt with the true nature of open access. The effort to conserve the resource in the face of open access is misguided. From the first, the focus of management agencies should have been to overcome the open access problem, not to treat its overharvesting symptom.

Allocative Fishery Management

It is time to begin the task of confronting the economic forces in fisheries. Smith argues that fisheries inevitably pass from predominantly commercial to exclusively recreational during the life cycle. By examining the fishery during its commercial phase, it is possible to see why this occurs. In the open access case, no one has any incentive to conserve for the future because there is no assurance that those who conserve will benefit from their actions. This leads to the overharvesting problem as commercial fishermen attempt to harvest as much of the resource as quickly as possible.

The solution to this problem is to alter the economic opportunities faced by fishermen. Fishermen must find it to be economically advantageous to operate in such a manner that the fishery is carried out in an economically efficient manner throughout the long term. That is, over time, returns to both the fishermen's investment and the resource itself must be maximized. This requires fishery managers to become business managers similar to those in the private sector who manage valuable assets. Fishery management in this scenario might be seen as a landlord/tenant relationship. Fishery managers are landlords who are responsible for managing the public's fishery resources. The goal should not be to prevent overfishing, but to generate the maximum net economic return over time.

Exclusive rights to commercially harvest must be coupled with a further principle which puts demands on fishery managers equal to those faced by their counterparts in the private sector. This secondary principle is that the exclusive rights to fish must be managed in such a manner that the highest valued product can be generated from the fish stocks at the least cost. The least cost

production principle leads to two further notions. The first is that the exclusive right to fish must be limited in such a way as to minimize the cost of the harvest. Secondly, managing for maximum net economic yield over time requires mechanisms which allow fishery managers the flexibility to respond to changing market conditions on the demand (consumer) side and innovation and technological development on the supply (fisherman) side. This flexibility requirement really means that fishery managers must become entrepreneurs. They will be engaged in the business of fisheries.

For example, if a good landlord/tenant partnership can be designed, then the more innovation which fishermen bring to the fishery (new product forms, more efficient gear, etc.) the better. This is in direct opposition to the current case where innovation is a problem because it can only be seen as adding additional effort to an already overfished fishery (e.g., purse seines fishing for red drum in the Gulf of Mexico). The current management view that innovation and other forms of entrepreneurship in fisheries are counterproductive, which is made necessary by the conservation approach of fishery managers, is itself counterproductive.

In addition, one of the most important advantages of an economically-operated fishery is its natural tendency to be resource (capital) conserving. In other words, conservation is not a principle of efficiency, but is, in general, a natural consequence of it. In the open access case, no fisherman has any incentive to conserve or invest in the future. On the other hand, an economically-operating business by definition will operate so as to maximize the rate of return over time. In a fishery this means that fishermen will have the incentive to maintain the fish stock at such a size as to maximize the present value of their income stream attributable to the fish stock. This is a complete reversal from the current system where the incentive is to maximize the return for just this fishing season. Again, it is not necessary to add conservation to efficiency, as efficiency is almost by definition conservation oriented.

Returning finally to Smith's life cycle hypothesis, some fisheries may in fact need to move from being predominantly commercial to exclusively recreational. This transition, however, should take place because it makes economic sense, not out of desperation to save or conserve a fish stock decimated by a commercial fishery out of control.

Summary

Maximizing the economic returns to the nation's fisheries was the promise of OY. This promise has not been fulfilled, but only because in most fisheries in the United States OY has never been

implemented. At best, it has been interpreted to mean simply: "economics matter". However, the economics which have tended to "matter" are the incomes of commercial fishermen, which are the driving force of the original open access problem. If economics matter in this way, it only makes the problem of conserving resources worse. OY has not failed; it has almost never been tried.

In conclusion the villain, if there is one in the case of fisheries, is not the fishing community. In fact, the solution is for fishery managers to adopt the superior strategy of fishermen and that is to generate the highest valued product at the least cost. Instead of setting itself against the fishermen, fishery managers must become business partners. As in every landlord/tenant relationship, the contracting problems are numerous and not easily overcome, but at least both parties have the same ultimate goal (Murrell 1983). In the current situation, the parties are by definition antagonists and this is to the detriment of fishermen, fishery managers and often the fish.

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Table 1. Texas commercial regulations for red drum.

Year	Nets	License	Trotlines	Harvest Limits Minimum	Harvest Limits Maximum	Monthly Dealer's Report
1960-70	549 m or less 3.8 cm knots		396 m 1970 was the first year for a trotline tag	35.6 cm	88.9 cm	Required
1973-74	same		banned plastic baits	same	same	same
1977-78	banned on weekends		banned on weekends	same	same	same and a sales ticket required for each individual transaction
		Red drum commercial license required				
		Red drum fishermen must get 50% of annual income from fishing and have no other fulltime occupation.				
				Harvest limits-daily quota of 90.7 kg		
				Yearly harvest limits—quota of 635-726 thousand kg		
		50% income test applied to all commercial fishermen				
1979-80	same		same	same	same	same
				Landings bycatch of red drum by shrimp fishermen is precluded		
	Banned monofilament net; banned gill and trammel nets in the Gulf of Mexico					
1981	Prohibition of sale of red drum					End of IST program program

Table 2. Amount of illegal nets and trotlines confiscated in coastal waters of Texas during each fiscal year (1 Sep-31 Aug) from 1975 through 1986 (from unpublished data, Texas Parks and Wildlife Department).

Fiscal Year	Kilometers of Nets	Kilometers of Trotlines
1975	59.4	100.6
1976	72.4	45.5
1977	97.8	150.5
1978	99.1	99.6
1979	166.7	96.7
1980	157.4	101.7
1981	234.0	86.7
1982	175.1	56.8
1983	187.2	76.6
1984	117.0	36.2
1985	103.8	39.3
1986	90.4	35.1

Table 3. Annual weight (kg) and real price* ($/kg) paid to commercial fishermen for red drum landed in Texas in each calendar year from 1971 through 1981.

Year	($/kg)	Landings
1971	0.51	678,249
1972	0.51	665,809
1973	0.55	760,904
1974	0.51	871,572
1975	0.53	961,832
1976	0.60	920,523
1977	0.71	431,296
1978	0.82	390,596
1979	0.95	313,019
1980	0.97	505,513
1981	1.10	278,221

*Prices deflated by the implicit price deflator (from Survey of Current Business)

Table 4. Weight of red drum landed annually in Texas by commercial and recreational fishermen and relative abundance of red drum in Texas bays as indicated by catches in fishery independent gill nets and bag seines (ref. from Crowe 1986).

Year	Commercial Landings	Recreational Harvest Pounds	Fall Gill Nets No./h	Spring Gill Nets No./h	Bag Seines No./h
1970	719,509	ND	ND	ND	ND
1971	678,249	ND	ND	ND	ND
1972	665,809	ND	ND	ND	ND
1973	760,904	ND	ND	ND	ND
1974	871,572	ND	ND	ND	ND
1975	961,832	ND	0.9	ND	ND
1976	920,523	314,345	0.9	0.7	ND
1977	431,296	187,790	0.6	0.3	ND
1978	390,596	196,862	0.6	0.3	7
1979	313,019	170,554	0.9	0.3	14
1980	505,513	141,523	0.7	0.8	23
1981	278,221	229,522	0.6	0.4	26
1982		249,480	0.5	0.6	24
1983		298,469	0.5	0.7	21
1984		349,272	0.6	0.5	6
1985		207,749	0.9	0.4	9
1986		311,170			

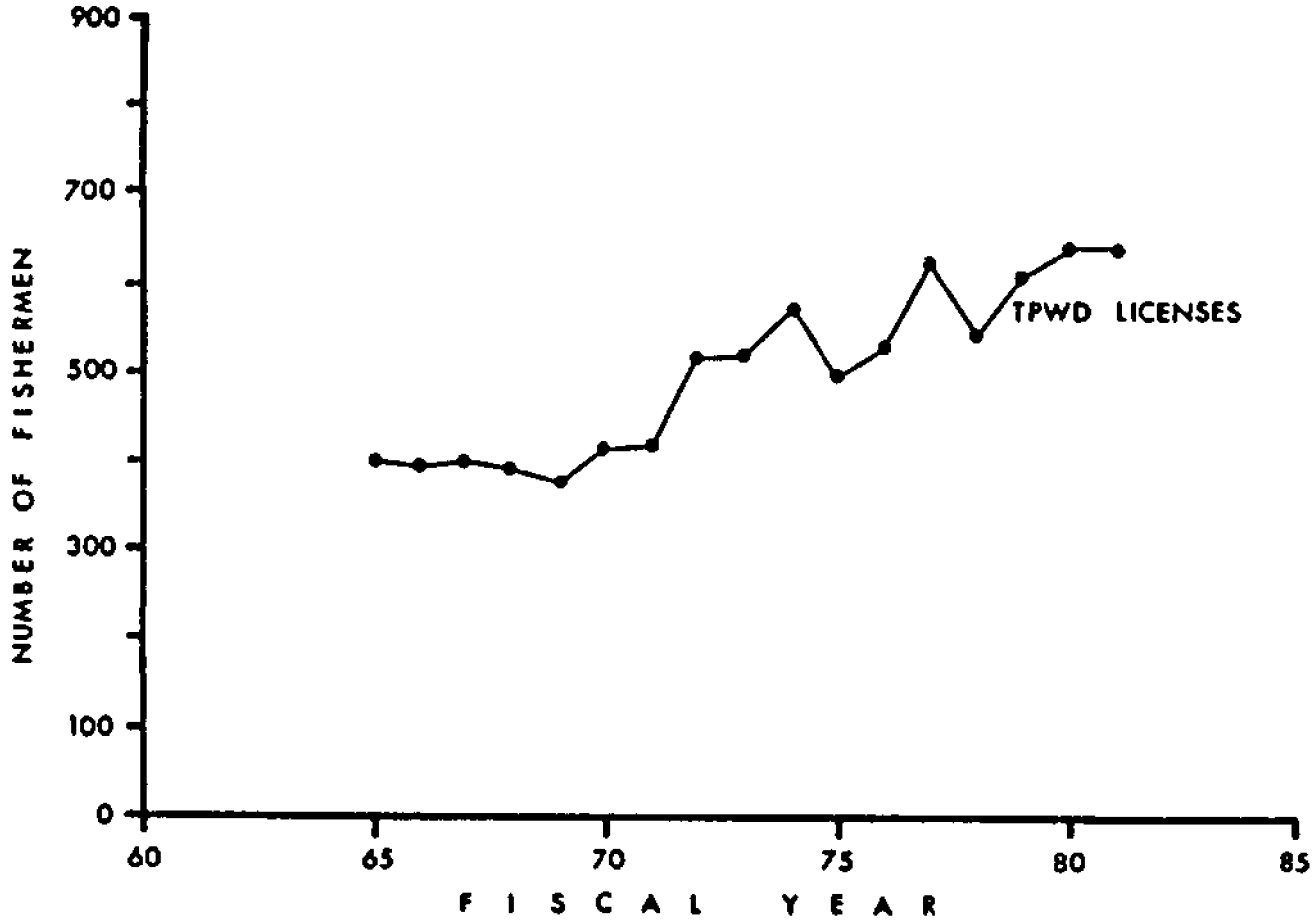

Figure 1. Estimated number of commercial red drum fishermen in each fiscal year during the period 1970-1981 (from Matlock 1984).

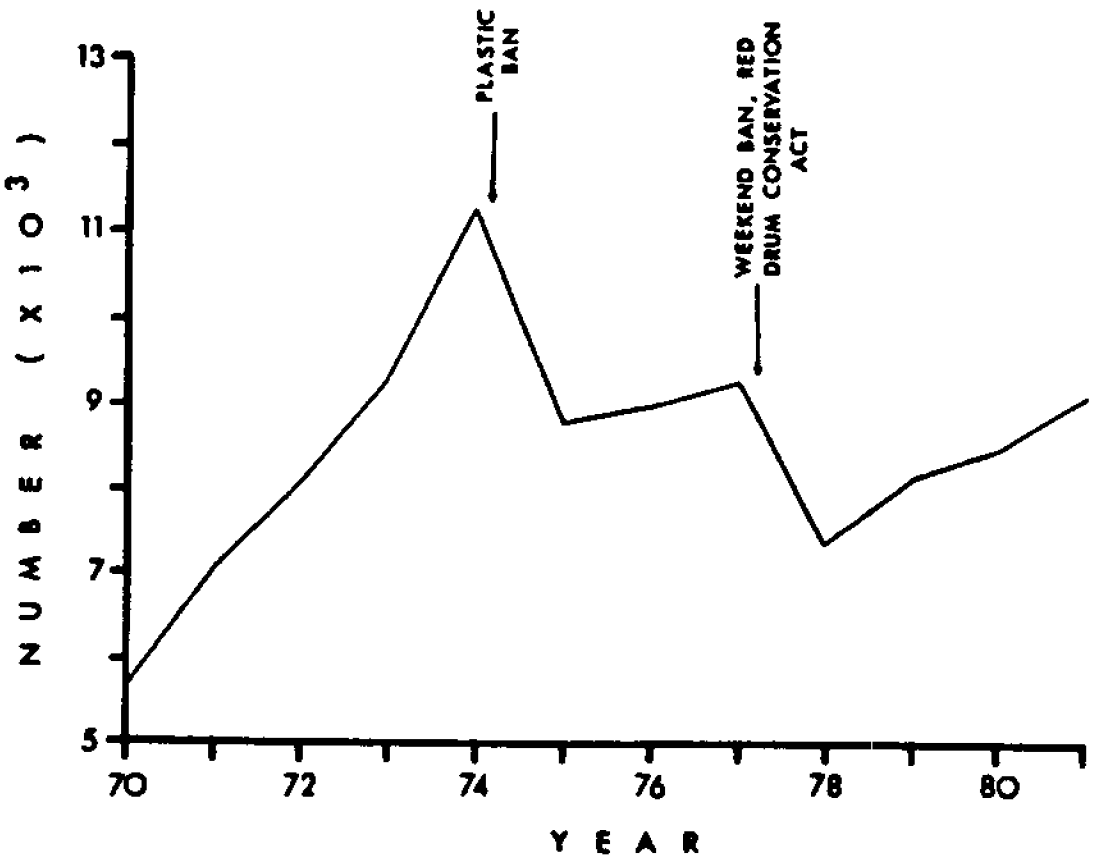

Figure 2. Number of saltwater trotlines licensed in each fiscal year, 1970-1981, based on TPWD tag sales. Arrows indicate effective dates of three major regulations affecting trotline fishermen (from Matlock 1984).

NEEDS WITHIN THE COMMERCIAL SEAFOOD INDUSTRY

by
Brian E. Perkins*
Seafood Technologist
Alabama Sea Grant Extension Service

ABSTRACT

The Southeastern commercial seafood industry is composed of two major sectors, harvesting and processing. Both work toward a common objective, the production of high quality protein foods for the consuming public. However, each has differing needs. The needs of commercial fishermen are as diverse as the fishing methods they employ. This diversity has yielded a commercial harvesting sector which has traditionally been difficult to reach or hear from as a group. The seafood processing industry is better organized because processors are fewer in number, and most are members of seafood commodity organizations. This promotes a greater degree of two-way communication, but it has not lessened the number or severity of problems which confront processors. This paper will present a brief overview of current problems and needs facing the commercial seafood industry.

INTRODUCTION

The contents of this paper are based on conversations with numerous and varied commercial seafood interests, related business interests, and regulatory personnel who interact with the seafood industry. Current seafood industry needs may be divided among two basic groups:

-Fisheries Management
-Regulation and Enforcement

A certain portion of the industry's needs result from existing regulations which are not adequately enforced. Others result from the absence of regulations or programs which the industry feels would be beneficial. A third group of problems have been created by management acts or regulations which many within the seafood industry feel may have been enacted without sufficient scientific basis or industry input.

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*3940 Government Boulevard, Suite 5
Mobile, AL 36609
205/661-5004

The opinions presented in this paper are those of private individuals, and do not represent the opinions of the author, the Alabama Sea Grant Extension Service, the Alabama Cooperative Extension Service, or the Mississippi-Alabama Sea Grant Consortium.

FISHERIES MANAGEMENT

Red Drum

Perhaps no single management issue has generated more public interest and controversy than the "redfish" plan. A bit of history is in order at this point. Prior to the development and widespread acceptance of Chef Paul Prudhomme's famous "Blackened Redfish" recipe, "redfish" were difficult to market commercially. Large red drum (18-30 pounds) brought only about $1 per individual fish. However, an upsurge in market demand for "redfish" elevated the price to approxiamtely $1 per pound, and a directed fishery quickly evolved. Commercial landings of red drum rose from 2.1 million pounds in 1981 to 6.3 million pounds in 1985.

At that point, numerous conservation and sportfishing groups called for the severe curtailment or discontinuation of commercial redfish harvesting, claiming that spawning stock was being removed from the population. The Secretary of Commerce implemented emergency regulations for management of the directed net fishery for red drum in federal waters on June 25, 1986. The purpose of this action was to prevent the unrestricted harvest of the resource while a secretarial fishery management plan was developed. The emergency rule established a quota of 1 million pounds for the red drum directed net fishery for the 90 day duration of rule. The 1 million pound quota was met, and the directed net fishery closed on July 18, 1986. Only incidental (less than 5%) commercial landings heve beeen allowed since. A "zero quota" was set for 1987.

During the last 90-day duration of rule, the National Marine Fisheries Service sponsored numerous stock assessment studies, and these scientific studies will continue during 1987. Members of the seafood industry who were previously engaged in commercial redfish harvest, processing, and marketing feel that little or none of the information generated by the comprehensive redfish research program is reflected in the current Secretarial Plan. The commercial sector is furthermore concerned that the Plan has no provision for in-season adjustment of harvest levels. The commercial seafood industry, therefore, would like to see NMFS-funded research results considered in the Secretarial Plan, and request that in-season adjustment be allowed.

Trawl Efficiency Devices (TEDs)

The Trawl Efficiency Device or Turtle Excluder Device (TED) represents another current controversey. The National Marine Fisheries Service defines a TED as a device which will allow 97% of the turtles encountered by a shrimp net to escape. A TED must be sized so as to exclude turtles from 6-32 inches wide. Four TED designs have been tested and approved by NMFS. Any additional designs will have to be tested before NMFS will approve them.

Regulations requiring the use of TEDs came about as a result of wildlife conservation groups and the U.S. Fish & Wildlife Service asking the Secretary of Commerce to enforce the Endangered Species Act, under which it is a federal offense for anyone to harm, harrass, or kill sea turtles. The Secretary of Commerce developed the proposed regulations through a mediation process involving individuals from conservation groups and the shrimping industry. The regulations require the use of TEDs in all shrimp nets over 30 feet, and stipulate seasons and geographic areas in which TEDs must be used.

The commercial shrimping industry has taken issue with certain aspects of the proposed TED regulations. Commercial shrimpers claim they will suffer economically due to loss of shrimp catch. They disagree with the exclusion of nets under 30 feet, charging that this favors recreational shrimpers. The commercial shrimping industry further feels that it has been asked to bear too much of the burden for protecting turtles. Shrimpers indicate that habitat destruction due to beach and shoreside construction has played a significant role in the reduction of turtle populations. They likewise state that poaching of turtle eggs from even protected nesting sites continues to hamper efforts to reestablish turtle populations.

The commercial shrimping industry feels that more effective enforcement of beach and shoreside development management guidelines is in order. Shrimpers also feel that nesting sites should be more closely monitored to curtail poaching. Finally, shrimpers are of the opinion that neither the schedule for seasonal openings and closings nor the geographic areas in which TEDs will be required are entirely reasonable, and should be reevaluated.

Shrimpers are willing to do their part to conserve marine turtles. Many already limit their towing times to reduce the probability of mortality to any turtles which they might catch. The use of a proposed turtle conservation stamp, much like the federal duck stamp, is a popular idea among

shrimpers. They favor the use of funds generated by the turtle stamp for turtle hatchery and nesting beach programs.

King Mackerel

The current management plan for the Gulf migratory group of king mackerel sets both commercial and recreational limits for landings of this species. When the commercial limit is reached, all sales of king mackerel must cease. Commercial landings and sales statistics are collected by NMFS by totalling receipts from king mackerel dealers. There is no requirement for, and therefore no attempt toward ascertaining whether king mackerel purchased by fish dealers were caught by recreational or commercial fishermen. In many areas, there are more recreationally-caught king mackerel sold than are the commercially-caught variety. However, the recreationally-caught king mackerel count toward the commercial quota whenever they are sold.

Commercial fishermen feel this creates a potential for prematurely and unfairly closing bona fide, licensed commercial fishermen out of the king mackerel fishery. However, since NMFS already requires permits for commercial king mackerel fishing, a mechanism exists for differentiating between recreational and commercial landings.

Therefore, commercial king mackerel fishermen would like the regulations changed to require that all persons engaged in the sale of king mackerel be required to qualify for a permit, and furthermore be required to present that permit when offering king mackerel for sale.

REGULATION AND ENFORCEMENT

Marina Siting

The design, construction, and operation of coastal marinas and associated boating activities have the potential for undesirable environmental impacts to the marine and coastal ecosystems in which these activities occur. The potential for environmental impacts and their significance will not be the same for every marina. The three greatest adverse impacts in the estuarine ecosystem are the loss of surface area (by filling), the loss of shallow intertidal benthic habitat (by filling or dredging), and the degradation of water quality.

The ultimate environmental performance of a properly sited coastal marina depends on the marina design, construction,

and operation. Most coastal construction projects, including marinas, have a variety of impacts on the coastal environment. However, the degree of impact can be controlled, and the effects of the impact lessened.

A variety of federal, state, regional, and local regulations concerning coastal development has evolved over the years. These regulations are designed to protect the public interest and conserve coastal resources by reducing development impacts and providing an orderly approach to coastal development.

This is most important in areas adjacent to shellfish growing waters. Marinas in the vicinity of shellfish growing waters have the potential to increase sedimentation, turbidity, coliform bacteria, and toxic or harmful chemicals. All of these substances have adverse effects on shellfish.

Shellfish harvesters and processors would like to be assured that existing coastal environmental regulations are being enforced equitably and adequately. They feel that many times, shellfish harvesting grounds are closed simply due to high coliform bacteria counts within the shellfish areas themselves. However, they are unsure whether upstream or adjacent permit-holders are maintaining the proper degree of control over their permitted effluents.

The shellfish industry also feels that the involvement of numerous agencies in the permitting and enforcement process results in inefficiency. They would like to see a more streamlined permitting and monitoring program for coastal marinas.

Oyster Depuration

The depuration of oysters involves removing oysters from contaminated shellfish growing areas and either relaying them in other clean coastal waters, or placing them in land-based recirculating purification facilities. Depending on the level of coliform bacteria in the oysters, they will purge, or depurate themselves in 2-14 days. (Depuration has not been shown to be effective in purging oysters of heavy metals or chlorinated hydrocarbons.)

Depuration has been in use throughout most coastal areas for years. For example, it is an integral part of the Chesapeake oyster industry. More recently, Florida enacted regulations in 1984 to control clam depuration in the Indian River area. Louisiana also enacted depuration regulations in 1985 for its oyster industry. In both cases, depuration

was deemed necessary to remove those states' economically valuable shellfish resources from the vagaries of variable environmental factors.

The State of Alabama does not have any regulations concerning oyster depuration. The shellfish industry is interested in oyster depuration, but cannot legally depurate without regulations. The need for land-based depuration facilities in Alabama has become increasingly evident during the past two years. During that period, both natural and man-made disasters in other areas have at times left Alabama as one of the few remaining oyster producing states. Therefore, depuration would provide one means of maximizing the wise use of Alabama's oyster resource, while helping to assure its wholesomeness.

Unpermitted Processing

The economic rewards which present themselves when natural resources become scarce may not always be obtained ethically or legally. Such was the case recently when Alabama oystermen found themselves tonging one of the last oyster grounds left open in the Gulf and South Atlantic. Some would harvest during the day and shuck the oysters at their homes at night. This type of processing is illegal, unsafe, and unethical. However, the chance to sell shucked oysters for $42 a gallon versus $15 a sack for shell stock oysters proved too attractive.

Legitimate oyster processors and health authorities are both alarmed by this situation. The potential for outbreaks of foodborne illness and damaged reputation are too great. However, health authorities are unable to cope with this situation. The existing regulations do not allow health authorities to inspect any unpermitted oyster processing facility, even if they know such illegal processing is taking place.

The oyster processing industry and health authorities would like to have the current regulation adjusted to allow for emergency inspections of facilities in which it is suspected that illegal , unpermitted oyster processing is taking place. Although there may be a potential for violation of individual rights, the benefits may outweigh this negative aspect.

Inspection of Imports

The recent upsurge in domestic seafood consumption has created a demand which U.S. fishermen are unable to meet by themselves. Seafood imported from foreign countries has

filled the void. In certain fisheries, such as shrimp, imports comprise the majority of seafood consumed in this country. It is not the case that imports are replacing domestic seafoods per se, but that import tonnage is being added to domestic production. This vastly increased volume has created several problems for the domestic seafood industry as well as the consumer.

Some abuses have resulted which, although unsophisticated, are nonetheless quite effective. In some instances, cases containing 10-2 kilogram boxes of seafood are remarked to indicate that the case contains 10-5 pound boxes of seafood. Another ploy involves remarking seafood produced in foreign countries as "Product of USA".

Other forms of deception may generally be defined as product substitution. Some deception may result from the many local names by which seafoods are known throughout various regions of this country. Several distinctly different species of fish may be known by the same name, and can be easily substituted for one another. Other cases, such as substitution of low-priced Asian yellow snapper for Gulf red snapper border on outright fraud.

The quality of some imported products also poses a serious problem. Some quality problems result from conditions under which foreign seafoods may have been produced. Other problems may have arisen due to transportation and storage under less than optimum conditions.

The domestic seafood industry and many consumers feel that the government has been unprepared and too understaffed to properly sample and inspect the greatly increased amounts of seafood which are now being imported. They would like to see an increased effort made to assure that imported seafood is what it is supposed to be, and that it is of the appropriate quality. Otherwise, the domestic seafood industry may be placed at a competitive disadvantage.

Brian E. Perkins

Brian Perkins was born May 3, 1952 in Baltimore, MD. He attended elementary and high schools in Atlanta, GA. He received the Bachelor of Science degree in biology from Georgia State University in 1975, and the Master of Science degree in food science from Louisiana State University in 1977. He was employed by the University of Georgia Marine Extension Service from 1977 through 1985 as Marine Resources Specialist II, Interim Resident Director and Acting Marine Advisory Program Leader, and Area Coordinator. He is currently employed as Seafood Technologist with the Alabama Sea Grant Extension Service in Mobile. He has 26 publications relating to seafood technology. Mr. Perkins is a Professional Member of the Institute of Food Technologists and an Executive Committee Member of the Tropical and Subtropical Fisheries Technological Society.

LACEY ACT AMENDMENTS OF 1981

Fred C. Whitrock
Sea Grant Legal Program
170 Law Center, LSU
Baton Rouge, Louisiana 70803

ABSTRACT

The late 1800's saw an increasing amount of trade in birds and animals killed in western states for sale in eastern markets. As this trade increased the western states saw a need to protect their resources and many enacted export prohibitions. Unfortunately, these laws were of little effect until passage of the federal Lacey Act of 1900. The Lacey Act made it a federal offense to transport birds and animals from states in which they were illegally taken. The Lacey Act was so effective that in 1926 the Black Bass Act was enacted to do the same for black bass. Both laws were effective and over time were amended to increase coverage over other birds, animals, and fish.

The late 1970's saw a similar situation as was the case in the late 1800's. Both the Lacey Act and the Black Bass Act had lost their effectiveness as the profits from the illegal sales skyrocketed. In 1981 the two Acts were combined into the 1981 Lacey Act Amendments. The Amendments increased the penalties, increased the coverage over other birds, animals, and fish, increased the coverage over other activities, and decreased the culpability required for a violation. This article discusses the history of both the Lacey Act and the Black Bass Act and describes the provisions of the 1981 Lacey Act Amendments.

LACEY ACT AMENDMENTS OF 1981

The 1870's saw the development of cold storage as well as the westward expansion of the railroads, allowing for the first time, large eastern cities access to birds and animals found in the western parts of the country. Such was the small and limited amount of this trade that a very few states prior to 1890 saw a need to enact laws prohibiting or restricting the export of game beyond their borders.[1]

Even if the states were concerned by the increasing trade, state imposed export restrictions and prohibitions were of questionable constitutionality. In 1896, though, the United States Supreme Court, in Geer v. Connecticut,[2] considered the issue of state export prohibitions. The Court held that game found within a state belonged to the people of that state. Thus, state export restrictions and prohibitions were valid exercises of state governmental power. Within four years of this boost from the Supreme Court forty-one states enacted export prohibitions.[3]

Unfortunately, even with the Supreme Court's blessing, export prohibition laws had little effect. Increasing quantities of birds and animals were shipped in spite of the prohibitions. Shipments were secreted out of the western states to the major markets of Chicago and St. Louis. Neither Illinois nor Missouri restricted the sale or transportation of birds and animals, even if illegally taken in other states. This made it nearly impossible for the states of origin to acquire jurisdiction and penalize the responsible parties.[4]

Finally, in 1900, U.S. Representative John F. Lacey of Iowa introduced legislation to, among other things, prohibit the interstate commerce of birds and animals shipped in violation of state laws. The bill also required proper marking of packages of birds and animals.[5] The purpose of this bill, named the Lacey Act, was:

> ...intended to supplement State laws and to settle the vexed question as to jurisdiction over imported game. In effect it was intended to form a Federal capstone resting on uneven foundation of State legislation cemented as far as possible into one solid structure.[6]

The Lacey Act was intended to strengthen and supplement state wildlife conservation laws, and to allow the Department of Agriculture to aid states in the restoration and preservation of game birds in areas where they were scarce or extinct. A further purpose was to regulate the introduction of birds and animals into areas where they had not existed in the past.[7]

The Lacey Act, originally introduced as three separate bills,[8] contained four major sections. Section one required a permit to import any foreign wild animal or bird into the United States and prohibited, under any circumstances, the importation of certain undesirable species. Section two prohibited the delivery of certain birds and animals to any common carrier and prohibited any common carrier from transporting such birds and animals across state or territorial boundaries if either the

birds or the animals were prohibited foreign species or if they were killed in violation of the laws of the state, territory, or district where killed. Section three set certain marking requirements for transporting packages containing dead birds or animals in interstate commerce. Section four provided that any birds or animals imported to a state, territory, or district were subject to the laws of that state or territory as if they were killed there.

The effect of the Lacey Act was immediate and dramatic. By 1905 illegal traffic in birds and animals had nearly disappeared. As described by the United States Department of Agriculture:

> A single consignment of game from Nebraska received at Chicago in 1900 continued no less than 87 barrels of prairie chickens and a rough estimate of the number of these birds killed in Nebraska that year placed it at about 5 million, of which 1 million were killed for local consumption and 4 million for shipment beyond the state...
> ...conditions in 1905 presented a marked contrast to those prevailing in 1900. Prairie chickens had almost entirely disappeared from the markets of Chicago; venison, quail, and grouse were received in greatly diminished quantities, and even ducks, which formerly were shipped from Illinois, Missouri, Arkansas, and Texas by thousands, were offered for sale in comparatively small numbers.[9]

All violations of the Lacey Act carried criminal penalties. The penalties were limited to fines of no more than $200 for the shipper, consignee, and the carrier. Knowledge that the birds or animals were taken in violation of the Lacey Act was required to convict the consignee or common carrier.

Since the Lacey Act applied only to birds and animals, similar restraints for other species required separate legislation. In fact, problems similar to those existing for wild birds and animals, for which the Lacey Act was enacted, also existed for two species of fish and in 1926 Congress enacted the Black Bass Act.[10] Patterned after the Lacey Act but more limited, the Black Bass Act did for small and large mouth black bass what the Lacey Act did for wild birds and animals.

The Black Bass Act was nearly identical to section three of the Lacey Act, providing that it was:

> ...unlawful for any person to deliver to any common carrier for transportation, or for any common carrier or for any person knowingly to transport...from any State...to or through any other State...to or through any foreign country, any larged-mouth black bass...or any small-mouth black bass... which has either been caught, sold, purchased, or possessed in violation of any law of the State...wherein the delivery... for transportation is made or the transaction or the carrying thereof begins.

The maximum $200 fine for each violation of the Black Bass Act was the same as the Lacey Act. In addition, the Black Bass Act allowed imprisonment for up to three months.

The first amendment to either the Lacey Act or the Black Bass Act occurred in 1930. The Black Bass Act was amended to rectify several weaknesses. As stated in the Senate Report accompanying the amendments:

> The original [Black Bass Act] to regulate the interstate transportation of black bass...has utterly failed to meet that need. The Act was not broad enough to make enforcement practicable and the machinery of such enforcement was entirely lacking. So far as is known not a single prosecution has been had, or even attempted, under the law since its enactment.[11]

Several deficiencies existed in the original Black Bass Act that made enforcement nearly impossible. The first was the wording that required proof that the fish was illegally taken, sold, purchased, or possessed in the original state. This required that each shipment of fish had to be traced back to the state where the fish was originally taken, sold, purchased, or possessed. A second problem was that it was only illegal to deliver to a carrier or to knowingly carry illegal fish. It was not illegal to knowingly purchase or receive the fish transported in violation of the Black Bass Act. Thus, once delivered, enforcement opportunities were lost.

Two other problems with the Black Bass Act were the result of originally copying only select provisions of the Lacey Act. One was failure to add a marking provision and the other was lack of a provision stating that all black bass transported in interstate commerce were subject to the laws of the state to which the bass were delivered, just as if the bass were taken in that state. Both of these provisions were in the original Lacey Act.[12]

To rectify these problems the Black Bass Act was amended in 1930 by addition of the following provisions:[13]

1) It was made illegal to deliver, knowingly receive for transportation, or to transport in interstate commerce black bass from a state that prohibited this export.
2) A marking requirement, similar to the Lacey Act, requiring the name and address of the shipper and consignee and the words "Black bass" along with the quantity on all packages.
3) A provision making it a federal offense to knowingly purchase or receive any black bass transported in violation of the Black Bass Act.
4) A provision making it a federal offense to make a false record of the contents of any black bass shipment.
5) A provision similar to one in the Lacey Act, making all black bass transported into a state subject to the state laws as if the bass were taken in that state.
6) A provision allowing confiscation of illegal shipments of black bass.

The Black Bass Act was amended again in 1947 to expand its coverage to include all game fish. The amended act defined gamefish as "black bass and such other fish as are defined as game fish by the laws of the state, territory, or the District of Columbia, in which the fish has been either caught, killed, taken, sold, purchased, or possessed, or from which it was transported." The Act specifically excluded steelhead trout taken in the Columbia River. The amendments also transferred regulatory authority from the Department of Commerce to the Department of Interior.[14]

The Black Bass Act, as amended, was extremely effective in curtailing illegal shipments of game fish. By 1952, however, problems with illegal shipments of commercial fish surfaced. These problems were strikingly similar to those affecting game fish, birds, and animals which prompted the enactment of the Black Bass and Lacey Acts and brought a realization of the need for further amendments. Testimony before the U.S. House of Representatives Committee on Merchant Marine and Fisheries provided the following:

> ...with the great expansion of the trucking industry within recent years large quantities or otherwise illegal commercial fish have been transported in interstate commerce to the great detriment of this important natural resource as well as the commercial fishing industry generally. Effective local enforcement is almost impossible in view of the relative ease with which truckers of illegal fish can load up in out-of-the-way places or at night, disappear over the highways, and be hundreds of miles away and safely beyond State-police jurisdiction before discovery of illegal shipment. The regulatory provisions and penalties provided by the Black Bass Act should prove to be most effective deterrents to the illegal practices mentioned above.[15]

Thus, in 1952, the Black Bass Act was amended to include commercial fish.[16]

The Lacey Act was amended several times, but very few amendments were substantive. In 1939 and 1948, as a result of recodifications of the criminal law, several provisions were severed from the Act and moved to other sections of the statutes.[17] The major substantive amendments were increases in the penalties and expansion of coverage of the Act. In 1935, the penalty was increased from a maximum of $200 for each violation to $1,000 per violation or up to six months in jail, or both.[18] In 1969 a civil penalty was added at a maximum of $5,000 per violation and the criminal penalty increased to a maximum of $10,000 for each violation or up to one year in jail, or both.[19]

In 1935 the Lacey Act was amended to extend coverage to wild animals, birds, and parts or eggs thereof. That same amendment also added violations of federal and foreign laws as underlying laws which could result in a Lacey Act violation.[20]

A. 1981 AMENDMENT

By 1980 illegal commerce in fish and wildlife trade had again increased. Estimates set the illegal trade in wildlife at between $50 million and $100 million per year. Illegal trade in fish showed a similar increase. The number of illegal fish taken in the Great Lakes alone was estimated in the hundreds of tons.[21]

With the increased profit in the trade of illegal fish and wildlife, the penalty provisions in the Lacey Act and Black Bass Act did not provide an effective deterrent. The civil fine for violation of the Lacey Act was $5,000 for each violation, and the criminal fine was $10,000 for each violation. Neither was considered steep enough. The penalty for the Black Bass Act had remained at $200 per violation since 1926.

While the penalties for violation of the Lacey Act were not unreasonable, the high culpability requirements made prosecution under the Lacey Act nearly impossible. The Act required actual knowledge that the Lacey Act was violated as well as actual knowledge that the underlying law was violated.

The culpability standards of the Black Bass Act were substantially lower than the Lacey Act, but the maximum fine of $200 compared to the very high profits was not considered a deterrent.[22]

The 1981 Amendments combined the Lacey Act and Black Bass Act provisions into one. The Amendments substantially raised the penalty provisions, increasing the maximum civil fine to $10,000 for each violation and the criminal fine to $20,000 per violation and imprisonment for up to five years. The Amendments also decreased the culpability standards, primarily by eliminating the requirement that the defendant knew that he was violating the Lacey Act. The only requirements under the Amendments are that the defendant know or "... in the exercise of due care... should have known..." that the underlying law was violated. This not only facilitated enforcement of the Lacey Act violations but also brought the Act more in line with other conservation laws.[23]

The 1981 Amendments expanded coverage of the Lacey Act by including certain species or products which were previously not included or which were specifically excluded. The Lacey Act also limited jurisdiction to the state where the fish was taken.

The Lacey Act, regulating birds and wildlife, was restricted to vertebrates.[24] The Amendments expanded coverage to specifically include invertebrates. The Amendments also expansively defined that coverage to include parts, products, eggs, and offspring.

The Lacey Act had also carved out a specific exception for migratory game birds under the belief that they were adequately protected under the Migratory Game Bird Act. Likewise, the Black Bass Act excepted steelhead trout in the Columbia River.[25] Both exceptions were deleted by the Amendments.

B. PROVISIONS OF THE 1981 AMENDMENTS

The definition of fish and wildlife was expanded over the years in both the Lacey Act and the Black Bass Act. It was further expanded in the 1981 Amendments, and now includes virtually every possible fish or animal. The coverage applies whether the fish or wildlife is alive or dead, whether wild or bred in captivity, and to "any part, product, egg, offspring."[26]

The exception of certain species have been eliminated. The only exceptions in the 1981 Amendments are limited to certain activities covered by a fishing management plan under the Fishery Conservation and Management Act and for certain activities regulated by the Tuna Convention Act and Atlantic Tuna Convention Act.[27]

The 1981 Amendments are, in effect, an expanded version of section two of the original Lacey Act. The Amendments state:

> Prohibited acts
>
> (a) Offenses Other Than Marking Offenses. - It is unlawful for any person -
>
> (1) to import, export, transport, sell, receive, acquire, or purchase any fish or wildlife or plant taken or possessed in violation of any law, treaty, or regulation of the United States or in violation of any Indian tribal law;
>
> (2) to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce -
>
> (A) any fish or wildlife taken, possessed, transported, or sold in violation of any law or regulation of any State or in violation of any foreign law, or
>
> (B) any plant taken, possessed, transported, or sold in violation of any law or regulation of any State;
>
> (3) within the special maritime and territorial jurisdiction of the United States (as defined in section 7 of title 18, United States Code) -
>
> (A) to possess any fish or wildlife taken, possessed, transported, or sold in violation of any law or regulation of any State or in violation of any foreign law or Indian tribal law, or
>
> (B) to possess any plant taken, possessed, transported, or sold in violation of any law or regulation of any State;
>
> (4) having imported, exported, transported, sold, purchased, or received any fish or wildlife or plant imported from any foreign country or transported in interstate or foreign commerce to make or submit any false record, account, label, or identification thereof; or
>
> (5) to attempt to commit any act described in paragraphs (1) through (4).
>
> (b) Marking Offenses. - It is unlawful for any person to import, export, or transport in interstate commerce any container or package containing any fish or wildlife unless the container or package has previously been plainly marked, labeled, or tagged in accordance with the regulations issued pursuant to

paragraph (2) of subsection 7(a) of this Act.[28]

The Amendments set out four basic offenses (not including plants), with three being a variation of one offense. Except for the marking offense, all involve a two-step process. The first step is the violation of an "underlying law" and the second step is some "activity."

The first two offenses can be distinguished primarily on whether the underlying law is a federal or Indian tribal law or whether it is a state or foreign law. The second step, the "activity" required to complete the 1981 Amendments violation, is almost identical for both. The third offense has been described as a "catch-all" provision. It is dissimilar to the other two provisions in some respects but is a combination of them in other respects. The fourth offense concerns marking requirements.

1. Underlying Law

The first three offenses require violation of an underlying law. The first one requires that the fish or wildlife must be "taken or possessed" in violation of a federal law or regulation or an Indian tribal law.[29]

Similarly, for the second offense, if the underlying law is a state law or regulation or a foreign law then the violation can be that the fish or wildlife was taken or possessed in violation of that law or regulation. In addition to being taken or possessed, fish or wildlife "transported or sold" in violation of that state or foreign law or state regulation satisfies the first step of a Lacey Act violation.[30]

The third offense, or the "catch all" provision, is limited to offenses occurring in the special maritime and territorial jurisdiction of the United States. The underlying law can be a state law or regulation, foreign law, or an Indian tribal law and, like the second offense, covers fish or wildlife "...taken, possessed, transported, or sold..." in violation of that law or regulation.[31]

The Amendments specifically state that the special maritime and territorial jurisdiction of the United States is that area defined in section 7 of title 18 of the United States Code. The House Report states that the areas within the special maritime and territorial jurisdiction which would most likely apply to the Amendments:

> include the high seas and any other waters within the admiralty and maritime jurisdiction of the United States and not of the jurisdiction of any particular State, and any vessel licensed or enrolled under the laws of the United States, and being on a voyage upon the waters of any of the Great Lakes or any of the waters connecting the Great Lakes, or upon the St. Lawrence River.[32]

2. Activity

Once the underlying law is violated, some "activity" must take place to complete a 1981 Amendments offense.

If the underlying law is a federal law or regulation or an Indian tribal law (the first offense) or if it is a state law or regulation or a foreign law (second offense) then the activity is that the fish or wildlife must be imported, exported, transported, sold, received, acquired, or purchased.[33] In addition, for the second offense, for which the underlying law is a state or foreign law, the activity must take place in interstate or foreign commerce.[34]

If the violation is within the special maritime and territorial jurisdiction of the United States (the third offense), then the fish or wildlife need only be possessed.[35]

The marking offense does not require the two step process discussed above. This provision requires that any packages or containers of fish or wildlife transported in interstate or foreign commerce must be "plainly marked, labeled, or tagged in accordance with the regulations issued [by the secretaries of Interior and Commerce]."[36]

C. EXTENT OF COVERAGE

The coverage of the 1981 Amendments is primarily achieved through the breadth of the definitions. The definitions tend to be all encompassing.

As discussed above, the term "fish or wildlife" covers virtually every fish, animal, or bird. It includes fish, animals, and birds alive or dead, any parts, products, eggs, or offspring, commercial and recreational species, domestic or wild.[37]

The term "import" means the entry of any fish or wildlife, in any manner, into any area under the jurisdiction of the United States. It also specifically states that it is broader than the definition of the term as used under the customs laws.[38] The 1986 case of U.S. v. 3,210 Crusted Sides of Caiman Crocodilus Yacare tested the limits of the term "import." In this case certain crocodile skins taken in violation of the laws of Bolivia were being shipped by air from Bolivia to Paris, France. The airplane made an unscheduled stop in Miami, Florida where customs officials found the illegally taken skins. The issue was whether the crocodile skins on board an airplane making an unscheduled stop in the United States were imported within the meaning of the 1981 Amendments. The court, with almost no discussion, held that they were.[39]

The term "person" includes any "entity", in any form, subject to the jurisdiction of the United States[40]

"State" is defined as the fifty states, the District of Columbia, and any "territory, commonwealth, or possession of the United States."[41]

The word "taken" is defined to include any method of reducing fish or wildlife into possession.[42]

"Transport" is also broadly defined and applies to any type of movement. It includes delivery or receipt of any fish or wildlife for transport.[43]

Obviously, these terms are defined as broadly as possible, so as to be all inclusive. There are few loopholes based upon these definitions. The only terms which can be considered somewhat limiting are "law", "treaty", "regulations", and "Indian tribal law." These are defined as "... laws, treaties, regulations, or Indian tribal laws which regulate the taking, possession, importation, exportation, transportation, or sale of fish or wildlife..."[44]

While at first blush these appear to be as extensive as the other terms, the Committee made clear that they do not include laws, regulations, or treaties that are solely for raising revenues and which do not specifically relate to birds and wildlife.[45] The report also makes clear that general safety laws are not included.

The limitation of this definition results at least partially from the standard adopted in the 1979 case of United States v. Molt.[46] The issue in the case was whether two foreign laws were the type for which the Lacey Act could apply. The laws in question were two foreign customs laws. The first was a Fiji law that required an export duty on all goods leaving Fiji. It contained no direct reference to, but did apply to fish and wildlife. The second was a Paupa New Guinea law, similar to the Fiji law, that required governmental permission and payment of an export tax on certain named goods leaving Paupa New Guinea. The difference in the two laws was that the Paupa New Guinea law specifically applied to all "fauna" leaving the country.

The court held that the Lacey Act only applied to "laws and regulations designed and intended for the protection of wildlife." Using this standard the court found that the Fiji law was not intended to be used for the conservation of wildlife and therefore could not serve as the underlying law for a Lacey Act violation. On the other hand, the Paupa New Guinea law specifically applied to "fauna" and could be used in a Lacey Act action.

The Committee Report, in discussing the scope of the terms "laws, regulations, and treaties", specifically states that the standard in the Molt decision was too strict. While the report is vague concerning the extent of the terms, it does provide some guidance. The terms do not include laws relating solely to raising revenues and having no reference to fish or wildlife. Nor do the terms include strictly public safety laws, such as prohibiting firing a gun across a public road while hunting. On the other hand, laws included are those requiring licensing for fishing or hunting and federal wildlife quarantine laws.[47]

Footnotes

1. Palmer, Federal Game Protection - A Five years' Retrospect, 1905 Yearbook of the U.S. Department of Agriculture, pg. 541.
2. 161 U.S. 519 (1896).
3. Palmer, supra note 1.
4. id.
5. Lacey Act, ch. 553, 31 STAT. 188 (1900).
6. Palmer, supra note 1.
7. id.
8. id.
9. id.
10. Black Bass Act, ch. 346, 44 STAT. 576 (1926).
11. H.R. REP. No. 1610, 71st Cong., 2d Sess. (1930).
12. id.
13. Act of July 2, 1930, ch. 801, 46 STAT. 845.
14. Act of July 30, 1947, ch. 348, 61 STAT. 517.
15. H.R. REP. NO. 2148, 82nd Cong., 2d Sess. (1952).
16. Act of July 16, 1952, ch. 911, 66 STAT. 736.
17. Reorganization Plan No. II, $4(f) F.R. 2731, 53 STAT. 1433 (1939); Act of June 25, 1948, c. 645, 62 STAT. 687.
18. Act of June 25, 1935, ch. 261, Title II, $$ 2101, 2101, 49 STAT. 380.
19. Act. of Dec. 5, 1969, Pub. L. No. 91-130, $7(a), 83 STAT. 279.
20. Act of June 25, 1935, supra note 18.
21. Bean, The Evolution of National Wildlife Law (1983).
22. H.R. REP. NO. 97-276, 97th Cong., 1st Sess. (1981) reprinted in 81 CODE CONG. & ADM. NEWS 1748.
23. id.
24. Bean, supra note 21.
25. H.R. REP. no. 97-276, supra note 22.
26. 16. U.S.C. §3371 (a) (1982).
27. 16 U.S.C. §3377 (1982).
28. Lacey Act Amendments of 1981, Pub. L. No. 97-79, 95 STAT. 1079 (1981) (codified as amended at 16 U.S.C. §§3371-3378 (1982 & Supp. II 1985)).
29. 16 U.S.C. §3372(a)(1) (1982).
30. 16 U.S.C. §3372(a)(2) (1982).
31. 16 U.S.C §3372(a$0(3) (1982).
32. H.R. REP. No. 97-276, supra note 22.
33. 16 U.S.C. §3372(a)(1) (1982).
34. 16 U.S.C. §3372(a)(2)(A) (1982).
35. 16 U.S.C. §3372(a)(3) (1982).
36. 16 U.S.C. §3372(b) (1982).
37. 16 U.S.C. §3371(a) (1982).
38. 16 U.S.C. §3371(b) (1982).
39. U.S. v. 3,210 Crusted Sides of Caiman Crocodilus Yacare, 636 F. Supp. 1281 (S.D. Fla. 1986).
40. 16 U.S.C. §3371(e); U.S. v. Sohappy, 770 F.2d 816, 821 (9th Cir. 1985).
41. 16 U.S.C. §3371(h) (1982).

Footnotes (continued)

42. 16 U.S.C. §3371(i) (1982).
43. 16 U.S.C. §3371(j) (1982).
44. 16 U.S.C. §3371(d) (1982).
45. H.R. REP. No. 97-276, supra note 22.
46. 599 F.2d 1217 (3rd Cir. 1979).
47. H.R. REP. No. 97-276, supra note 22.

LACEY ACT ENFORCEMENT IN THE TEXAS GULF: A SOCIOLOGICAL ANALYSIS

Ben M. Crouch and T. Mark Miller
Department of Sociology
Texas A & M University

When the U.S. Congress amended the Lacey Act in 1981 to include crustaceans, it initiated a series of quite unexpected confrontations between federal enforcement agencies and the shrimpers based in Brownsville and Port Isabel, Texas. Essentially, the amended Lacey Act prohibited the introduction into the U.S. of any species (including shrimp) taken from a jurisdiction where the taking of that species was illegal.

This law uniquely applied to those shrimpers based in the Brownsville-Port Isabel (B-PI) ports just north of the Texas-Mexico boundary. These ports are home for approximately 400 shrimp vessels because the area is mid-way along the prime shrimping area of the Gulf of Mexico between Louisiana and Mexico. So situated, the Texas shrimpers could easily trawl in both Texas and Mexican waters, and they had done so for years. When Mexico declared its waters off-limits to U.S. shrimpers in 1980, the stage was set for a traditional practice to become a violation of federal law. Simple proximity to proscribed fishing grounds made the B-PI fleet especially vulnerable.

Our purpose of this paper is to examine sociologically the Lacey Act enforcement process and its impact on south Texas shrimpers. This analysis is part of an larger study of the Lacey Act which will eventually include in-depth interviews with a large sample of shrimpers the B-PI area. Here, however, we draw primarily on extensive interviews with key Lacey enforcement officials and representatives of the shrimp industry as well as on relevant documents, letters and memos.

We begin by developing a sociological framework to examine the Lacey Act conflict. Then, after a brief consideration of the laws which define the problem, we will turn to a detailed analysis of the enforcement process. Finally, we will explore shrimper reactions to Lacey Act enforcement and the impact of that enforcement on their perceptions and behavior.

A Sociological Perspective

Traditional sociological perspectives on deviance tend to focus almost exclusively on the behavior of the rule-breaker; the actions of rule enforcers are usually considered non-problematic, even unimportant. This traditional approach, however, is one-sided and overlooks the contribution to deviant patterns and outcomes of the enforcers themselves. (1) Thus, for many types of deviance, certainly

(1) see Schur, E.. Interpreting Deviance. NY: Harper and Row, 1979.

including Lacey Act violations, it is absolutely critical to examine the enforcement process to understand fully the factors which determine deviance patterns.

This perspective on deviance offers two fundamental ideas which guide the present analysis. The first idea is that the creation and enforcement of laws create deviance. We do not mean, of course, that it is the law which causes a person or group to violate a legal rule. Rather, it is only when an official rule or law emerges to define a problem and to direct control agents toward it that the behavior stands out as deviant or criminal.

There are many examples of what has been called the "invention of deviance". Prohibition is perhaps the most familiar. Passage of the Volstead Act suddenly proscribed the manufacture and consumption of spirits, making millions of Americans "deviants", subject to federal prosecution. Another illustration of how the creation and enforcement produces deviance is child abuse statutes. Prior to the passage, in 1962, of the first laws defining and proscribing abusive parental treatment of children, there were no "child abusers", despite the many parents known to the community as "mean parents". (2)

For deviance to be defined in law, and for that law to be vigorously enforced, there must be some sort of "trigger" (e.g. moral fervor, threat, organizational interest). In the case of prohibition, for example, the Women's Christian Temperance Union's desire to stamp out "demon rum" and its effects provided the trigger for the Volstead Act. Also relevant to the enforcement process is the construction of social images of the deviants themselves. Such images serve to focus control attention and simplify the enforcement process since the images define the deviant as deserving of the punishment the control agents have planned.

Obviously, enforcement efforts are seldom constant; control activities may vary for many reasons. Moral fervor may flag, enforcers may experience limitations on resources, agency missions may change, images of the deviance may become less demonic or deviants may even change.

The second idea relevant to our analysis is that enforcement outcomes are always uncertain. Enforcement actions seek ideally to control, then eliminate, the proscribed behavior. While the degree of deterrence actually achieved hinges on many factors, two of the most important are (a) the extent to which rule-breakers share with control agents a definition of the act as being wrong and (b) the extent to which the rule-breakers recognize the legitimacy of the control agents.

While these two conditions are related, they may vary independently. If a rule-breaker believes along with controllers that the act is wrong and recognizes as legitimate the controllers' authority, then compliance in the future is highly likely. This is deterrence. If the rule-breaker does not for whatever reason believe that the act is wrong, yet generally grants legitimacy to the enforcers' efforts to control him, then evasion is most likely. Being caught is a risk, and the penalty is simply the acknowledged price of rule-breaking behavior.

(2) Schur. Interpreting Deviance. p. 418.

Finally, if the rule-breaker neither shares with controllers the idea that the action is wrong nor recognizes the legitimacy of the controllers to curtail that action, then outcomes may be very different than controllers expect. One such outcome may be greatly enhanced violations both to defy controllers and to articulate a moral position. Alcohol consumption during prohibition and the rise of youthful drug use in the 1960' and '70's are obvious examples of this last rule-breaker response.

Enforcement may also create among deviants a solidarity which may not have existed before. The result may be collective action by "deviants" to redefine or justify publicly their actions through political or legal means.

The following analysis shows that the federal agencies and the shrimpers certainly did not share a definition of the wrongness of shrimping in Mexican waters, and this divergence in turn affected the extent to which shrimpers considered the enforcers' actions to be legitimate. Clearly, the result was an escalation of enforcement and deviance and a politicalization of the problem.

The Problem Defined by Law

For 50 years, U.S. shrimp captains have been dragging their nets through Mexican waters. Fishing was good, and there was little effort by the Mexicans either to harvest their own shrimp or to keep others from doing so. By the early 1970's, however, the Mexicans had significantly expanded their shrimp fleet and grown more concerned about protecting a national resource second in value only to oil in that country. (3) The most consequential move by the Mexicans was the 1976 amendment of Article 27 of the Mexican Constitution to lay claim to a 200 mile Exclusive Economic Zone (EEZ). That claim was accepted by the United States as an uncontested fact. Prior to this move, U.S. shrimpers fished outside Mexico's 12 mile territorial limit with impunity (and within that limit with relative impunity). Between 1976 and 1980, those shrimpers could continue going into Mexico's EEZ only by special permit. After December 31, 1979, Mexican waters were universally closed to U.S. shrimp vessels.

In 1976, the United States also claimed exclusive control of marine resources out to 200 miles; it became a Fishery Conservation Zone (FCZ). This action was the result of the Magnuson Fishery Conservation and Management Act which charged the NMFS with the task of managing and conserving the marine resources in the FCZ and the Coast Guard with enforcing the relevant regulations.

Among the most significant of these regulations are the Closure laws. From 1959 through 1980, the state of Texas enforced a state law prohibiting the taking of shrimp in state waters (out to 9 miles) from

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(3) This section draws heavily on Fisher, T. D., "U.S. Shrimp Industry: International Boundary Concerns in the Western Gulf of Mexico", 27th Session of the Executive Seminar in National and International Affairs, United States Department of State, 1984-85.

mid-May through about mid-July. The intent was to allow young shrimp to grow to a more profitable size during this period. In 1981, the U.S. extended the closure out to 200 as part of the management plan for the gulf fishery. The Coast Guard was thus charged with ensuring that no vessel took shrimp within that designated 60 day closure.

The final, and most important, law shaping the interaction between the south Texas shrimpers and the federal government is the Lacey Act. The original Lacey Act was passed in 1900 to prohibit the import into this country of game animals and song birds. The crucial 1981 amendment to the act was primarily a conservation statute focusing on endangered species, though it also mentions fish and crustaceans. That amendment makes it a federal offense to import, export, sell, receive, acquire, possess or purchase fish or wildlife in violation of foreign law. Moreover, such actions would be subject to either criminal or civil sanctions.

Patterns of Lacey Act Enforcement

The Enforcement Initiative

Lacey Act enforcement by law falls to two agencies, the U.S. Coast Guard and the National Marine Fisheries Service. The Coast Guard is a multi-mission agency charged with an array of tasks not unlike a police department. In addition to enforcing maritime laws, the Coast Guard also protects and serves. Indeed, its top priority is always the search and rescue operation. Drug law enforcement, however, has also been high priority through the 1970's given the tremendous amount of illegal drugs imported into this country via southeastern U.S. waterways. The relatively short water route from the Yucatan peninsula to Florida, for example, has always been attractive to drug smugglers. Consequently, the Coast Guard maintains a very active drug interdiction program in the eastern part of the Gulf of Mexico.

As part of the National Oceanic and Atmospheric Administration in the Department of Commerce, the NMFS is also a multi-mission agency. Through its biologists and other specialists, it seeks to manage and conserve marine resources. The agency also maintains an active enforcement division. Headquartered in St. Petersburg, Florida, the southeastern regional office of NMFS works with the Coast Guard to ensure that regulations are upheld in the Gulf of Mexico. Indeed, reliance on the Coast Guard is extensive since NMFS has no ships or planes of its own and has only one enforcement agent, based in Corpus Christi, to cover the entire Texas coast.

The enforcement actions of these agencies were not automatically set off by the passage of the Lacey Act amendment. Indeed, passage seems not to have suddenly unleased enforcement agents who were straining to control a widely recognized problem. In the first year during which the Lacey Act was enforced (1982), relatively few Lacey cases were made (see Appendix: Table 1). The important question then involves the circumstances or events which prompted the first serious enforcement efforts. That is, what was the "trigger" which

initiated aggressive Lacey enforcement? Two general answers to this question emerge from our research, and each involves a different enforcement organization.

The first reason for the initial thrust of Lacey Act enforcement, and clearly the "official" explanation, involves a shift in Coast Guard drug interdiction strategies. The Coast Guard had, by 1981, in some measure succeeded in making drug trafficking difficult in the waters south of Florida by employing a "choke point" strategy. By concentrating patrols on the most efficient and frequently used routes for smugglers, the Coast Guard had been able to make these routes dangerous for drug importers. One result of the agency's success was that the smugglers began turning to less hazardous routes in the western gulf. In response, the Coast Guard moved west also, stepping up its drug interdiction efforts off the Texas coast.

It was only then that officials began to notice Lacey violations and initiate enforcement efforts. Admiral Stewart, Commander of the 8th Coast Guard District in New Orleans stated in an August, 1983 memo:

> ...last Fall (of '82), after we began routine maritime narcotics interdiction patrols south of Padre Island, the extent to which U.S. shrimpers from the Brownsville area were routinely violating the Lacey Act became apparent. I responded accordingly. Extensive violation requires an extensive enforcement effort.(4)

Under Admiral Stewart, the Coast Guard was particularly sensitive to fisheries laws. One Coast Guard official stated that Stewart was "very personally committed to fisheries law enforcement...I don't think anybody had to twist his arm about the need for vigorous fisheries enforcement." (5) When Coast Guard drug interdiction flights over Mexican waters revealed extensive intrusion by U.S. vessels, the agency began to enforce the Lacey Act. It is interesting to note that, despite the presumed push towards the west by smugglers and the felt need to beef up interdiction efforts, actual maritime smuggling has been, by Coast Guard report, almost nil throughout the 1980's.

The other explanation for the escalation of Lacey enforcement lies with the NMFS. Like the Coast Guard, NMFS officials were also not initially interested in Lacey violations. The following statement by a NMFS enforcement official suggests, in fact, that the agency was more interested in compliance with the Texas-U.S. Closure regulations than with the Lacey Act in the early 1980's.

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(4) Memo from Coast Guard Admiral Stewart, 8th District, New Orleans to Mr. Ralph Rayburn, Executive Director of the Texas Shrimp Association, August 23, 1983.

(5) Interview with John Byrd, U.S. Coast Guard, 8th District, New Orleans, July 19, 1986.

> Back when we first implemented the Texas closure...we found that a number of fishermen, shrimpers, were going to Mexico to shrimp or at least claiming they were going to Mexico when we'd intercept them in U.S. waters during the time the federal waters were closed off to Texas. They said, 'Oh! we could shrimp in Mexico.' This created a substantial loophole, in you will, to effective enforcement of the Texas closure, and we took a look at how best to resolve that and the thing that came most quickly to mind was the Lacey Act because fishing in Mexico was illegal...So we first utilized the Lacey Act in the south Texas area in furtherance of a domestic enforcement of the closure regulations.(6)

Although the prevailing image is that enforcement agencies go about their business rather mechanically, responding to deviance in a cold, uniform manner, there are sometimes personal agendas which affect the timing and strength of control efforts. There is some evidence that the predilections of individuals in NMFS influenced to some degree that agency's response to Lacey violations.

First, the Texas NMFS agent between 1982 and 1984 was, in the words of one Brownsville shrimper, a "real hard-nosed cop". Another described him as "gung-ho" in his enforcement role. One of that agent's successors called him a "vigorous enforcer" and "abrasive". The personal style of the chief Texas NMFS agent helped to escalate enforcement and crystallize shrimper resentment.

Second, the director of the St. Petersburg office of NMFS may have had at least some personal motivation for pushing hard for compliance. It is understandable that many shrimpers, facing the sanctions from the NMFS, might assume that the director of the southeastern regional office "had it in for them", that he had a "vendetta" against them. Such personalizations of the federal nemesis by the shrimpers could easily be dismissed. There is some indication, however, that NMFS enforcement decisions were not completely detached, that they carried a special desire to see the Texas shrimpers brought to heel.

The following statements from an interview with a NMFS official suggests that a somewhat vindictive attitude on the part the agency's southeastern Regional Director was not entirely in the minds of the shrimpers.

> (The Director of NMFS southeastern Region) has been accused of trying to stiff the people (in Texas). He used to have very, very good ties with the fishermen down here and something happened to where he's been known to say that he will make those guys pay for it. I don't know if you want

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(6) Interview with Craig O'Connor, NOAA General Counsel, St. Petersburg, Florida, October, 1985.

> to call it selective enforcement or not. There's nothing I can document and it's one thing that has bothered me about the whole thing. (It) is a good bit of overkill at times.
>
> ...I don't understand why he came down hard on enforcement with them. It's something about how they were going south and he asked them to stop and they still didn't stop and he decided, "Well, I'll show those people." They didn't return a favor to him. "Stop going down there so I don't have to fade so much heat. When they wouldn't do it, he decided...the powers that be will come down on your head. That cannot be proven so far as I know. I didn't hear it, but when I came on the job, the history of everything was explained to me and several people, a couple that are very, very reliable, have mentioned that to me. Where he said, "Yeah, I'll make sure they remember the day they crossed me." (7)

Certainly, this statement does not prove that a personal vendetta was the engine driving Lacey Act enforcement activities against the Texas shrimpers. But if the director did harbor some ill feelings toward the B-PI shrimpers, there are factors which could easily have exacerbated such feelings. According to the Executive Director of the Texas Shrimp Association, at least, the distant Florida headquarters of NMFS is simply

> more oriented toward the fisheries industry in the eastern gulf and south Atlantic. (NMFS feels) there is not a lot of excitement (in our industry). Shrimping is a mature industry. There's not a lot of fishery development going on. There's not a lot of those things that bureaucracies would see as an opportunity to expand their area of activity. We conflicted (with) NMFS on some issues, especially the current Executive Director... (8)

If the Florida NMFS office was not particularly interested in the B-PI fleet, then their recalcitrance might have been seen by NMFS officials as especially vexing. Significantly, the shrimpers were not just recalcitrant on Lacey compliance. Coincidental to the surge in Lacey enforcement, the Texas shrimpers had refused to cooperate with a NMFS request that the captains report shrimp tonnage and prices the day of the catch instead of some days later. The new reporting system was to be not only "real time" but mandatory instead of voluntary. Although

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(7) Interview with NMFS official who requested anonymity, May, 1986.

(8) Interview with Ralph Rayburn, Executive Director, Texas Shrimp Association, Austin, Texas, January, 1986.

NMFS only wanted the data for management purposes, the shrimpers felt that the new reporting system would hurt them since shrimp buyers could use the data to limit their bids, and, in the process, limit shrimper income.

The impetus for Lacey Act enforcement in south Texas clearly had many sources. Those sources were primarily organizational. Both the Coast Guard and the NMFS noted violations and responded, although in both cases initial Lacey enforcement was almost incidental to some other enforcement action. While we can only speculate on the extent of a personal impetus to enforcement, it may well have played some part in the escalation of enforcement actions in 1983 and 1984. We turn now to those actions.

Determinants of Enforcement Patterns

The most obvious factor shaping deviant control strategies is the extent to which that deviance is seen by officials to be excessive or a threat. By all accounts, Coast Guard and NMFS vigilance and enforcement grew in the early 1980's as those agencies recognized the scope of Lacey violations. But there were other factors. In addition to political pressures possibly for and certainly against enforcement, there emerged images of Texas shrimpers which, at least among key NMFS tfficials, in some sense justified aggressive enforcement. In this section, we will examine chronologically both the variation in enforcement strategies and the factors which seem to have shaped them.

Perhaps because the Coast Guard was geared up to handle drug smugglers in the Texas gulf, the initial approach to Lacey violators was to deal with them as criminals and to apply criminal sanctions as the Lacey Act permitted. Consequently, the approximately 40 Lacey Act cases made in 1982 began with at sea boardings by Coast Guard officers with shotguns, M-16s and drawn .45 caliber pistols. Shrimp captains whose boats had been spotted in Mexican waters were handcuffed, booked on criminal violation of the Lacey Act and taken before a federal prosecutor in Brownsville. While this approach kindled hostility among shrimpers, it apparently did little to stop trawling in Mexico.

By the spring of 1983, the NMFS executive director declared that a new, more vigorous approach was in order. In an "administratively confidential" memo to the Coast Guard Commander in New Orleans, NMFS Regional Director Jack Brawner proposed that federal enforcement of the Lacey Act "convert from criminal misdemeanor to civil penalties with a $10,000 fine and seizure of catch for first offenses for shrimping in the Mexican Economic Zone". The memo also detailed the several reasons for this recommendation which we summarize below:

1. Low level of penalties then being assessed could be a source of embarrassment to the U.S. government in their efforts to treat with the Mexican government on fishery matters.

2. A NMFS special agent's life had been threatened as a result of initial criminal action on Lacey.

3. The General Accounting Office had been critical of both the Coast Guard and NMFS for not enforcing Lacey vigorously.

4. Many shrimpers in Brownsville continue to refuse to provide landings and prices to NMFS statistical agents. "At least one of the shrimp leaders stated this publicly and on record. In essence, disrespect for the law prevails in the Brownsville area." (emphasis added) (9)

The proposed penalties went into effect immediately, in time for the 60 day closure of the Texas coast to shrimping. Coast Guard vessels formed what one briefing paper called a "picket line" in the gulf along the international boundary. This strategy in 1983 yielded 76 Lacey cases, what officials viewed as "large scale violations". In addition to the fine, the shrimpers caught coming out of Mexican waters with shrimp suffered immediate loss of the catch, often valued at many thousands of dollars. Often no boardings were involved. NMFS agents simply noted the times and dates the shrimp vessels left port. If during the closure the vessels returned with shrimp sooner than a trip to Louisiana was feasible, then they had either been fishing in Texas waters in violation of the closure or in Mexican waters in violation of the Lacey Act. These shrimpers were given a choice of fines. Since a closure violation carried a greater fine that a Lacey violation, shrimpers usually took the latter.

Heavy fines and catch seizures coming soon after armed boardings and criminal treatment of captains turned smoldering shrimper ill-will toward federal officials into overt hostility. In addition to the threat on the life of a NMFS agent mentioned in Brawner's memo above, there were reports of arson attacks on local federal buildings, threats to blow up Coast Guard vessels and harassments of Coast Guard personnel and their families in Port Isabel.

Some shrimper leaders recognized, however, that the most effective response to stepped up enforcement was not individual attacks on local officials but political pressure in Washington. Primarily through Texas Senator Tower and Congressman Ortiz, shrimp leaders were able to pressure Commerce Secretary Malcolm Baldridge into rescinding the practice of seizing catches, although the fines could remain. Through 1984, captains caught with Mexican shrimp could keep their catch but received a substantial fine, usually $10,000. Moreover, shrimpers could take their case before an Administrative Law Judge if they thought the fine set by NOAA's General Counsel in St. Petersburg was inappropriate.

Since the last quarter of 1985 and through 1986, the Coast Guard-NMFS enforcement approach has become both more severe and more sensitive. It is more severe in that in the Fall of 1985, officials again received permission to seize illegal catches as part of the Lacey sanction. Their approach is more sensitive in that it downplays the enforcement aggressiveness of earlier years which so upset

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(9) Memo from NMFS Executive Director Jack Brawner to Admiral Stewart, Coast Guard 8th District, New Orleans, May 17, 1983.

shrimpers. Specifically, in 1985, instead of making boardings at sea (which can be dangerous even if no weapons are involved) the Coast Guard set up a stationary barge and simply checked all boats passing in and out of the port channel. This change in policy is described by the Coast Guard Station Chief in the B-PI area:

> What I suspect happened...is in getting into a more active law enforcement end of things from this unit which is primarily involved in search and rescue, by getting into a more active law enforcement profile, the training they received ...was geared at drug runners as opposed to a guy making a fishing violation. Now we use a little more judgment for calls, and I'm talking about as opposed to my predecessors,...we don't go aboard as a SWAT team, we don't have to use that much force for compliance with a fishing law.(10)

Generally, federal enforcement of the Lacey Act has moved after initial indifference through proactive enforcement into reactive enforcement. During 1983 and 1984, a proactive, aggressive posture rested on the assumption that the problem was serious and possibly getting out of hand. Strict vigilance uncovered high numbers of violations which, in turn, justified the enforcement efforts.

This proactive posture was at least to some degree fostered by an image, especially among NMFS personnel, that shrimpers were generally deviant, even dangerous. For example, at least in 1983 as we have seen above, the Executive Director of the NMFS southeastern regional office believed that disrespect for the law was prevalent among south Texas shrimpers. Similarly, the initial boardings by armed and ready Coast Guard officers suggested that those on board the shrimp vessels were thought to be dangerous. Indeed, informants have suggested that the young seamen who made the boardings were told they might well encounter resistance and to be ready to return fire. Though no boarding party has been fired on, the stories of arson attacks, death threats and other aggressiveness support the image that the shrimpers are a mean lot. Although the shrimpers themselves argue that there was little basis for those stories, they were taken to heart by many Florida officials. The Director of the NMFS office there has repeatedly stated he will not travel to Texas for fear he might not get out alive.

Although such images of the Texas shrimpers may linger, enforcement patterns have been less aggressive through 1985 and 1986. The approach became reactive. A New Orleans based Coast Guard official described the present pattern in the following manner:

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(10) Interview with Chief Hudson, Coast Guard Station, Port Isabel, Texas, May, 1986.

> In the last two years nobody has pushed us into enforcing the Lacey Act. We have documented some violations but probably no where near as many as there were. And for the last year, our policy has been pretty much to go after violations reported to us ...(11)

To this point we have considered the creation and particularly the enforcement of the Lacey Act. We turn now to the reactions of those subject to that enforcement, the shrimpers in the B-PI area.

Local Shrimper Reactions to Lacey Act Enforcement

Several factors worked against early and extensive compliance with the Lacey Act among south Texas shrimpers.(12) One factor was the predominance of the Hispanic culture and language among the shrimpers. While most are quite familiar with English, many prefer and are more comfortable with Spanish. Non-local federal agents are not fluent usually, and the Coast Guard has considerable difficulty getting and keeping bi-lingual officers. Not only did a language barrier make encounters with shrimpers problematic, but it probably hampered early dissemination of information about the law and penalties.

Another factor was that many shrimpers are not well educated or comfortable dealing with bureaucratic regulations. This last point particularly applies to non-owner captains and captain-owners of one or two boats. Better educated men, or at least those with considerable experience and business acumen, have over the years put together a fleet of several vessels, stayed ashore and hired captains for their boats. Thus, in many cases the captains in the wheel house who actually made the decision whether or not to go into Mexican waters may have often lacked the insight or caution of their employers ashore.

A final factor was simply that vessels had for so long been going into Mexican territory to shrimp that it seemed perfectly appropriate to do so. The tradition lent legitimacy to the trip. For most shrimpers in the area, not going into Mexico was deviant.

These and related factors made noncompliance with the Lacey Act in the early 1980's quite predictable. The highly independent and rather isolated local fishermen were not particularly swayed by federal efforts to apply from afar an incomprehensible law that went counter to strong local traditions. The initial reaction was to be angered by the Coast Guard's practice of armed boardings and to try to evade detection. Shrimpers began using many evasion techniques such

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(11) Interview with Commander John Byrd, 8th Coast Guard District, New Orleans, July, 1986.

(12) For a general overview of the Texas shrimping industry and the those involved in it, see Maril, L. Texas Shrimpers. College Station: Texas A & M University Press, 1980.

as covering boat numbers, fishing at night or placing Mexican shrimp on a friend's boat which had not been seen in Mexican waters and then coming in empty--no shrimp, no fine.

It is important to stress that while the shrimpers certainly did not share the federal notion that harvesting shrimp in Mexican waters was wrong, they initially offered no collective resistance. Shrimpers have never been well organized, and their reactions to early federal efforts to enforce the Lacey Act were quite individualistic. Not only did individual captains try to evade Coast Guard detection, but some shrimpers or their sympathizers engaged in harassment of federal agents. These latter actions did not appear, however, to have been the result of an organized conspiracy among shrimpers.

By late 1983, federal moves had begun to change the nature of shrimper reactions. The NMFS decision to increase sanctions to include a $10,000 civil fine and forfeiture of the catch served to create solidarity among at least some shrimpers and promoted the first collective resistance to enforcement. We have already mentioned that these shrimpers were able, by 1984, to bring sufficient political pressure to bear on the NMFS that that agency rescinded catch forfeiture as part of the Lacey sanction. In that same year, these local leaders, working through the Brownsville-Port Isabel Shrimp Producers Association, also brought suit in federal court to block enforcement of the Lacey Act. By assessing association members several hundred dollars per boat, the leaders were able to retain not only local counsel but also a Washington, D.C. law firm. The plaintiffs claimed, in an involved argument, that the Lacey Act was contrary to existing international law.

Aggressive enforcement of Lacey had a more pervasive and fundamental effect among shrimpers than mobilizing high profile political and legal action. Enforcement also promoted the emergence and articulation within the shrimper community of what sociologists call a "vocabulary of motives". This refers to rationalizations already within the culture which people may draw on to explain and give legitimacy to their actions. Certainly, motives did not need to be articulated before enforcement. Tradition and profitability were sufficient and self evident.

With enforcement, however, came a need to make more explicit the basis for trawling in Mexico and for the indignant, anti-federal posture which the shrimpers took. As shrimpers attempted to explain their opposition to federal action, their statements were not only shared interpersonally but were printed and reported in the media. In this way, over time, a widely shared "vocabulary" for explaining their behavior and attitudes emerged among shrimpers. Such a vocabulary can do more than just explain past behavior; it can also free men to continue to violate the law.

The emergent "vocabulary of motives" drew on several assertions which all shrimpers in the B-PI area supported. One assertion was "they're our shrimp in the first place". Since the Galveston estuary produces much of the shrimp in the gulf and since shrimp are widely believed to migrate south, eventually into Mexico, U.S. shrimpers believe they have a right to pursue and take what is theirs. Another assertion is "the shrimp down there just die and are wasted since the Mexicans aren't catching them". The approximately one year life span of the gulf shrimp argues for timely harvesting. At the same time,

most shrimp industry observers agree that the nationalized, Mexican shrimp industry is so inefficient that the shrimp resource is nowhere near optimized. A third, and very frequent, assertion is that the "Coast Guard is really enforcing Mexican law." To shrimpers, Lacey enforcement is triggered solely by Mexico's EEZ claim. It is thus unfair for the power of the U.S. government to be arrayed against local businessmen because of another country's law. Related to this last point is the belief among many shrimpers that the federal agencies actually cooperate with the Mexican gun boats to catch shrimpers. In the case of the NMFS, at least, such cooperation has occurred.(13) A last assertion is that "I've got to feed my family", that economic necessities make trips into Mexico necessary. Through the early 1980's, fuel and insurance costs were high while prices for shrimp were relatively low. The industry generally, and the small, marginal operator especially, were being squeezed economically.

The coalescence of this set of statements into a collective justification of behavior coincided with the removal of seizures as part of the Lacey sanction in 1984. The result was, from the view of federal officials, "massive violations" of the Lacey Act. Indeed, enforcement statistics reveal that more cases were made in that year than in any year before or since. (see Appendix: Table 1) Not only did many shrimpers feel their Mexican trips were morally justified, the immediate sanction of forfeiture was no longer a concern. The only sanction was a Notice of Violation and Assessment (NOVA) which represented a distant sanction, one which might be avoided or dampened at some future date through an hearing before NOAA's one Administrative Law Judge. Although federal officials believed that the number of 1984 violations reflected a conspiratorial effort to "flood" or "swamp" the system with cases, it is more likely that shrimpers simply felt that political and incipient legal actions would remove the Lacey problem.

If shrimpers felt in 1984 that they were gaining an advantage in the Lacey conflict, they saw it begin to crumble in 1985. By early 1985, Administrative Law Judge Dolan had worked through the many Lacey cases which originated primarily during the summer and fall of 1984. Generally, he upheld the NOVAs so that shrimp captains and boat owners were suddenly faced with the reality of having to pay the typical $10,000 fines (see Appendix: Table 2). Moreover, in June, 1985, Brownsville Federal District Judge Vela ruled against the local shrimper's association in their suit to block Lacey enforcement. And perhaps, most importantly, in September, 1985, the NMFS service received permission to resume the immediate seizure and sale of a Lacey violator's shrimp.

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(13) "I've talked on the phone with the Admiral over in Matamoros who can order the Mexican gun boats up this way. (When) I've had word that a lot of people (shrimpers) have gone out, I'll just go down and visit and talk with the Admiral and apparently the Mexican Consulate there has quite a bit of pull. And the Admiral would order the boats that would be headed south and he'd have them turned around and ride the border area. So the Mexicans do work with us on it." Interview with Monty Price, NMFS Special Agent, Corpus Christi, Texas, May, 1986.

Official statistics indicate that relatively few Lacey cases were made in the summer and fall of 1985, a pattern continued in 1986. (see Appendix: Table 1) This could, of course, be due to the Coast Guard's less aggressive enforcement policy. Certainly budget cuts and new commanders less interested in fishery law enforcement could account for these patterns. However, preliminary interviews suggest that in fact since 1985, Texas shrimpers have largely ceased going into Mexican waters.

There are several reasons for compliance at this time. Most obviously, shrimpers do not want to risk the loss of their catch or the fine they now know will be assessed and collected. They are also aware that the Mexicans have become at least somewhat more serious about enforcement. At the same time, some shrimpers report that lower fuel prices in 1986 have made it possible to make money north of the border.

There is perhaps a more fundamental reason for compliance, and that is simply that the shrimpers in the B-PI area have grudgingly accepted their own individual and collective powerlessness. There is still political concern among elected Texas representatives, but the resumption of seizures suggests that political pressure is now less effective. The legal battle was lost, and there is no money for an appeal. And finally, in the process of fighting Lacey, local shrimpers have learned that the rest of the Texas shrimp industry is neither affected by nor particularly interested in the Lacey Act or their problems with it.

Conclusions

This account of the Lacey Act problem suggests several conclusions beyond the fact that understanding enforcement of a law is critical to understanding patterns of its violation. First, and most obvious, it is apparent that strong penalties can be a deterrent. Seizures and fines did alter the behavior of many shrimpers. While some still go after shrimp in Mexican waters, the risk and sense of powerlessness has become too great for many.

It is evident also that variations in enforcement pressure and levels of sanctions can heighten violations. When officials lightened the sanctions in 1984 (rescinded forfeiture), it is reasonable to assume that many shrimpers sensed a generalized "backing off" by enforcers. This, in turn, fueled the shrimpers own sense of being morally right and produced more violations.

Finally, and perhaps most importantly, it seems that enforcers, especially the NMFS, did not really appreciate the level of resistance Lacey enforcement would produce. With headquarters on the east coast and only one agent in Texas, the agency was not particularly sensitive to the shrimpers in the B-PI area. Much the same could be said of Coast Guard District headquarters in New Orleans. Officials did not fully appreciate the extent to which trawling in Mexico was an integral part of not just the B-PI shrimp business, but the community as well; the practice was not simply an isolated violation which crisp enforcement could quickly eliminate. This lack of understanding was the primary basis for the escalation of emotions and actions on both sides.

Appendix

Table 1
The Distribution of Lacey Act Cases by Year: 1982-1986*

Year	Frequency	Percent
1982	43	10
1983	76	18
1984	296	70
1985	7	2
1986(through May)	2	<1
Total	424	100

Table 2
Range of Fines Assessed Against Lacey Act Violators*

Amount Fined	Frequency	Percentage
No fine	12	3
$1 - 4,999	47	11
$5,000 - 9,999	126	30
$10,000 or more	239	56
Total	424	100

* Source: Enforcement Management System data provided by the National Marine Fisheries Service

FISHERY LAW ENFORCEMENT IN THE GULF OF MEXICO

Lieutenant-Commander John Byrd, USCG

ABSTRACT

Three of the eight Fishery Management Plans in force in the Gulf of Mexico have severe enforcement problems. These problems are caused by regulations that are too complex and unpopular, and by manpower and budget shortfalls within the Coast Guard. These FMPs are not attaining their goals, and the regulations intended to achieve them need to be reexamined.

INTRODUCTION

In the Gulf of Mexico the issue of enforceability has not been given the attention it deserves in the planning process. A Fishery Management Plan (FMP) which meets all of the biologists' criteria for species protection, yet can be blatantly ignored by fishermen, fails taxpayers who suppose that society's interests are being guarded. Compliance is directly proportional to enorceability, and enforceability is an issue that has been sidestepped all too often. A recent article by two NOAA attorneys noted the irony in the failure to consider enforcement capabilities in devising FMPs, since fisheries managers do not manage fish so much as they manage fishermen.

The goal of enforcement, then, is to influence the behavior of fishermen, and that is no easy task. Fishermen are not eager to have their affairs regulated by the government and there are powerful economic incentives for the fishermen to violate regulations. In this paper I'd like to discuss the enforceability of three of the eight FMPs presently in force in the Gulf of Mexico.

THE TEXAS SHRIMP CLOSURE

First let's look at the Texas shrimp closure, which constitutes by far the Coast Guard's biggest fisheries law enforcement effort in the Gulf of Mexico. Texas began closing its waters, from the baseline to nine nautical miles, in 1959. In 1981 the federal government, at Texas' request, also closed federal waters adjacent to Texas out to 200 miles. Biologists inform us that to achieve the closure's goals we need only protect shrimp out to 15-20 miles. But in 1980, when the Gulf Council considered the available closure options, they finally decided on a 200-mile closure. Only that, they thought, would be enforceable. After a season of rampant violations coupled with strict enforcement, the Texas closure season thereafter settled into an almost routine annual event, with a high level of compliance and a minimal but effective enforcement effort.

But the benefits of closure are purely economic; shrimp conservation was never a purpose. As several seasons passed, the supposed economic benefits of the closure were increasingly difficult for most people to accept. So under great pressure from certain industry groups, the Gulf Council set the enforceability issue aside and reduced the closed area to 15 miles off the coast. From an enforcement standpoint, the 300-mile long but 15-mile wide closed strip of water is ludicrous--effective enforcement would require a Coast Guard cutter stationed every 25 miles along its length.

Each of the enforcement agencies involved knows that the amended Texas Closure is being openly violated. The FMP looks great on paper. It might achieve its goal if there were a larger measure of compliance. But there is not, and so the management goals are doomed to fail. In his book The Management of Marine Fisheries, J.A. Gulland says of closures: "On theoretical grounds there is, except in a few special circumstances, little if any justification for the introduction of closed areas or closed seasons." His reasoning is that a closure only encourages an increase in fishing effort when the closed area is eventually opened, with no net benefit.

That is exactly the case off Texas. Texas fishermen resent the closure because it tends to result in a stampede of fishing vessels from Louisiana, Mississippi, and Florida when the season opens. The shrimp taken after a closure are larger and more valuable, but the benefit is spread among so many more fishermen that the closure seems to have lost whatever support it originally had. I asked Dr. Ed Klima of National Marine Fisheries Service's Laboratory whether a closure, if it is a good idea off Texas, would be a good idea off other states as well. He said that a similar closure wherever a shrimp fishery exists would be an effective management measure. A closure confined to one state is economically counterproductive. The present closure off Texas is locally unpopular because it has produced no economic benefits among local fishermen.

From the Coast Guard's point of view, the present law puts us in the difficult position of enforcing regulations that few support. The fishermen do not want us to enforce the regulations; the species are not endangered so that biologists and conservationists do not care whether the law is enforced. But we are stuck; we have to try to enforce it.

I think the time has come to reexamine what is being done off Texas. If the Texas closure is good management in theory, then it needs to be adjusted to make it good management in practice. Specifically, a way must be found to ensure that fishermen who are expected to comply with the closure are the same ones who will get its economic benefits. That may sound like an endorsement of limited entry, but a similar protective closure encompassing the shrimp fishery in other Gulf states would achieve the same result.

THE RED DRUM AND MACKEREL FMPs

Enforceability problems exist also with the Mackerel and Red Drum regulations. Right now both fisheries are closed in federal waters. But they are both wide open in state waters throughout the Gulf, and of course, there is no way to tell where a fish was caught when it is landed.

But that is just the beginning of the problems with these two FMPs. The Red Drum FMP allows some commercial catch--up to five percent by weight for any commercial vessel. Shrimp trawlers are also allowed an incidental catch under a different quota. But the five per cent rule applies to catch landed for an entire trip, not to what may be observed on board at any given time. Therefore to get a prosecutable case against a violator we would have to observe an entire fishing trip--an impossible task.

Recreational and commercial quotas are managed separately, and each of the five Gulf Coast states has its own set of commercial and recreational rules and limits. The Red Drum regulations are pretty complicated, but they are nothing compared to the situation for Mackerel.

The Mackerel FMP applies to seven different species of fish: Spanish, King, and Cero Mackerel; also Cobia, Little Tunny, Dolphin, and Bluefish. Differing regulations exist for several of these, most notably between Spanish and King Mackerel. The regulations also differ between the Gulf and Atlantic sides of the fishery. And now there is talk about splitting the Gulf group into two separately managed groups. In addition, the dividing line between the Gulf and Atlantic groups changes during the course of the fishing year. There are also separate rules for commercial, charter, and recreational vessels. And just to complete the regulatory stew, there are lengthy regulations on gear, size limits, bag limits, and permits.

Mackerel and Red Drum enforcement cases are few and far between in the Gulf of Mexico. I think virtually all violations go undetected. Just how common they are, one can only guess. But I think that gross, intentional, and continuing violations occur in the directed Red Drum fishery.

THE ROLE OF THE COAST GUARD

The Coast Guard is a multi-mission agency. We enjoy fisheries law enforcement and it is one of our primary duties. But first and foremost our boat crews are search and rescue teams. Like everything else these days, search and rescue has gotten complicated. It takes a lot of training to qualify a person for duty in a boat crew. A crewman has to understand search patterns, seamanship, and a lot about first aid. Every boat crew is also a drug interdiction platform. Crew members have to be trained in legal aspects of boarding, jurisdiction, search and seizure law, arrest, and prisoner control. All this is in addition to shore duties, and it leaves little time to

personnel and keep them current as fisheries law enforcement officers.

The fisheries regulations are constantly changing, and most of our people in the field stay at a duty station only one to three years. We need more National Marine Fisheries Service agents in the field. They are the real fisheries law experts. Our people are good general law enforcement "types," but they cannot be expected to be well informed on all effective FMPs.

The Coast Guard is not in the fishery management business. We take no positions on basic question of whether or not management is needed. But we are bound to enforce regulations supporting each of the various FMPs. I think that one day fishery managers are going to realize that plans are not achieving their intended goals. When that happens, fingers will no doubt be pointed at the enforcement end. Someone will suggest that the solution is to increase the level of enforcement--and that is not a simple solution. In today's budget climate, significant increases for enforcement expenditures are extremely unlikely.

CONCLUSION

My point, then, is this: There exists now a large gap between the level of enforcement needed and what we are able to perform. In the future our Gulf fisheries will require even more sophisticated management, as more species become threatened by overfishing. But it is highly unlikely that spending for enforcement will keep pace. As a result, management measures need to be kept as simple as possible. They must also be conducive to efficient enforcement, either dockside or through use of air patrols. And perhaps most importantly: To reduce the confusion that now exists, state and federal regulations need to be consistent.

AQUACULTURE INITIATIVES IN NORTH CAROLINA

Walter F. Clark*

ABSTRACT

North Carolina's legal and administrative structure is currently not adequate for the promotion of aquaculture - particularly in the state's public trust waters. Because of the state's concerns for such issues as public trust rights, environmental protection and riparian rights there are laws and regulations that inhibit the development of aquaculture. This paper reviews some of these laws and regulations and discusses how they effect aquaculture development. It concludes with recommendations for removing some of these limitations.

Introduction

North Carolina possesses the land, water, climate, labor and other natural resources necessary for capturing a larger portion of the world's aquaculture market. The state, however, does not provide the research facilities, policy guidelines or statutory and fiscal support necessary to further develop the aquaculture industry. These were the findings of a committee, established by the North Carolina Marine Science Council,[1] to review aquaculture in North Carolina.

The Aquaculture Committee was created in the spring of 1986. The committee included representatives from state government, the commercial fishing industry and the academic community. Part of the committee's charge was to identify statutory and regulatory constraints on the development of a more extensive aquaculture industry in North Carolina. This paper identifies some of these constraints and contains suggestions for remedial action.

*Ocean and Coastal Law Specialist, UNC Sea Grant College Program, North Carolina State University, Raleigh, N.C. 27695-8605.

Besides limited provisions for the "back yard" variety of shellfish culture, the state has no comprehensive framework to encourage aquaculture development. In fact, because of the state's concerns for such issues as navigation, water quality, fishing, etc., there are laws, regulations and policies that inhibit the development of aquaculture. Some of these are discussed below. They are listed under headings that represent the legal principles from which they were developed.

The Public Trust

The public trust encompasses the right to use and enjoy certain lands and waters held in trust by the state for the benefit of the people of North Carolina. These rights apply to all navigable water and to much of the state's submerged land. They include, but are not limited to, the right to navigate, swim, hunt and fish. Under current standards, an aquaculture operation that interferes with public trust rights would have difficulty in being permitted.

There are exceptions to public ownership of submerged lands in North Carolina. For example, the beds of most streams and rivers in the piedmont and mountains are owned by the adjoining property owners (the riparian owners). Artifically created ponds and lakes usually belong to the owner of the land on which they are situated. Finally, there are instances in the coastal area where submerged land (regularly flooded marshland) within sounds and rivers has been transferred to private owners by deed.[2] Where submerged land is privately owned, public trust rights do not apply. It must be noted, however, that privately owned submerged land can be covered with public trust waters. In these instances public trust rights in the water could limit the type of aquaculture activities that might be conducted on private bottomland.

Public trust submerged land is not for sale in North Carolina. Current law does, however, allow the leasing of coastal submerged land for the culture of shellfish.[3] There is a 50-acre limitation on the amount of land available for lease.[4] Though not stated in the statute, this limitation was likely enacted to protect public trust bottomland from extensive private use.

Two steps can be taken in regard to coastal submerged land that will encourage further aquaculture development. First, allow the leasing of submerged land for all aquaculture activities -- not just for shellfish culture. This will allow for experimentation with other forms of aquaculture. Second, remove the current limitation on the amount of submerged land available for lease in situations where greater acreage can be justified and when public trust rights are given adequate consideration and protection.

Public trust rights are also found in all natural and navigable waters of the state regardless of the ownership of the bottomland. North Carolina has no provision for leasing surface waters or water between the surface and the bottom (the water column). But many forms of aquaculture, including some types of shellfish culture, require water column use. Leasing of the water column should be allowed in situations where the use is justified and where public trust rights are given adequate consideration and protection. (Note: In areas where the bottomland is privately owned, the opportunity for leasing should be limited to the owner of the bed or his lessee).

North Carolina's Coastal Area Management Act is also important with regard to public trust rights.[5] CAMA establishes several areas of environmental concern (AECs). One of these AECs is called the Public Trust Area of Environmental Concern. The North Carolina Administrative Code, which delineates the use standards for AECs, contains several provisions that might require modification. One specific section of the code states that, "in absence of overriding public benefit, any use which significantly interferes with the public right of navigation or other public trust rights...shall not be allowed."[6] The code lists several uses that may be acceptable within public trust areas. Aquaculture should be included as one of these uses. (Note: While CAMA and its regulations appear to establish the authority for the Coastal Resources Commission and the Division of Coastal Management to act with regard to fisheries activities, such activities have generally been excluded from their examination).

Environmental Restrictions

Federal, state and local government can limit the use of land and water when that limitation is designed to protect the health, safety and welfare of public. Many of our environmental laws and regulations come from this power. An aquaculture operation that violates these laws and regulations would have difficulty in being permitted.

Regarding water quality, the North Caroline Environmental Management Commission has the authority to regulate the discharge of wastes into the public waters of the state.[7] The Commission currently does not make special provisions for aquaculture and any associated water quality problems.

Consequently, discharges from an aquaculture facility are examined under the same guidelines that are applicable to other types of discharges. The Environmental Management Commission should review its discharge requirements in light of a developing aquaculture industry.

There are other statutory and regulatory provisions designed to protect the environment. Many of these are found in CAMA and its companion regulations. In particular, there are standards designed to protect beds of aquatic vegetation and benthic organisms. These should be examined in regard to their impact on aquaculture.

Finally, CAMA requires coastal counties and towns to develop land use plans. These plans must be consistent with the state guidelines developed by the Coastal Resources Commission. Guidelines should be developed that encourage aquaculture and the development of onshore support facilities. It should be noted that a recent North Carolina court decision seems to indicate that local government in the coastal zone can choose between conflicting land and/or water uses and exclude the use it elects.[8] This decision could be applied to allow local governments in the CAMA zone to ban aquaculture uses that are environmentally unsound. It would also allow local government to ban uses that conflict with public trust uses such as boating and water skiing.

Riparian Rights

Riparian rights are those rights belonging to the owner of land that borders a watercourse. The most obvious of these rights is the right of access to deep water. In North Carolina, this right is recognized by case law, statutory law and regulation. An aquaculture operation that hinders the riparian right of access to deep water would not be allowed. Riparian rights should be protected and aquaculture facilities should be located in areas where they cause limited infringement e.g. areas with relatively undeveloped shorelines. In an effort to protect riparian rights current regulation requires bottoms leased for the culture of shellfish to be set off at least 100 feet from a developed shoreline. In areas bordered by undeveloped shorelines no minimum setback is required.[9] Developed and undeveloped shorelines are not defined.

It should be noted that an aquacultaurist can benefit from riparian rights. Ownership of riparian property will facilitate access to the water. It can also provide nearby land for support facilities.[10]

Other Concerns

Obtaining a permit to undertake an aquaculture operation can involve several regulatory agencies. This often results in confusion particularly where there is jurisdictional overlap. Developing a single permit system for aquaculture operations would eliminate much of this confusion.

Finally, if leasing of the state's submerged land and water is to occur on a larger scale, the state must develop a means of achieving an equitable return for public property dedicated to private use. This might be achieved through adequate leasing fees, royalty requirements or through some form of mitigation effort.

Conclusions

Based on the recommendations of the Aquaculture Committee, the North Carolina Marine Science Council will make the following recommendations in a report to be issued by the Council in the spring of 1987.

- Allow for larger areas of submerged land to be leased when such leases do not adversely affect public trust uses such as recreational and commercial fishing or are deemed a more beneficial use of the area.

- Permit leases or easements to include the water column above the bottom provided they do not unduly interfere with public trust uses such as swimming and navigation in areas where these uses are actively employed.

- Develop criteria for the CAMA program to facilitate aquacultural development in appropriate areas.

- Facilitate aquaculture by a single permit with final authority to determine issuance vested in the Secretary of the Department of Natural Resources and Community Development.

- Adopt waste discharge requirements specifically tailored for aquaculture projects.

- Assure adequate recovery for dedicated public trust resources by providing for an equitable economic return on leased areas.

The report will also recommend the creation of the North Carolina Aquaculture Board. The Board will review the Council's recommendations and make suggestions for legislation and regulatory change.

Footnotes

1 N.C.G.S. 143B-389. This statute creates and delineates the functions and duties of the North Carolina Marine Science Council. Two of the Council's functions are: (1) To encourage the use and study of the ocean, estuarine and coastal waters of the state of North Carolina by citizens and industries of the state; and (2) To advise in the coordination of efforts toward full development of the state's marine resources with proper attention being given to the need for conservation.

2 In North Carolina, there are a few cases where title to submerged land can be traced to deeds issued by the N.C. Board of Education during the 1920s and 1930s. Even though private title to these lands has been recognized, the coastal waters above them are public trust waters with all public trust rights reserved. See N.C.G.S. 146-20.1 (a) and (b).

3 N.C.S.G. 113-202. There are no provisions for leasing bottomland for other types of aquaculture.

4 N.C.G.S. 113-202(b). This statute contains minimum standards that must be satisfied before a shellfish lease is granted. One standard states that, "cultivation of shellfish...will be compatible with lawful utilization by the public of other marine and estuarine resources." Other uses which may be considered include, but are not limited to, navigation, fishing and recreation. N.C.G.S. 113-202(a)(3). Another standard provides that any area leased may not contain a natural shellfish bed, N.C.G.S. 113-202(a)(2). This is an attempt to protect the natural fishery for public harvest. Finally, a section was recently added to N.C.G.S. 113-202(a) which prohibits the issuance of a shellfish lease in an area that is heavily used for recreational purposes. This is an attempt to limit conflict between shellfish leasing and members of the public exercising public trust rights.

5 N.C.G.S. 113A 100-134.

6 15 N.C.A.C.7H.0207(d).

7 N.C.G.S. 143-211.

8 Worthy v. Town of Bath and Bath Preservation Association 82 N.C. App. 32,345 S.E.2nd 699 (1986).

9 N.C.G.S. 113-202(a)(4) and 15 N.C.A.C. 3C.0302(a)(2).

10 There are limitations on the exercise of riparian rights. Many of these limitations are environmental safeguards. See 15 N.C.A.C. 7H.0208 (use standards for coastal wetlands, estuarine waters and public trust waters).

A SURVEY AND RANKING OF IMPEDIMENTS TO MARINE AQUACULTURE IN COASTAL STATES

Robert Neikirk*
Bartlett Theberge**

ABSTRACT

A survey of commercial aquaculture facilities was conducted to identify and rank constraints to commercial aquaculture development and to gain an understanding of the relative impacts of those constraints in Virginia and other coastal states. The results of the survey indicate an effectiveness of some state legislation to remove or mitigate important constraints to aquaculture development. This survey is to be used in conjunction with an analysis of aquaculture legislation in coastal states, to facilitate the development of recommendations to enhance the aquaculture industry in Virginia.

INTRODUCTION

The Problem

Aquaculture, the propagation and rearing of aquatic species in controlled or selected environments (National Aquaculture Improvement Act of 1985), has just recently begun to gain significant attention and respect in the United States. Recent attention may be due to the commercial success of a number of operations involving a variety of species and the passage of the National Aquaculture Act of 1980, recently amended by the National Aquaculture Improvement Act of 1985. As noted in the National Aquaculture Act the development of aquaculture is important to the United States in order to help balance the five billion dollar seafood trade deficit in this country. Commercial aquacultural production of crayfish and catfish in freshwater bodies has increased dramatically throughout the South and aquacultural production of some marine species, including oysters shrimp and clams, is now demonstrating or showing signs of commercial viability (Rhodes, 1987). However, successful aquaculture development has not been

*Student Research Assistant and Masters Candidate, Virginia Institute of Marine Science, School of Marine Science, The College of William and Mary.

**Professor and Chairman, Department of Ocean and Coastal Law, Virginia Institute of Marine Science, School of Marine Science, The College of William and Mary.

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uniformly distributed throughout the United States. Some states' aquaculture programs are much more developed than others. This is true even among different states which possess similar environmental conditions and are well suited for the culture of the species in question. Through ambitious aquaculture development programs and specific aquaculture legislation, a few states have enhanced aquaculture development and gained an advantage in the aquaculture industry over less ambitious states.

Virginia, a coastal state controlling a large portion of the Chesapeake Bay an Eastern Shore and possessing over five thousand miles of tidal shoreline, has vast areas potentially suitable for aquaculture development. The extensive series of shallow, well-protected lagoons along Virginia's Eastern Shore are ideal for many forms of aquaculture. The Eastern Shore, composed mainly of small fishing villages, is only sparsely developed and generally free of large industry. In addition, numerous seafood processing plants exist along the Eastern Shore which, due to recent declines in catch of many species, must import significant numbers of products in order to meet demand and keep their employees working. Over one half of the oysters shucked in Virginia are imported from out of state (Virginia Joint Legislative Audit and Review Commission, 1984). These local processers would provide a valuable service to the aquaculture industry while benefiting themselves from increased production. The Eastern Shore is also proximal to large Urban areas; Hampton Roads, Richmond, Baltimore and Washington D.C., where extensive markets could be further developed to accommodate many aquaculture products.

Scientific and technical data have been and continue to be developed for a variety of species which may be suitable for extensive aquaculture development in Virginia (Joint Subcommittee on Aquaculture, 1983). The Virginia Institute of Marine Science (VIMS) has conducted an exhaustive study of clam aquaculture and operates a clam aquaculture facility on the Eastern Shore. Innovative hatchery and grow-out techniques refined by scientists at VIMS have demonstrated the technical feasibility of such operations in Virginia (Castagna, 1983; Castagna and Kraeuter, 1981 and 1977). In addition, VIMS also operates an oyster hatchery and is in the process of developing seed oysters which may be resistant to the oyster diseases Haplosporidium nelsoni "MSX" and Perkinsus marinus "Dermo" which have ravaged the oyster industry in Chesapeake Bay.

The technology exists to support the successful development of commercial aquaculture for a variety of species. Unfortunately, the development of such operations in Virginia is hampered by a variety of legal, policy, and institutional constraints. Many of these constraints exist in Virginia because the practice of aquaculture has generally been overlooked and overshadowed by traditional fishing interests at the policy-making level. This paper describes the development and results of a survey to determine why the Commonwealth of Virginia, having vast areas ideally suited for aquaculture development and having developed aquaculture techniques which are presently being successfully utilized in other states, has attracted few successful commercial aquaculture operations.

The Development of the Survey

A number of studies have been conducted to identify constraints to the development of the aquaculture industry in the United States (Aspen Research and Information Center, 1981; Bowden, 1981 and Kane, 1970). These studies, while helpful with identifying federal and some general state impediments, proved to be too broad to sufficiently answer the questions surrounding our particular problem; that is, what impediments are responsible for constraining clam and oyster aquaculture development in Virginia? From the outset of this study, a general idea of what impediments were providing barriers to the development of these two aquaculture industries existed. However, before recommendations for the removal of constraints could be developed and suggested, a better understanding of the relative importance of each impediment was needed. Therefore, a two-part survey was developed to identify and rank what those persons involved in commercial aquaculture feel are the most important constraints to the development of their industries.

Although the clam and oyster aquaculture industries are underdeveloped in Virginia, some states do possess numerous successful commercial operations. Therefore, to obtain information from the aquaculture development efforts of other states, the survey was conducted nationwide with the replies keyed to the home state of the respondent. This technique identified additional constraints which may not have been revealed in a survey of just Virginia aquaculture facilities. Furthermore, it provided an insight into the effectiveness of various states' initiatives and actions designed to enhance aquacultural development.

Due to the wide array of aquaculture systems in the United States and the resultant variety of associated constraints, a conscious effort was made to fine tune the survey to apply specifically to the marine aquacultural production of oysters and clams. These species currently appear to hold the greatest potential for aquacultural development in Virginia. Furthermore, it was feared that a survey which included the identification of constraints to the culture of fresh water species or other marine organisms and finfish would merely serve to muddle the task at hand. However, when recommendations to enhance the development of commercial clam and oyster aquaculture are finally made, every effort will be used to recommend a definition which is broad enough to cover all other true aquaculture activities yet specific enough to exclude the traditional fisheries of the Commonwealth. The exclusion of traditional fisheries from the an aquaculture definition is necessary to prevent any specific aquaculture legislation or regulation from disrupting the management of traditional fisheries stocks. Such a definition should assist the development of other forms of aquaculture.

METHODS

A survey mailing list was compiled from all those facilities listed in the National Aquaculture Directory (Ayers, 1984), which identified clams or

oysters among the species cultured at their facility. Due to the large number of operations listed for the state of Washington, a subsample was randomly selected from the over four hundred entries listed in the Washington section of the directory. Additional names were added for many states from operations appearing in aquaculture-related journals. In Virginia, the mailing list included, in addition to those in the directory, aquaculturists who have solicited help through the VIMS marine advisory services program as well as individuals who have expressed serious interest in acquiring oyster seed from the VIMS oyster hatchery. Many of those expressing interest in the oyster hatchery are oyster leaseholders who currently transfer natural seed oysters from productive seed areas, such as the James River, to their leased bottoms and have carefully studied the Virginia aquaculture industry.

The survey was conducted in two parts. The first mailing asked the respondents to answer several questions regarding their facility and to list under the appropriate heading; Technical, Economic, Regulatory or Other, in no particular order, what they felt where the major constraints to the development of their aquaculture operation. The survey returns from this first mailing were compiled to create a national list of clam and oyster aquaculture constraints.

The second mailing asked the respondents to select and rank, from a list of the twenty-seven constraints identified from the first mailing, what they felt were the ten most important constraints to the development of their aquaculture operation. The questionnaire instructed the respondents to assign the most important constraint a ranking of ten, the next most important constraint a nine, and continue until the least important of the ten selected constraints was assigned a value of one.

The results from the second mailing were grouped by state and tallied. A total vote for each constraint was obtained by adding the individual ratings assigned to each item. Thus, if a constraint received ranks of 10-6-8-6, the total vote would be a thirty. After a total vote was obtained for each of the twenty-seven constraints, they were arranged in order, by state, and assigned rank from one to twenty seven. Therefore, the constraint receiving the highest vote was given a rank of one and assumed to be the most important impediment in that state. After the constraints had been ranked for each state, all of the replies were collectively tallied to obtain a national constraint ranking. The ranking system facilitated the comparison of the relative importance of each constraint from state to state. This technique was modified from the Delphi Survey Technique (Delbecq, et al., 1975) and provides an insight into the effectiveness of various state initiatives to remove a particular impediment.

Due to the subjective nature of the survey and the numbers it generates, no complex statistical tests were conducted on the data. The survey was not designed for such tests and would not likely fit the assumptions and rules for any statistical testing. What the results do

provide, is a relative measure of the importance of each constraint in a variety of coastal states.

RESULTS

Three hundred questionnaires were mailed out during the first part of the survey and sixty responses were received, which amounted to a return rate of twenty percent. Twenty-three questionnaires were returned undelivered due to facility moves and closures. Thirteen questionnaires were returned unanswered by persons listed in the aquaculture directory who, in actuality, are not aquaculturists. These thirty-six names were subsequently removed from the mailing list. Therefore, two hundred and sixty-four questionnaires were mailed out during the second part of the survey. Sixty-four responses were received, which amounted to a return rate of twenty-four percent for the second mailing. The return rates were lower than expected for both parts of the survey. Possible reasons for the low return rates and suggestions to enhance the percentage of returns are mentioned in the discussion.

The results of the survey are summarized in Table 1. The twenty seven constraints were developed in the first part of the survey and the rankings were compiled from the second mailing. The constraints in this table are listed in an order which corresponds to the national ranking. In addition to the national constraint ranking, the rankings for Connecticut, California, Washington and Virginia are listed along the side for comparison. These states had the highest number of returns and represent states in various stages of aquaculture development. Unfortunately, the low numbers of returns received from the other states surveyed did not justify the development of separate constraint lists for those states. The replies from those states are, however, reflected in the national constraint list and were important in the development of the twenty seven constraints from the first portion of the survey.

Table 2 lists the rankings of the aquaculture development constraints identified by the Virginia respondents. Included in this table are the total votes received for each constraint. As previously explained, statistical tests for significance were not performed on the data. The total vote is, nevertheless, helpful when making comparisons and judgments regarding the relative importance of two or more constraints.

One other method of presenting the results of the survey which proved to be helpful was to list rank of one state's constraints next to the ordered list and rank of a second state. Tables such as these were compiled for Virginia and California, Connecticut, and Washington and proved to be helpful for pointing out differences and similarities between the states. These tables are not included in this paper because space is limited and because this information can be obtained through careful study of Table 1.

Table 1. List of constraints and the associated rankings for Connecticut, California, Washington, Virginia, and the Nation.

RANK					
CT	CA	WA	VA	US	
1	4	10	5	1	Poor or variable water quality.
4	1	12	14	2	Lack of affordable investment capital.
8	5	2	7	3	Difficult and time consuming to obtain necessary leases, licenses and permits.
2	3	10	9	4	Lack of available coastal property which is affordable and appropriate for aquaculture development.
12	14	12	1	5	Antiquated laws and regulations designed to manage the natural fisheries which are inappropriate for aquaculture.
9	2	5	17	6	Lack of understanding by the investment community of the benefits and risks associated with different types of aquaculture operations.
14	8	4	3	7	Resistance to development by private property owners and traditional fishermen.
11	7	5	10	8	Lack of coordination between local, state and federal agencies.
5	17	19	2	9	Excessive costs associated with predator and disease control.
6	16	7	8	10	Ineffective measures to control theft of product.
15	13	16	6	11	Apathy of state regulators toward the aquaculture industry.
10	10	9	15	12	Health department regulations are too burdensome and inappropriate for some types of aquaculture.
18	6	22	12	13	Lack of technical research which is practical to the aquaculturist.
18	19	1	27	14	Excessive state taxes on labor and property.
3	19	8	20	14	Difficulty in entering into market and competing with the large companies.
21	22	17	4	16	Lack of rights to the water column and surface.
12	23	15	10	17	Poor understanding of private property rights.
7	12	24	17	18	Lack of insurance to cover losses due to storm damage.
16	15	17	15	18	Too few sources of specialized seed.
26	10	3	25	20	Other constraint(s) not listed above.
24	9	14	17	21	Lack of low cost equipment to clean, sort and grade products.
24	18	22	22	22	Lack of veterinary services and pathological laboratories for quick analysis of diseases.
23	25	20	26	23	Lack of approved antibiotics and other disease preventative drugs.
22	21	24	22	24	Lack of affordable manufactured feed.
17	24	20	20	25	Difficulty in obtaining and meeting hiring regulations for teens and temporary help.
20	26	24	24	26	Difficulty in obtaining scientific and technical information.
27	27	24	13	27	Excessive costs associated with raising phytoplankton for food.

Table 2. Ranking and total of votes received from Virginia respondents.

RANK	(TOTAL VOTE)	
1	(77)	Antiquated laws and regulations designed to manage the natural fisheries which are inappropriate for aquaculture.
2	(61)	Excessive costs associated with predator and disease control.
3	(44)	Resistance to development by private property owners and traditional fishermen.
4	(40)	Lack of rights to the water column and surface.
5	(39)	Poor or variable water quality.
6	(31)	Apathy of state regulators toward the aquaculture industry.
7	(30)	Difficult and time consuming to obtain necessary leases, licenses and permits.
8	(29)	Ineffective measures to control theft of product.
9	(26)	Lack of available coastal property which is affordable and appropriate for aquaculture development.
10	(24)	Poor understanding of private property rights.
10	(24)	Lack of coordination between local, state and federal agencies.
12	(21)	Lack of technical research which is practical to the aquaculturist.
13	(19)	Excessive costs associated with raising phytoplankton for food.
14	(17)	Lack of affordable investment capital.
15	(15)	Health department regulations are too burdensome and inappropriate for some types of aquaculture.
15	(15)	Too few sources of specialized seed.
17	(10)	Lack of insurance to cover losses due to storm damage.
17	(10)	Lack of understanding by the investment community of the benefits and risks associated with different types of aquaculture operations.
17	(10)	Lack of low cost equipment to clean, sort and grade products.
20	(9)	Difficulty in entering into market and competing with the large companies.
20	(9)	Difficulty in obtaining and meeting hiring regulations for teens and temporary help.
22	(8)	Lack of veterinary services and pathological laboratories for quick analysis of diseases.
22	(8)	Lack of affordable manufactured feed.
24	(4)	Difficulty in obtaining scientific and technical information.
25	(3)	Other constraint(s) not listed above.
26	(1)	Lack of approved antibiotics and other disease preventative drugs.
27	(0)	Excessive state taxes on labor and property.

DISCUSSION

The survey, in addition to ranking constraints, identified some constraints which had not previously been considered. Some of these are; "lack of insurance to cover losses due to storm damage and equipment failure", "difficulty in obtaining and meeting hiring regulations for teens and temporary help", and "excessive state taxes on labor and property"(the highest ranking constraint in the state of Washington). The third ranking constraint identified for the state of Washington was, "other constraints not listed". This most often reflected a concern over potential losses of product by the aquaculturist to the Indians resulting from specific rights and treaties granted to Indians to protect the Indians' traditional fishing requirements. These constraints will need to be investigated further to determine their potential impact on Virginia aquaculture development.

As expected, the rankings differ from state to state. Many of the constraints identified in Virginia rank much differently from the National, California, Connecticut, and Washington constraints. The highest ranking constraint in Virginia, "antiquated laws and regulations designed to manage the natural resources which are inappropriate for aquaculture" does not even rank in the top ten constraints for California, Connecticut, or Washington. Most of the Virginia respondents specifically mentioned the prohibition against the use of the hydraulic escalator dredge as an inappropriate law which is the single most important impediment to aquaculture development in the Commonwealth. The number four constraint in Virginia, " lack of rights to the water column and surface" also ranked very low in the National, California, Connecticut, and Washington constraint lists. These comparisons provide an indication of the effectiveness of specific aquaculture legislation which exists in California, Connecticut, and Washington.

The results identified some similar rankings between the states. The number one constraint in the national list, "Poor or variable water quality", also ranks within the top ten constraints for California, Connecticut, Virginia, and Washington. This constraint was expected to rank high, but unfortunately, due to increasing stress within the coastal zone, it is one of the most difficult and expensive constraints to remedy. Three other constraints which consistently ranked high were; "Difficult and time consuming to obtain necessary leases, licenses and permits", "Lack of available coastal property which is affordable and appropriate for aquaculture development", and "Lack of coordination between local, state and federal agencies". These constraints are all related in that, they reflect problems associated with multiple use and multiple jurisdiction within the coastal zone.

Five constraints which consistently ranked low in the survey were; "lack of veterinary services and pathological laboratories for quick analysis of diseases", "lack of approved antibiotics and other disease preventative drugs", "lack of affordable manufactured feed", "difficulty in obtaining scientific and technical information", and "difficulty in obtaining and meeting hiring regulations for teens and temporary help". The

low rankings obtained for these five constraints suggest that the removal or mitigation of these constraints might not be necessary for the development of clam and oyster aquaculture. However, the fact that they were identified in the first portion of the survey would indicate that these constraints may need to be removed as the industry develops or as other species begin to be cultured. Therefore, the mitigation of these constraints will be considered but, will likely receive a lower priority during the preparation of recommendations to enhance aquaculture development in Virginia.

Interesting results were obtained for the the constraint, "excessive costs associated with predator and disease control". Virginia and Connecticut both ranked this constraint very high, however, California and Washington gave this constraint a low ranking. These rankings likely reflect the impact and the concern with the presence of the blue crab, a major predator on juvenile clams, and the devastating oyster diseases Haplosporidium nelsoni "MSX", and Perkinsus Marinus "Dermo" on the East Coast.

The results of this survey are being further analyzed and comparisons are being made between the constraints and existing state legislation, to judge the effectiveness of certain legislation to remove or mitigate aquaculture constraints. Once these studies are completed, group meetings are planned with Virginia aquaculturists, representatives from state and federal regulatory agencies, and special interest groups to cooperatively develop recommendations for plans and legislation to enhance aquaculture development in Virginia. The results of this survey and the subsequent study of other states' aquaculture legislation should provide important information for the development of recommendations in these group meetings.

A problem experienced during the survey was the small number of questionnaires completed and returned. Quite a few questionnaires were returned undelivered. These facilities likely either went out of business or moved since the publication of the National Aquaculture Directory. Another problem related to poor returns is associated with persons listed in the National Aquaculture Directory who are not true aquaculturists. In some states, a number of people have obtained state aquaculture licenses and leases for various reasons yet they only harvest a small number of oysters and clams from the wild. Unfortunately, because these people have obtained aquaculture licenses and/or leases, their names appear in the directory. Recently, a revised version of the National Aquaculture Directory has been published. Hopefully this version may eliminate some of the aforementioned problems. Other sources which may be able to provide names of aquaculturists are the various state aquaculture organizations and regional Sea Grant extension offices. A combination of these resources may help to provide a good mailing list and improve questionnaire returns for future surveys.

This study is being conducted to provide important preliminary information in the formation of recommendations to enhance aquaculture development in Virginia and is primarily focused on oyster and clam

aquaculture in the Commonwealth. For these reasons many of the results of this survey may not be directly applicable to other states and other aquaculture species. However, the technique described in this paper is quite variable and is recommended to persons considering the development of aquaculture plans for other states and other species. It has facilitated the identification of many actual and potential constraints to Virginia aquaculture development and it has provided an insight into the effectiveness of other states' programs and initiatives to remove or mitigate aquaculture constraints.

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ROBERT NEIKIRK

BARTLETT THEBERGE

BIOGRAPHICAL SKETCHES

Robert Neikirk is a Marine Resource Management student at the School of Marine Science of the College of William and Mary where he is pursuing a Master of Arts degree. He received his Bachelor of Science degree in Marine Biology from the University of North Carolina at Wilmington. Mr. Neikirk is currently developing his thesis, "An Investigation of Impediments to Commercial Aquaculture Development in Virginia".

Bartlett Theberge is a Professor of Marine Science at the Virginia Institute of Marine Science, School of Marine Science of The College of William and Mary. He also serves as Chairman of the Department of Ocean and Coastal Law and Coordinator of the Marine Resource Management Education Program. Mr. Theberge received his J.D. from the Marshall-Wythe School of Law of The College of William and Mary and an LL.M in Ocean and Coastal Law from the University of Miami.

LEGAL CONSTRAINTS TO MARINE AQUACULTURE AT THE STATE LEVEL - THE VIRGINIA EXAMPLE

Bartlett Theberge*
Robert C. Neikirk**

Abstract

This paper will identify major legislative constraints to the development of aquaculture in Virginia and recommend legislative changes to alleviate those constraints. The implementation of these recommendations along with the continued research and development in aquaculture related fields should aid in promoting a viable commercial aquaculture industry in Virginia and may serve as a model for other states.

Introduction

The policy of the United States government, as expressed in the National Aquaculture Act, is to promote the development of aquaculture. The achievement of this policy faces many impediments such as economic constraints, technological barriers, and legal and policy constraints.

This paper will identify major legislative constraints to the development of aquaculture in Virginia and recommend legislative changes to alleviate those constraints.

The Status of Traditional Fisheries and the Potential of Aquaculture

The Commonwealth of Virginia encompasses a large portion of the Chesapeake Bay and Eastern Shore, blessing Virginia with abundant coastal waters and productive fisheries resources. The Commonwealth, traditionally a national leader in fisheries production, harvested over fifty million dollars worth of fish and shellfish from Virginia waters in 1985. Some traditional Virginia fisheries have experienced significant declines in recent years. Virginia was once the nation's leading oyster producer but, with the advent of the oyster disease "MSX" and the closures of shellfish grounds due to pollution, the oyster industry has experienced a steady

*Professor and Chairman, Department of Ocean and Coastal Law, Virginia Institute of Marine Science, School of Marine Science, The College of William and Mary.

**Student Research Assistant and Masters Candidate, Virginia Institute of Marine Science, School of Marine Science, The College of William and Mary.

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decline since the early 1960's. As a result of this decline in oyster production, Virginia oyster shucking houses must import oysters from out of state in order to maintain enough volume to remain in business. Virginia presently harvests approximately 700,000 bushels of oysters per year, while Virginia shucking houses handle over three million bushels annually. Another fishery in Virginia which has experienced a recent decline in production and a significant loss of its share of the national market is the hard clam industry. It is estimated that Virginia's hard clam production is near the point of maximum sustainable yield, yet, economic studies conducted at the Virginia Institute of Marine Science indicate that the hard clam market can absorb significant increases in production. Both oysters and the hard clam appear to be potential candidates for market expansion through the development of commercial aquaculture in Virginia.

Virginia controls a large portion of the Chesapeake Bay and Eastern Shore, where vast areas are potentially suitable for aquaculture development. Many areas of the Eastern Shore are particularly well suited for aquaculture. The extensive series of shallow, well-protected lagoons along the Eastern Shore are ideal for many forms of aquaculture. The area is comprised mainly of small towns, free of large industry, and many regions are relatively pristine in terms of water quality. In addition, packing houses must now import seafood from out-of-state in order to meet demands and keep their employees working. The Eastern Shore is also near large urban areas such as Richmond, Hampton Roads, Baltimore, and Washington, D.C., where extensive markets could be developed for many aquaculture products, especially luxury seafood items.

The Eastern Shore is also populated by many watermen who typically work a number of different fisheries throughout the year. These watermen may provide the seasonal and often temporary labor necessary to many aquaculture operations, especially during harvesting. Although these watermen are typically involved in traditional fisheries and may be unfamiliar with many aquaculture techniques, their general knowledge of and familiarity with local waters would prove valuable.

Aquaculture operations along Virginia's Eastern Shore would also have access to sound scientific and technical expertise. The Virginia Institute of Marine Science operates an experimental clam aquaculture operation at Wachapreague on the Eastern Shore and has studied many other potential aquaculture species. VIMS is mandated by Virginia law to "consider means by which fisheries resources may be conserved, developed and replenished and to advise the Marine Resources Commission and other agencies and private groups on these matters" (Va. Code Ann., Sec. 28.1-195) and VIMS has a tradition of providing the private sector with scientific information and technical support.

The development of marine aquaculture in Virginia could augment traditional fisheries and generally enhance the state's economy while providing another economic incentive to maintain certain levels of environmental quality. The success or failure of marine aquaculture will

depend on appropriate water quality, a favorable economic climate, a sound technical and scientific support base, and a favorable legal and policy framework.

Major Legal and Policy Impediments

General Legislative Authority

Existing fisheries laws and regulations were developed to manage the natural fisheries of the state and are primarily concerned with traditional harvesting techniques. They have developed in a piecemeal fashion over the years. Specific laws, regulations, and policies were developed as they were needed. The Virginia Marine Resources Commission, the principle agency in charge of marine fisheries management in Virginia, was originally created in 1898 to assist the oyster industry. The VMRC's authority has since been expanded to include all marine fish, shellfish, and other organisms and its jurisdiction extends from the fall line of all tidal rivers to the three-mile limit of the territorial sea. Until recently, the Virginia legislature dominated the management of fisheries and VMRC exercised little management authority itself. In 1984, however, the General Assembly delegated authority to the VMRC to develop fisheries regulations and to prepare management plans. Although this act improved the VMRC's ability to manage traditional fisheries, the VMRC, in the absence of legislation, is not effectively empowered to manage aquaculture in Virginia.

The management of aquaculture has different needs and goals than the management of natural fisheries stocks. Since the products of aquaculture are hatchery reared and do not draw upon the natural stocks, aquaculture law, policy, and regulation does not need to be concerned with maintaining species stock size. Aquaculture management should be mainly concerned with aiding the aquaculturist in achieving a suitable profit margin while maintaining environmental quality and minimizing conflicts with other users of the marine environment. No legislative authority currently exists in Virginia to allow the implementation of such a policy and remove aquaculture from the application of laws and regulations designed for managing traditional fisheries.

Conflicts with Private and Public Water Rights

The potential aquaculturist is faced with a myriad of laws and regulations concerning the uses of both the land and water resources necessary for an aquaculture operation. Aquaculture may involve the use of the bottom, the water column, and the water surface. These uses may bring an aquaculturist into conflict with riparian owners and others using the bottoms, water column, and surface. Many of these conflicts may pertain to rights of navigation, riparian rights, and other public and private rights and may act as constraints to aquaculture development.

Freedom of navigation has traditionally been recognized in state law as well as federal and international law. Although navigation is not an

absolute freedom, navigation rights present barriers to the development of certain types of aquaculture operations. Operations utilizing rafts, pens, trays, and other potential navigational hazards would require state and federal approval. In Virginia, no specific provisions exist in state law for the approval of such aquaculture structures. The Virginia Marine Resources Commission has authority to issue permits for projects which encroach upon the state's subaqueous beds. Yet, it is impossible for aquaculture to involve the surface and water column without technically encroaching on the bottom. In short, the process of obtaining necessary state and federal approvals can be problematic, costly, and time consuming.

There are a number of private and public rights in addition to navigation which may present problems to the development of an aquaculture facility in Virginia. These include a number of riparian rights and the public's guaranteed right to fish, fowl, and catch and take oysters and other shellfish.

In Virginia, the riparian land owner, a land owner whose property borders on a body of water, is afforded a number of statutory and common law rights. Although these rights are not absolute and without limitation, an aquaculture operation could potentially infringe upon these rights and lead to conflicts. A riparian owner has a right to a reasonably unaltered flow of water past his property, an unobstructed view of the waters in front of his property, the right to have property designated as a bathing ground, the right to ingress and egress, the right to wharf out, and the right to open a channel to reach waters of a navigable depth. In addition, in Virginia, riparian owners of 205 feet or more of shore front property may be assigned up to one-half acre of oyster grounds (Title 28.1, Va. Code Ann. contains statutory, riparian rights). Obviously, the exercise of riparian rights and the operation of an aquaculture facility could potentially conflict. There would, of course, be no conflicts arising from riparian rights if the aquaculturist is the riparian owner and his operation does not interfere with an adjacent riparian owner.

The Virginia Code states, "All the beds of the bays, rivers, creeks, and the shores of the sea within the jurisdiction of the Commonwealth, and not conveyed by special grant or compact according to law, shall continue and remain the property of the Commonwealth of Virginia, and may be used as a common by all the people of the state for the purpose of fishing and fowling, and the taking and catching of oysters and other shellfish, subject to the provisions of Title 28.1 and any future laws that may be passed by the General Assembly." The very nature of an aquaculture operation must prohibit the public from fishing within confines of the operation. The public's right to fish, fowl, and take shellfish should not pose any major problems to clam and oyster aquaculture operations which utilize only the leased bottoms because rights guaranteed the leaseholder by the Virginia Code (Va. Code Ann. Sec. 28.1-109(15) and 28.1-110). The state guarantees the absolute right of the lessee of oyster and clam grounds to use and occupy such ground for the term of the lease subject to riparian rights and the right of fishing in waters above the bottom. Further, no person

exercising such fishing rights shall use any device which is fixed to the bottom, or which, in any way, interferes with such lessee's rights or damages the bottoms or the oysters or clams planted thereon. Problems may arise, however, with operations which utilize pens and cages using the water column and/or the surface, since the water column and surface cannot presently be leased under Virginia law. As a result, the public might have under current Virginia law, a right to fish and take shellfish from within the confines of the aquaculture facility, seriously impacting daily operations and harvesting.

Leasing Impediments

Virginia law provides for leasing subaqueous bottoms for purposes as diverse as mining and oyster planting. Oyster planting, however, is the dominant form of leasing and state law has evolved to meet the needs of the traditional oyster industry not the needs of modern aquaculture.

Article XI, Section 3 of the Constitution of Virginia states:

> The natural oyster beds, rocks, and shoals in the waters of the Commonwealth shall not be leased, rented, or sold but shall be held in trust for the benefit of the people of the Commonwealth subject to such regulations and restrictions as the General Assembly may prescribe, but the General Assembly may, from time to time, define and determine such natural beds, rocks, or shoals by surveys or otherwise.

Although natural oyster grounds may not be leased, rented, or sold under the Virginia Constitution, the Virginia Code does convey authority to the Virginia Marine Resources Commission to lease other state bottoms which have not already been assigned or reserved for other projects, for the purpose of planting or propagating oysters and clams (Va. Code Ann. Sec. 28.1-109, 28.1-110).

Under Title 28.1 of the Virginia Code, each oyster lease is for a duration of ten years. The lease, however, will be renewed afterwards if such grounds have been planted with shellfish or clutch. No single assignment can be for more than 250 acres in areas outside of the Chesapeake Bay and no single lessee may control or operate more than 3,000 acres in areas outside of the Bay. Within the Bay, 5,000 acres may be controlled and operated by a single lessee and there is no limit to the size of any single tract. All the regulations governing oyster leases are also applicable to clams.

Nearly all forms of aquaculture will require some type of leasing in Virginia's waters resources. Some operations will only require the leasing of subaqueous bottoms such as the bottom culture of hard clams. Other forms of aquaculture which utilize pens, rafts, and trays in the water column will require some form of leasing of the water column and/or surface. Although the Virginia Code provides for the leasing of the state's subaqueous

bottoms, there are no provisions for the leasing of the water column or surface. This is unfortunate. Some forms of aquaculture, however, can best be performed in a three dimensional system. Some two dimensional systems such as the bottom culture of hard clams, are more efficient if they are expanded to utilize the entire water column through the use of rafts and trays. Florida and Hawaii both have leasing structures which allow for the leasing of the water column. A similar leasing structure for Virginia, providing for the leasing of the water column, would enhance the potential for aquacultural development in Virginia.

Under the present Virginia Law, the leaseholder is not protected from projects to improve navigation or projects to remove road construction materials from streams, rivers, and waterways. Virginia case law suggests that a leaseholder may not be protected from damages as a result of municipal pollution (Darling v. City of Newport News). More adequate forms of protection must be assured to the potential aquaculture developer. If a leasing structure designed specifically for aquaculture were to be developed, longer term leases, exclusive rights in the leased areas, and leasing of the water column and surface would enhance the potential for significant aquacultural development in Virginia.

Harvesting Restrictions

Legal constraints affecting aquacultural development in Virginia are numerous and vary according to the type, location and the species involved in the operation. Many impediments stem from the applicability of laws and regulations designed to address traditional fish harvesting rather than aquaculture. For example, regulations governing the traditional harvest of a particular species may also restrict how, when and/or at what size the aquaculturist may harvest his product. These restrictions can create serious economic and marketing problems for the operations. For example, in order to obtain the widest profit margin, it may be most beneficial to harvest a particular species at a smaller size than is allowed with the natural stocks. Unfortunately, in many instances where size restrictions are invoked, it may take the aquaculturist a season or longer for the product to reach the minimum legal harvesting size imposed upon traditional fisheries. Obviously, to wait an entire season and subject a marketable product to disease and predation would be a poor economic practice.

Restrictions on harvest may also diminish the aquaculturists's profits in other ways. Often, buyers are willing to pay a premium price for a constant supply of a given product. Many types of aquacultural operations can feasibly supply this demand, but seasonal restrictions may prohibit this year round harvesting ability. The application of seasonal and size restrictions may make the difference between economic feasibility and infeasibility of an operation.

Gear restrictions are generally invoked as a management technique to protect the natural stocks of a given species from overfishing. Such restrictions on harvesting gear may also hinder aquaculture development.

For example, the hydraulic dredge is the most efficient means of harvesting clams, but its use is prohibited in Virginia. The aquaculturist must harvest his product in the most efficient way possible in order to maximize profits. In order to enhance aquaculture development, any harvesting technique should be allowed for use in an aquaculture facility as long as such methods do not significantly harm the natural environment or the natural fisheries stocks.

Water Quality Conflicts

A constant supply of high quality water is essential to an aquaculture operation. The nature of many types of aquaculture operations make them very susceptible to damages resulting from the pollution of the waters supplying or housing the operation. Unfortunately, for the aquaculture industry, water resources are shared by many user groups including industry, shipping, recreation, and local government. Any number of these uses may result in the degradation of water quality impacting aquaculture. Under Virginia case law, aquaculturists appear particularly susceptible to damages resulting from municipal pollution (Darling v. City of Newport News).

An aquaculture facility may, itself, degrade water quality. Depending on the type of operation, effluents from aquaculture systems may contain high levels of organic pollutants such as, nitrates and phosphates, as well as, suspended solids and any chemicals and antibotics used during the rearing of the species. The effect of these pollutants is dependent upon their concentration as well as the nature of the receiving waters. As a result, aquaculture effluent is subject to regulation. The cost of monitoring and maintaining effluent standards can be high and is considered by some operators to be a major constraint.

Residency Restrictions

The State of Virginia has a long-standing policy of attracting outside business investments to the state, yet throughout most of Virginia's history, the Virginia Code has contained laws which discourage non-residents of the state from participating in the state's fishing industries. One law of particular interest to aquaculture prohibits non-residents from taking fish or shellfish from the waters of the state for market or profit or holding oyster grounds or planting shellfish in any waters of the state (Va. Code Ann. Sec. 28.1-122). Another law prohibits citizens of Virginia from being involved with any non-resident taking, catching, or planting shellfish in any of the waters of the state (Va. Code Ann. Sec. 28.1-123). Although the constitutionality of these residency requirements has often been challenged throughout the history of their existence, they still present a barrier to the growth of aquaculture in Virginia. It is likely that residency requirements important to aquaculture will continue to be challenged in the future and the outcome of these decisions may have a significant impact on the development of aquaculture in Virginia.

The aquaculture industry is a high-risk industry, despite continued development of technology in the field. In addition, most aquaculture operations require a high initial capital investment. It is important to the state's development of aquaculture, as in other business ventures, that any potential investors, regardless of their residency, be allowed to enter into the industry. The aquaculture industry in Virginia, and the state, would benefit from a successful venture regardless of operator residency.

Recommendations

1. Establish a separate section of the Virginia Code dealing specifically with aquaculture.

Existing fisheries laws and regulations were developed to meet the needs of traditional natural fisheries. Aquaculture has different needs and goals. A new section of the state code could address those needs largely without disturbing the status of the laws evolved to address traditional fisheries and other rights.

2. Minimize conflicts between aquaculture and competing private and public water rights.

Aquaculture as a competing use is a latecomer. Traditional private and public water rights are well established and were created at a time when aquaculture was non-existent. A better balance of water rights between traditional uses (navigation, riparianism, etc.) and aquaculture, a new use, must be found.

3. Revise the current leasing regime to better reflect the needs of modern aquaculture.

The existing leasing structure was created primarily for the benefit of the traditional oyster industry. It is focused upon bottom leasing and is not designed to best meet the needs of modern aquaculture. The leasing program may better meet the needs of aquaculture by addressing the water column and surface as well as the bottoms. Aquaculture, as well as traditional shellfish culture should be statutorily recognized as an objective in leasing. A balance between the amount of acreage subject to traditional leasing and aquaculture leasing may be necessary. The terms of aquaculture leases may differ substantially from those of traditional leases.

4. Exempt aquaculture from harvesting restrictions designed for traditional fisheries.

Existing laws, designed to address traditional fisheries harvesting wild stocks, restrict the aquaculturist in how, when, and at what size he may harvest his product. Such restrictions impose serious economic and marketing problems upon aquaculture. For aquaculture to be successful,

the product must be harvested efficiently, at an economically optimum size, and when market conditions are most favorable.

5. Establish a better system of protective rights for aquaculture in terms of water quality.

Water quality is essential to aquaculture. Under Virginia case law, aquaculture appears particularly vulnerable to damages from municipal discharges. In order to enhance aquaculture in Virginia, better protection from pollution must be available.

6. Remove barriers to non-resident participation in aquaculture.

Virginia has a general policy of attracting new industries and investment from other states. This policy does not, however, apply to the aquaculture industry. Non-resident participation and investment in aquaculture is discouraged by several state statutes designed to address and protect traditional fisheries from non-resident participation. Aquaculture remains a high-risk venture that can ill afford restricted investment.

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Biographies

Bartlett Theberge and Robert C. Neikirk

Bartlett Theberge is a Professor of Marine Science at the Virginia Institute of Marine Science, School of Marine Science of The College of William and Mary. He also serves as Chairman of the Department of Ocean and Coastal Law and Coordinator of the Marine Resource Management Education Program. Mr. Theberge received his J.D. from the Marshall-Wythe School of Law of The College of William and Mary and an LL.M. in Ocean and Coastal Law from the University of Miami.

Robert C. Neikirk is a Marine Resource Management student at the School of Marine Science of The College of William and Mary where he is pursuing a Master of Arts degree. He received his Bachelor of Science degree in Marine Biology from the University of North Carolina at Wilmington. Mr. Neikirk is currently developing his thesis, "An Investigation of Impediments to Commercial Aquaculture Development in Virginia."

TAX LAW CHANGES, THE 1986 FEDERAL TAX ACT, AND IMPLICATIONS FOR THE FISHING INDUSTRY

Norman K. Bender[1]

ABSTRACT

Federal tax policies can assist in creating economic conditions conducive for developing harvesting, processing and marketing facilities necessary for full utilization of the country's fisheries resources. These policies need to be developed in concert with fisheries management policies and be designed to provide a continuous source of protein from the sea as well as to maximize employment opportunities in coastal regions.

Current federal tax law changes are designed to close or reduce some tax credits and deductions, resulting in contributions to reducing the federal budget deficit. They do not appear to address concerns related to fisheries development goals on regional or national levels. It is important to evaluate changes in tax laws more thoroughly than just whether a fishing firm's tax bill is larger or smaller than under previous tax laws.

INTRODUCTION

The United States fishing industry is currently faced with the challenge of providing the nation with opportunities resulting from changes in national and international laws regarding fisheries resources, technological advances in harvesting and processing techniques and marketing opportunities resulting from an increased awareness of the nutritional value of seafood.

Federal tax policies can assist in creating those economic conditions conducive for development of facilities necessary for the fullest utilization of the country's fisheries resources. Tax policies should be developed in accordance with fishery management policies and be designed to help provide both a continuous source of protein from the sea and maximum employment opportunities in coastal regions.

A tax program, if designed correctly, will encourage economic development by creating job opportunities which also result in additional federal and state revenues from taxes on the additional employment and production in the fishing industry.

[1]Program Leader, Sea Grant Marine Advisory Program, Cooperative Extension Service, University of Connecticut, Groton, Connecticut 06340.

Federal and state tax policies can have major influences upon fishermen's decisions regarding capital investments for vessels, gear and shoreside facilities. It is important for the fishing industry to understand the financial implications of tax policies for harvesting, processing and marketing operations.

A major factor influencing the impacts of tax policies is that the fishing industry is actually made up of many "separate" fisheries, each with its own supply and demand characteristics. There are harvestors, processors and marketing firms that cross-over among these separate fisheries, thus providing additional complex relationships that influence the impacts of alternative tax policies.

This paper will first look at broad tax policy goals that can affect the fishing industry. Alternative approaches to generating revenues will be briefly discussed followed by a review of current fishery-related federal tax laws. Finally, tax policy goals will be recommended that can be used when evaluating current and future tax laws on local, state and federal levels.

OVERVIEW OF TAX POLICY

Taxes serve several important roles with three key ones:

"(1) to impact the organization and efficiency of economic activity
(2) to redistribute income and wealth among members of society, and
(3) to raise revenue to pay for government activities." (Hughes, 1986)

Hughes also identified how public taxation policies affect the private sector.

"Taxes affect economic activity in the private sector in two fundamental ways:

1. Theytransfer resources from private individuals and firms to the government, reducing net income available to the private sector to spend or save while increasing the funds available for government spending or investment;

2. They change relative prices of different factors of production and different commodities. (Institute for Contemporary Studies)." (Hughes, 1986)

Tax policies on all government levels (federal, state, county, municipal and special districts) will reflect one or more of the three basic roles served by tax programs. I would expect most taxpayers to identify revenue generation as the major role of federal tax policies in the United States. However, it is common for federal tax policies to incorporate the goals of revenue generation, equity and resource allocation in different degrees as the composition of the Executive and Congressional branches changes over time.

There are numerous taxes that are applied to the people and firms that comprise the fishing industry. The most common include: income taxes (personal and corporate), sales taxes, estate taxes, property taxes and employment taxes.

This paper will focus upon federal tax laws that affect commercial fishing operations. Changes in federal tax laws since the Tax Reform Act of 1981 have been heavily influenced by the Reagan Administration's policies of reducing the tax burdens of the business sector and those people in the highest income categories. This has been achieved largely through the inclusion of the accelerated cost recovery system into the depreciation rules, expansion of tax credits for business purposes, lowering the top marginal tax rate from 70 percent to 50 percent and lowering of other federal income tax rates. (Toder, 1986)

The reduction in effective tax burdens of the wealthy and the business sector has combined with the huge increases in military expenditures to create a situation unique in United States history. One major result was that the 1981-86 period saw the total federal debt double compared to the total debt occurring previous to the Reagan Administration. One of the major tasks faced by the federal government (now involving the Executive, Legislative and Judicial branches) is how to reduce the $200 billion plus budget deficits without throwing the economy into a deep recession.

Since 1981, federal tax acts have produced some tightening of tax credits and deductions for businesses. (Toder, 1986) These minor revisions in the tax codes probably have had little impacts upon fishery-related capital expenditures since 1981.

RECENT FISHERY-RELATED TAX ISSUES

There were only a few changes in federal tax laws affecting the commercial fishing industry in early 1986. This reflected the attention given to proposed tax bills promoted as major overhauls of the federal codes which resulted in the Tax Reform Act of 1986.

Tax Record Keeping Requirements - There has been a repeal of the contemporaneous record keeping rule which had required taxpayers to keep a diary, log or journal, etc., that would substantiate deductions and credits taken for listed property such as automobiles, trucks, boats, etc., used as a means of transportation.

Current tax records needed are part of the "General Record Keeping Requirements" which require fishermen to maintain adequate records that substantiate their statement for travel away from home. The Fishing Tax Guide states that "Records which are written at or near the time the expenses are incurred will be more credible than oral statements or written records reconstructed much later." It also states that for tax years after December 31, 1985, more stringent substantiation requirements will be in place. (Internal Revenue Service, Rev. Oct., 1986) The Congress first passed the contemporaneous record keeping rule in 1984 (to go into effect in 1985) and then voted to repeal it as a result of a loud outcry from those affected by its provisions.

Federal Unemployment Act Exemption (FUTA) - Public Law 99-272 provides an exemption from FUTA tax liabilities for certain fishing boat crew members and is retroactive for wages paid after 1980. (Internal Revenue Service, Notice 771, May, 1986) The question of FUTA liability for owners of certain commercial fishing boats and vessels has been around for several years. Bills that would make permanent an exemption from paying FUTA taxes were introduced into the Congress since the early 1980s.

The new public law establishes those employment categories which are exempt from FUTA taxes. It also explains how to recover taxes paid FUTA accounts since January 1, 1981. The exemption applies to services performed by fishing boat crewmembers who are paid only by crewshares (a share of the boat's catch or a share of the proceeds from the boat's catch). The fishing "boat's normal operating crew must have fewer than 10 members." (Internal Revenue Service, Notice 771, May, 1986). This provision indicates that owners of fishing boats that normally have 10 or more crewmembers are liable for FUTA taxes for the entire crew. Owners are also responsible for FUTA taxes on crewmembers' paid wages or salaries regardless of normal crew size. Fishing boat owners should use IRS Form 843 (Claim) when filing for a refund of FUTA taxes already paid to the Federal government. This can be used going back to FUTA taxes paid from January 1, 1981, to the present time.

Many fishing boats carry fewer than 10 crewmembers and few, if any, crewmembers are paid wages or salaries. Therefore, the exemption from the FUTA tax liability will probably apply to the overwhelming majority of fishing boats along the Atlantic coast of the United States and many boats along the Gulf coast.

The winners in this issue clearly are those boat owners who no longer are responsible for paying federal unemployment taxes which provide federal unemployment coverage for crewmembers. The losers are those crewmembers who are now denied this coverage.

What is interesting is that several years ago some fishermen working as crewmembers began to support their being covered by unemployment compensation laws. Trade newspapers indicated support in North Carolina and Maine. It appears that these fishermen were in rural coastal areas where a lack of alternative employment opportunities meant that a loss of work in the fishing industry resulted in extremely tough times.

MAJOR FEDERAL TAX CHANGES RESULTING FROM THE TAX REFORM ACT OF 1986

The 1986 tax act will affect the fishing industry in a variety of ways. The net effects of the 1986 law will only become evident as the combined effects of numerous tax changes are calculated by fishermen and tax preparers. Following are examples of key tax law changes as discussed in Explanation of Tax Reform Act of 1986. (Univ. of Vermont, 1986).

Individual Tax Rates: The number of tax rates will be reduced to five for 1987 ranging from 11 percent to 38.5 percent. Also, starting in 1988 there will be only two rates, 15 percent and 28 percent. Starting in 1988 an additional five percent tax will be added to the 28 percent rate creating an effective 33 percent rate for certain high income taxpayers. This affects

fishermen operating as sole proprietors or partnerships; that is, not doing business as a corporation.

Corporate Tax Rates: Corporations will see a reduction in the number of tax rates from five to three with rates of 15, 25, and 34 percent. The top tax rate has dropped from 46 to 34 percent which is designed to increase after-tax income of businesses operating as corporations.

There is an additional tax of five percent on taxable income above $100,000 with a maximum additional tax liability of $11,750.

Investment Tax Credit: The regular investment tax credit of ten percent has been repealed for property placed in service after December 31, 1985. However, if on that date a fisherman had a binding written contract for the acquisition, construction or reconstruction of qualifying depreciable property, the investment tax is still available for the property contained within the contract. There are rules regarding when such transitional property must be placed in service in order to qualify for the investment tax credit.

Rules remain in effect for the recapture of investment credit, which is adding some of the credit back into a fisherman's tax, on the early disposition of property. An outright sale of property is an example of a disposition.

The investment tax credit has been a major credit used to reduce tax bills of fishing firms (sole proprietorships, partnerships and corporations).

Income Averaging: Individuals are unable to use income averaging when calculating income tax bills after 1986. This is a major loss to fishermen since annual fishing income can fluctuate widely from year to year. The impact of repealing income averaging should be higher tax bills than would occur if individuals were able to use this method of calculating taxable income.

Depreciation and the Accelerated Cost Recovery System (ACRS): Modifications have been made to ACRS which will have impacts upon depreciation allowances for fishing boats, equipment and gear. The modified ACRS rules provide for cars and light general purpose trucks to be included in the five-year property class while fishing boats are classified as seven-year property. Traps and nets can be depreciated as seven-year property or expensed in the year they are purchased.

The expensing election allows for a maximum $10,000 expensing deduction. There is a dollar limitation on expensing of qualified property when the cost exceeds $200,000.

Capital Gains: New rules treat all capital gains (short- and long-term) as ordinary income. The tax rate on capital gains is held to 28 percent under the new tax act for individuals (sole proprietors and partnerships). Corporations will have capital gains taxed at the corporation's tax rate, with a maximum rate of 34 percent.

Hobby Expenses: The IRS requires that activity presumably engaged in for profit show a net profit in three tax years out of a period of five consecutive tax years. If this rule is not met then expenses in excess of income cannot be listed as a business loss.

Additional Items: Individuals can still deduct home mortgage interest, state and local income taxes, and state and local property taxes. However, state and local sales taxes cannot be deducted starting in 1987.

POTENTIAL IMPACTS OF THE 1986 ACT UPON THE FISHING INDUSTRY

There are numerous potential effects resulting from the provisions of the 1986 Tax Reform Act. The reduced tax rates would appear to reduce tax liabilities when in reality they may be more than offset by the elimination of income averaging, investment tax credit, repeal of the deduction of state and local sales taxes, and the change in the treatment of long-term capital gains.

In addition to affecting owner/operators of fishing vessels and shoreside facilities, tax changes may influence the behavior of outside investors. Those considering investing in a fishing business (on the water or shore sides), yet are not directly involved in operating it may reconsider as they analyze the impact of the new law upon their overall profit situations.

Outside investors may be particularly influenced by the lengthening of depreciation schedules (reducing the quick write-offs of some depreciable property), the elimination of the capital gains deduction and the investment tax credit. A reduction in tax shelters may discourage outside investors from purchasing fishing vessels, resulting in somewhat less harvesting pressures on fish stocks and a potentially slight upward movement in dockside prices received by fishermen.

TAX POLICY CONSIDERATIONS

Numerous factors need to be taken into account when reviewing alternative tax policies relevant to developing U.S. fisheries. Consideration of these factors can provide a comprehensive picture of alternative policy objectives useful to government planners, legislators and the fishing industry.

First of all, the U.S. fishing industry is not a single industry, but instead, consists of many separate industries, each with its own supply and demand curves which may react differently to government tax incentive, policies. There is a need for tax programs to be coordinated with fisheries' management plans being implemented on the state and federal levels. Without proper coordination development policies could encourage additional harvesting and processing capacity in fisheries that are being overexploited relative to optimum yield.

Realistic tax policies require:

Current and Historical Economic Data - Economic data should cover annual landings (dollar value and pound/bushel measurements), number and

types of harvesting units, dockside and support infrastructure, processing units and marketing systems. Alternative employment opportunities should be surveyed: this becomes crucial when establishing economic goals discussed below. Another set of economic statistics needed for policy formulation is the distribution of income among commercial fishermen. Much of these data bases may be established from statistics already available while additional research may be needed to fill in the data gaps in other areas.

Looking at several regional fisheries will illustrate the variety of situations faced by commercial fishermen. Both Long Island (N.Y.) baymen and Chesapeake Bay watermen harvest shellfish. Yet the Long Island bayman has greater alternative employment opportunities available on land than does fellow shellfishermen living in isolated villages on Maryland's eastern shore. A reduction in fisheries-related employment would cause a longer term unemployment problem in Maryland than on Long Island. This would also occur in the most isolated rural coastal communities throughout the U.S.

Adequate data bases need to be developed on the regional (offshore fishing) and state (coastal fishing) levels to tie in with the development of comprehensive fisheries tax policies. Only with adequate data can policies be developed that take into account the variety of situations faced by different fisheries.

Economic Goals for Specific Fisheries - There is a need to establish development goals/objectives for specific fisheries before the impacts of alternative tax programs can be evaluated. Tax programs should be viewed as one method of promoting development of harvesting, processing and marketing operations. A combination of tax incentives, direct loan and loan guarantee programs, economic development grants and education and training programs could produce the desired level of fishery development.

It is important to emphasize that an understanding of the different sectors (harvesting, processing and marketing) of the fishing industry and the various economic strata within each sector is crucial when formulating and implementing fisheries development policies. Experience with existing programs offered through the Small Business Administration, National Marine Fisheries Service, Farm Credit Service and other agencies shows that a small percentage of commercial fishermen take advantage of financial assistance programs available through these agencies.

While financial assistance and tax management programs may be available to all fishermen, actual practice may result in the more educated or financially secure fishermen taking advantage of them thus creating a highly concentrated industry. A situation could develop where there is a relatively small percentage of wealthy fishermen existing alongside a much larger percentage of marginal fishermen unable to break out of this highly concentrated economic structure.

SUMMARY

Fishery development programs (including tax policies) should be considered for all sectors of the industry including: harvesting units, dock facilities, processing facilities, and marketing operations. Development

programs should also deal with: development of underutilized species, fisheries cooperatives, fishermen's credit unions, joint fishing ventures, safety programs, aquaculture, and training and education programs.

Federal fisheries tax policies should tie into development efforts to:

1. Provide realistic integrated economic development goals for specific fishing industries regarding the production of seafood for protein and industrial products.

2. Monitor regional and state economic data needed in evaluation of development programs.

3. Ensure that fishery programs are implemented in an equitable manner to prevent economic concentration in the fishing industry which can create a large pool of marginally employed fishermen resulting in large scale coastal unemployment or underemployment.

Changes in federal tax codes can be evaluated regarding their impacts upon an individual fisherman's or fishing firm's tax bills. A broader approach to fishery-related tax programs can help evaluate how specific tax policies can assist in achieving the continuing development of the fishing industry in accordance with broader objectives involving fishery resource conservation and management, economic development and social policy.

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DOCKOMINIUMS

Robert I. Reis
Professor of Law

Director
New York Sea Grant
Law Program

State University of New York
School of Law
Amherst Campus
Amherst, New York 14220

DOCKOMINIUMS*

I. Introduction**

Dockominiums are marinas, slips, or waterfront developments. They are new forms of marina development and ownership using condominium or cooperative forms of ownership. Slips are sold as individual units with shared rights created in common areas, such as the parking lot, walkways, breakwalls, and other structures. The designation of a marina development as a "dockominium" does not connote any specific legal structure. The term dockominium is a popular concept, not a legal construct. It refers generically to the creation of some form of individual ownership interest in slips and common interests in the entire marina structure.

The historic pattern of private marina development has been for private individuals, partnerships or corporations to be the entities which purchase and develop the land, as well as construct and manage the marina. Conventional investments in marinas contemplate the generation of capital and debt financing for a long term stream of income. The nature of the marina's investment is such that many inherent risks are involved including damage or destruction of waterfront structures, operating expenses, risks of seasonal demand, short and long term obsolescence and compliance with government regulations. The profit margins have historically been low compared with the inherent risks in management of marinas.

Marinas have historically been the focal point of the recreational and commercial marine industry. This marina industry includes commercial and recreational fishing, power boating, sailing, charter and cruiseboat operations. It is a multi-billion dollar segment of the national economy and plays a significant role in the economies of many coastal states. In some communities, marina and fisheries operations constitute the leading economic activity.[1]

The marina infrastructure has three major elements. These are: commercial marinas, private yacht clubs and public marinas. Commercial marinas offer their services to the general public and are operated for profit. In New York, for example, approximately two thirds of all available berthings traditionally have been supplied by commercial marinas. The remaining third of berthings have been supplied by private yacht clubs and public marinas.[2]

Skyrocketing waterfront land values are creating pressures to increase returns on investments in waterfront properties. The commercial marina industry is affected by these pressures. The number of recreational boats is growing. Marina operators, however, are finding it difficult to meet the rising demand for marina facilities. Property and construction costs, a shortage of available land, and restrictive land use controls are inhibiting expansion and new construction. High land values have increased taxes. Compliance with environmental regulations for dredging or expansion are time consuming and expensive. Despite high demand and occupancy rates for marinas, the rising costs of operation have eroded their profit margins.[3]

The traditional pattern of the commercial marina industry has been to rent slips to boatowners. As has been noted, this results in a relatively low profit margin. Marina operators derive additional income through marine related sales and service to slip customers. Conventional marina operations require high capital outlays for land and construction costs and involve significant maintenance and operating expenditures.[4]

Marginally profitable marina ventures are prime candidates for acquisition by other ventures competing for waterfront lands. A marina operator caught between high costs and low profits may opt to sell its property to developers. The developer converts the land to a more profitable use. Residential housing development, condominium developments, and non-marine retail commercial developments offer high rates of return on relatively short term investments.[5]

Dockominium development of the outshore offers one of the highest rates of return on investment along the waterfront. This significant economic aspect of dockominium development results from the change in sources of development capital, long term ownership and management and the timing and form of profit for the developer.

The individual purchaser and not the developer bears the long term capital outlay and debt servicing. The individual purchasers also have the expenses of management as well as bearing the risks inherent in the operation. The developer has converted its position to permit it to realize a profit on a short term basis, generally over a period of eighteen months. If the balance of risks and profit margins in marina development and ownership change by this alteration in capital, debt, risk and management dramatically, then competition for waterfront lands

and lands outshore of the uplands can potentially change current use patterns along the nations waterfronts, particularly in or near urban areas.[6]

Several dockominium developments in the west and the northeast have demonstrated both the marketability of the concept and the enormous profit margins which can be realized by the sale of individual units. In Essex Connecticut, the potential profit from the dockominium form of development is so large, that one landowner announced her intention to convert a new upland condominium to a parking lot to support the development of a large marina for sale as dockominium interests.

It is easy to see why a developer would prefer a form of organization which offers the opportunity to make a short term profit by turning the development over within a period of eighteen months to two years. The developer can assess the market demand for slips and marinas, can project the cost of money necessary to develop the project, and can minimize the risks associated with conventional marina management.

On the other hand, the purchaser must have a reason to make the investment in slip and common facility ownership. Why would an individual slip renter want to become a slip owner?

First, ownership is the basis for security of tenure. Good docking facilities, particularly those in choice locations are in scare supply. Increasing taxes, the cost of short term money and demand force the price of slip rentals upward. Boat owners have no assurance that they will be able to return to their slips in the next season.

Second, ownership involves control over the quality of services as well as the costs associated with them.

Third, ownership of the individual slip as well as membership in the association generally implies that there will be some form of control over others allowed to join, as well as over their behavior while members.

Fourth, ownership means that if there is an appreciation in value of the individual ownership unit, the holder of that interest will be able to make a profit from its sale. There is little likelihood along a finite waterfront that the individual slip will decrease in value. If ownership of conventional onshore real property interests is any indication, these

interests should be expected to increase dramatically even over a short term.

Fifth, several tax advantages accrue to the ownership of real property interests including deduction of real property taxes and interest on the underlying mortgage. Many larger vessels are classified as second or recreational homes and as such the entire interest may qualify for like treatment for tax purposes.

The purpose of this paper is to present a four fold overview of the issues inherent in the dockominium phenomena. First, what is the competitive posture of dockominium development. Second, what are some of the issues associated with the use of the condominium form of ownership for development and long term management. Specifically, those issues associated with whether slips and interests in marina facilities qualify for condominium ownership under state enabling legislation. Third, whether the riparian or littoral interest in the outshore permits development of marinas and the creation of individual unit interests. Fourth, selected issues affecting use and ownership of interests in the outshore over land under water which may be in either private or public ownership.

II. Economic and Use Pressure

It is axiomatic that there is a limited or finite shoreline and waterfront area. In or near urban concentrations, the value of shoreline and waterfront lands has always brought a premium for both the aesthetic as well as the economic use characteristics of the land for transportation and fisheries.

The increase in aesthetic or recreationally demand for waterfront land - that is, demand which is based on housing, recreation, or related services - has increased dramatically as both populations and non-productive wealth has increased.

Competition along the waterfront has generally been for upland parcels. Although there are a limited number of instances where there have been controversies involving outshore areas for ingress and egress, waterfront controversies generally center upon these upland uses.

Most observers would postulate that competition for waterfront land follows a simple economic model. That is to say,

as uses are challenged by changing patterns of transportation, recreation, housing, and other waterfront uses, such as manufacturing and storage, new uses which have a higher economic value, or return, displace those which have lost their economic position or aesthetic attractiveness.

To the extent there are available waterfront lands, prices do not increase disproportionate to the utility value of the lands. To the extent these lands have disappeared from the market, pricing will reflect both the scarcity factor and the cost of removing whatever structures or business entities are already on a site.

Shoreline uses have historically reflected their water dependence. The economic value of many of these uses was marginal, i.e., fisheries, recreational uses, marinas, slips, docks and rights of way. Economic uses do not necessarily reflect social and ecological values. Nor, does the market place necessarily justify or reflect the incremental effects of land and water regulations which impact on development and development choices. These uses are such that they are easy prey to developers of single and multi-unit housing, large scale commercial marina facilities for either commercial or recreational purposes, or other such uses. On Long Island, New York, the fierce competition for waterfront lands is demonstrated by the fact that the price for waterfront homes has been doubling every two years. Long Island is not atypical. The shoreline of many northeastern and some southern states would demonstrate a like pattern.[7]

What is the prevailing competitive pattern? Small and medium sized marinas have consistently been water economically viable waterfront uses. This same land is sought after by larger marinas, commercial fisheries, boatyards, beachfront uses, residential uses, recreational uses, hotels, and, of course, ecological uses.[8]

Marina facilities provide most of the required services for the boating public. They have historically been concentrated along the shoreline and are in direct competition with numerous other activities which also require water frontage. This competitive model exists throughout the coastal zone comprised of the seashores of the Great Lakes, Atlantic, Pacific and Gulf waters.

The pattern of displacement is reflected in the musings of

marina operators. They state the simple fact that because of intense competition for their lands, they can realize more income from interest paid on the sale price of their holdings than by the operation of the marina itself.[9] Likewise, many owners of water related, if not ostensibly dependent uses have found that proximity to the waterfront has a price. When confronted with the value the waterfront land would bring on sale, they have moved their businesses inland to less expensive lands.[10] Traditional uses thus associated with the waterfront are in threat of being displaced. Many ship yards and boat operations are now located inland. The waterfront has been turned over to single and multi-family housing. The change in character of the waterfront has not only economic, but long range environmental, aesthetic, cultural consequences.

Even the first rung of uses displacing the traditional waterfront mileu are themselves the subject of intense economic development and potential displacement. Smaller single family residences are giving way to larger and more expensive single units. Single units are giving way to multi-family and townhouse condominium developments. Likewise, housing and commercial uses once made of the waterfront are now to be challenged by "outshore" uses which can generate returns in significant multiples of that which can be realized by onshore development.[11]

What are **outshore** uses and why are outshore developments portending an economic significance threatening to alter the onshore or upland land use configuration? A typical waterfront development would be a marina. The marina would have a number of slips for short or long term rental, or for the marina operators own use. The income profile of the marina would reflect the initial capital for land acquisition and development, as well as the balance sheet on operating costs and expenses against rentals and other items of income. Marina operations are expensive, fraught with risk from weather, storms, recreational patterns and other preferences, wear, tear and aging. The rate of return over the useful life of the investment makes most marina operations marginal. Only a select few realizes a significant return on capital from the actual operation of the marina itself.[12] Where is the greatest promise of return for the marina operator? Generally in the future appreciation in the value of the land itself. If current operations cover expenses with a fair rate of return, then present holding costs against future profits are acceptable. The return on investment by development of the outshore has historical limitations in the structured of investment and management.

Over the past five years, upland developers and marinas operators have discovered that long term return by capitalization of income in marina operations and the rate of return on conventional upland development can be altered by changing the form of ownership of slips and marina facilities. These units are developed for or converted for sale as individual or condominium interests. Instead of the marina operator owning the upland and the slips, the slips are sold to individuals. The common upland and dock facilities are conveyed to a condominium association or cooperative corporation. By conveying interests to the individual owner, the marina operator or developer has altered the nature of the investment and nature of investment return.[13]

What are some of the key differences in dockominium over conventional marina operators:

First, the developer avoids the long term capitalization of income. The developer looks for a complete sale of the project within eighteen to twenty-four months.

Second, the developer avoids more long term uncertainties and risks inherent where market and management factors affect future investment decisions. The market and intermediate management risks involved in short term sales can be assessed quickly.

These factors are reflected in dramatic rise of dockominium marina developments in urban areas. In Seaford, Long Island, a marina operator is moving a boatyard and related facilities inland and selling the waterfront lands for 400 slips and 60 or more condominiums.[14] In Rye, New York, a developer has proposed to construct a "dockominium" marina, with supporting upland facilities.[15] In Essex Connecticut, the developer of Harboredge has proposed a "dockominium," only to find his neighboring parcel owner proposing to tear her existing condominium development down to build "dockominiums" outshore based on the perceived greater economic return from her investment.[16]

In each of the above instances, the sale of individual slips will be from $18,000.00 to $45,000.00 per slip unit. Based on a simple marina of 100 slips, the gross return on the lesser amount would be one million eight hundred thousand dollars and on the larger amount four million five hundred thousand dollars. The upland need only be large enough to provide parking and whatever

related facilities are necessary to the marina. The land may also be sold for housing, thereby adding to the gross sales figures.

This is the essence of the "dockominium" concept. The term "dockominiums" is not a word with any precise legal meaning or significance. On the other hand, it embodies the notion that development of the outshore, that area outshore from the traditional public. Private boundary line represented by some variation on the high or low water marks, can be more valuable than the development of the upland itself. Another way of phrasing this is by way of example. In most instances, development of the upland for waterfront housing couples upland development with a slip or marina facility. An increment of value in the upland parcel price may be due to the cost and use value of the slip or marina. The object of the purchase and the greater part of the purchase price is reflected in the value of the upland development. The notion of "dockominiums" reverses that process. It is the slip or marina facility which is the object of acquisition and represents the larger portion of the purchase price. The interest acquired is the interest in the outshore area represented by the slip space. The upland interest is often limited to that necessary to legally and physically support the outshore interest.

Two examples of the relationship of upland to outshore development in this context are: (1) Adequate parking spaces and supporting facilities and structures for the use of slips; (2) the retention or creation of the minimal legal interest in the upland necessary to support an interest in the outshore. That interest may be defined as ownership or concurrent ownership of an interest in a parcel of littoral or riparian lands. The necessity of this interest and its form will vary according to state law.

III. Conventional Marina Operations

The historical pattern of private sector marina development has been owner managed small business. The majority of marinas are organized as closely held corporations or proprietorships. Partnerships, while not as numerous as either corporations or proprietorships, are also common in the marina industry.[17]

Marinas tend to be owner managed. Professional managers or combinations of owners and hired managers are the exception to

the rule in the marina industry. Marina corporations are usually small organizations with few shareholders. Stock is usually in the hands of principals, their relatives and friends. Management therefore tends to be ingrown with a lack of independent investor scrutiny.[18]

Until recently the commercial marina industry exhibited fairly stable characteristics. Well established firms dominated the industry. The number of new firms entering the marina business and the number of existing firms becoming inactive were relatively small and tended to cancel each other out.[19]

The services provided by the marina industry cover the full spectrum of the boating public's needs. Technically, there is a distinction between marinas and boatyards. Marinas provide summer berthings, winter storage and related dockside services, whereas boatyards provide repairs and maintenance, launching and hauling. In practice, however, many marina and boatyard facilities provide all as portions of both sets of services. Marine related sales and service and auxiliary businesses such as restaurants or convenience stores often provide further revenues for marina operators.[20]

The primary concern here with the marina function; the use of outshore areas to provide berthing. However, condominium and cooperative marinas offer many options for sponsors to incorporate related services.

Sources of marina financing are debt financing and equity financing. Funding, however, is not always readily available to marine operators or developers. Several factors contribute to the reluctance of lenders and investors to finance marina ventures.

The orientation of the industry towards small business organization is one factor. As with most small businesses, marinas must often rely primarily on the credit worthiness and reputation of their principals as lenders and investors hesitate to base their decisions solely on the quality of the business or development plan itself.[21]

The relative immaturity of the marina industry is another factor. It has experienced most of its growth in the last two decades. Statistics on the financial performance of marinas are lacking. The records which do exist indicate that marinas often fail.[22] This may be in part due to restricted access to capital.

Limited resources may restrain marina entrepreneurs from fully exploiting business opportunities.

Debt financing is the predominant source of capital in the marina industry. Loans may be obtained from banks, savings and loan institutions, commercial credit corporations and private lenders. These loans may be secured by the personal note of the principals in the venture, or a security interest in the income and assets of the business, primarily the land and facilities. In some instances government agencies, such as the Small Business Administration, will provide loan guarantees.[23]

Equity financing may take one of two forms: (1) direct investment of cash, including retained earnings, by the entrepreneur; (2) the sale of an interest in the business to others who then share in the ownership and control of the venture. Direct investment of case or retained earnings by the principal is necessarily limited to those assets. Sale of stock or partnership interests in a marina venture, depends upon a perception of opportunity by investors. These perceptions are based on many of the same factors lenders will consider in reaching loan decision: the experience and financial background of the principals; past and/or projected performance of the marina and its position in the market; and the current assets and liabilities of the business.[24] Stock or partnership offerings may also be subject to government regulation.

Securing debt or equity financing requires the entrepreneur to convince others of the long term viability of the enterprise. Given the relatively low profit margin of most marinas and the lack of statistics on marina business performance marina entrepreneurs face considerable obstacles to creating confidence in their ventures.

Entrepreneural resources for generating capital for small business industry such as the marina industry are limited. Yet costs for marina operations, construction and expansion are rising and creating pressures to increase returns on investments. The success of many marinas may be endangered by rising costs and lack of adequate capital.

Condominium and cooperative marina provide options which can expand access to capital. Investments in condominium or cooperative marina conversions or development offer a higher rate of return than conventional marina operations. Condominium or cooperative marinas are a short term investment, returns are

realized in eighteen months to three years as opposed to long term returns from conventional marina year to year slip rentals. Debt financing through construction loans might also be more readily available, particularly if an offering is highly subscribed.

IV. Change to Condominium and Cooperative Marina Operations

The development of marinas requires the conventional elements of project financing: (a) capital generated by the developer from its own resources and (b) debt financing generated from private sources or lending institutions. The owner operator of a marina is limited to the amount that it might have for equity investment and the long term debt which can be raised based upon the value of the underlying land and improvements and income stream generated by the operation of the facility.

As with any conventional development, capital can be raised by increasing the number of investors in the project. The investors can be given equity interests as partners, by holding their interests in some form of common law tenancy, or by use of the corporate form. The amount of debt, as well as the amount of capital which can be generated by use of these alternative business forms, however, are limited by the promised rates of return on the investment.

The sale of individual units after development to individual owners changes the nature of the return on the investment and also both the short and long term debt characteristics of the enterprise. Upon sale of each of the individual units, the developer would realize a profit from the sale. Each of the purchasers could buy using equity capital, or, as is more likely, if the underlying interest has a recognized set of legal characteristics, it can be used as security for long term debt. Lending institutions will lend based upon this security and the financial profile of the borrower. The enterprise becomes less of a risk to the lender because the lending institution has a large number of individual borrowers, each of whom is personally liable for their individual portion of the long term debt.

The sale of individual slips is a highly marketable concept. The developer can turn its investment around in a short period of time, the purchaser can obtain the advantages of ownership, including the potential appreciation in value of the individual unit.

The condominium form of concurrent property ownership achieved popularity during the early 1960s after many states enacted Condominium Laws to permit such form of ownership.[25] The term condominium does not mean a piece of real property, but instead refers to the form of ownership.[26] The condominium provides a form of ownership in which each owner holds an individual unit (interior space) in fee simple or leasehold. The unit owners share a fee or leasehold interest in all common areas and facilities necessary to the use and enjoyment of the individual units. Common interests are based upon individual percentages as expressed in the condominium declaration.[27]

The declaration is the instrument by which the real property itself is submitted to the provisions of the state enabling legislation.[28] The sponsor or developer submitting the property to the condominium holds title to the entire property before sales are concluded. In each deed for an individual unit, the purchaser receives the interest in the specific unit as well as the percentage of the common area.[29] The fractional or undivided interest in the common elements is the essential characteristic of the condominium scheme of ownership.[30] A condominium association serves as a business management organization and a quasi-governmental regulatory authority.[31] Membership in the association is mandatory for all unit owners.

The cooperative form of ownership involves the creation and conveyance of stock in a cooperative corporation with the individual shareholder being given a proprietary lease to the use of the residential unit, or in the case of a marina, to the individual slip.

A marina operator or developer contemplating converting an existing marina or developing a new facility as a condominium or cooperative must meet many of the same criteria applicable to developers of conventional residential facilities. In some instances, additional burdens are placed on the developer because of the novelty of the project and the detail required in both the declaration and the disclosure statements under state law.

Condominium or cooperative marina offerings may be subject to state, and often federal securities regulation. New York, for example, deems condominiums to be cooperative interests in realty regulated by under its security laws.[32] New York General Business Law section 352-e(1)(a) requires registration of condominium and cooperative offerings with the State Attorney General. The

registered offering plan must "...afford potential investors, purchasers and participants an adequate basis upon which to found their judgment." The New York regulatory scheme requires full disclosure of the details of the transaction.[33] Preparation of an offering plan to meet the detailed requirements of the New York statute and regulations involves a considerable expenditure of time and money for the sponsor. Because of the novelty of the dockominium development, the sponsor will have to ensure that all possible ramnifications of the new form of marina development have been considered and disclosed.

Condominium or cooperative marina offerings may also be subject to federal securities regulation. Generally, residential condominiums and cooperatives are not subject to federal jurisdiction.[34] An offering combining residential apartments and slip space may avoid federal jurisdiction. If slip spaces are offered primarily for the private use of the purchasers, the offering will probably not require federal registration.

Federal registration will be required, however, where the offering is interstate and involves economic benefits to be derived from the managerial efforts of others.[35] The Securities and Exchange Commission has jurisdiction in non-residential condominium developments where a collateral agreement exists for the developer to provide services designed to produce income for the investors.[36]

The Securities and Exchange Commission, however, has exempted offerings of condominium interests which include commercial space used to generate income if the income from such space is used only to offset common area expenses and the operation of such facilities or space is incidental to the project. Likewise, the facilities must not be a primary source of income for the individual owners of the condominium.[37]

Purchase of a condominium marina slip unit offers similar advantages to the ownership of a residential condominium unit. These benefits include: equity, appreciation, voice in management, exclusivity, security of tenure and significant tax advantages.

The purchaser of a condominium slip unit gains an equity interest which may be devised, alienated, or used as security for borrowing. Appreciation due to inflation, general increases in values because of shortages in marina space, or mortgage amortization are realized by the owner.[38]

The condominium association provides for exclusivity. Membership in the association is mandatory on acquisition of title to an individual unit. The association is empowered to levy and collect assessments, to make and enforce rules and regulations affecting the premises, and to make and enforce rules and regulations which permit or deny certain uses of the property.[39] The rules and regulations of the marina may enforce certain conduct and require boats and slips to be maintained in a particular manner. The association may establish a "club" atmosphere.

Ownership of a condominium marina slip unit provides security of tenure. A boatowner is assured of a specific berth for the boating season. The boatowner will be able to predict future outlays, the cost of the slip unit, its financing, maintenance, and common charges.

Tax advantages accrue to the condominium slip unit owner. In New York, for example, each unit and its common interest is taxed as a separate tax parcel allowing deduction of real estate taxes by the owner.[40] The interest may qualify for deduction under the Internal Revenue Code.

The contrasting situation of the slip renter indicates that slip rental does not provide any equity increase. The slip renter is subject to rent increases and cancellation upon expiration of the lease. the lessee of a marina slip has little influence over the management of the marina and bears the entire cost of the marina operator's profit share.

Shareholder lessee's in a cooperative marina are assured a renewal of their lease if they maintain their good standing. After initially purchasing their shares in the cooperative, they pay a periodic assessment, a pro-rata share of the marina's taxes, debt service, capital outlays and operating costs. The absence of a profit share for the marina operator could serve to save the slip holder money.

The cooperative shareholder tenant shares a voice in the management of the marina. Shareholders have a right to vote for the Board of Directors. The corporation holds title to the underlying property. The value of the venture, however, inures to each of the shareholders in the increase in the per share value in the corporation.

One disadvantage to the condominium unit owner and cooperative shareholder would be the interdependence on each of the other members of the association. The slip owner in a condominium may find himself assessed for improvements to the common elements that he does not wish undertaken. Conversely, improvements which the individual owner may desire may not be approved by other unit owners. The conduct and use of the property of each unit holder is limited by the by-laws and rules and regulations of the association. As tenant in common with other unit owners, there may be joint and several liability for torts committed in the common areas.

V. Condominium Enabling Legislation

Are marina facilities appropriate for submission to state condominium enabling legislation? Does a boat slip fall within the statutory definition of "unit" and "property" found in state enabling legislation?

Condominium can exist under common law without the benefit of enabling legislation.[41] It was early recognized however that a statutory basis for condominium ownership would benefit consumers, suppliers and lenders by removing uncertainty as to the legal status of condominium and providing uniform procedures for the formation and conveyance of condominium interests.[42] Today, the fifty states, the District of Columbia, Puerto Rico and the Virgin Islands have enacted condominium enabling legislation.

Our discussion will focus on the New York Condominium Act[43] and Connecticut's condominium enabling legislation.[44] Connecticut's enabling legislation was recently revised. It is a good example of a sophisticated condominium statute, with expansive language which takes into account the wide range of uses and flexibility of the condominium form.

State legislatures initially viewed the condominium primarily as a means to provide for private ownership of apartment units in congested urban areas.[45] "Innovative" uses of the condominium form involved arrangements for offices or stores in commercial properties. These uses: residential apartments, office space and stores, all conceived of either buildings or spaces enclosed within buildings as the subject of condominium ownership. This conception is reflected in the language found in early condominium enabling statutes and still found in some

statutes today.

Thus the definition of a condominium "unit" in the 1963 Connecticut Unit Ownership Act:[46] "'[u]nit' means a part of the property including one or more rooms or enclosed spaces located on one or more floors or a part or parts thereof in a building"....[47] The Act declared that "'property' means and includes the land, the building, all improvements and structures thereon...."[48] This language indicates that the drafters of the statute contemplated condominium units located in buildings.

The New York Condominium Act contains similar language. "'Property' means and includes the land, the building and all other improvements thereon...."[49] "'Unit' means a part of the property intended for any type of use or uses...and may include such appurtenances a garage and other parking space, storage room, balcony, terrace or patio."[50] The listed appurtenances: "garage...storage room, balcony, terrace or patio", are conceived as appurtenant to a part of the property having a more substantial utility.[51] Is a boat slip, essentially a "garage" or storage space for a boat, standing alone and not appurtenant to an apartment or other more substantial unit an appropriate subject for condominium ownership?

How does this affect the ability of a declarant or sponsor to submit marina dock facilities to the enabling legislation. For one thing a dock facility represents horizontal development as contrasted to vertical development in apartment buildings. This should not present a significant problem as the possibilities have been recognized for some time.

Drafters of the first generation condominium enabling legislation faced a question as to whether a unit should be defined as simply a three-dimensional airspace enclosed in a structure or to include the walls of the structure. If the enabling statute reflects the first alternative, then it may be viewed as authorization to convey subdivided interests in airspace alone. This view bolsters an argument that the primary legislative intent behind the enabling statute is to authorize condominium ownership in a broad sense, that the language indicating a building or structure is only incidental. The New York statute leans towards a part-of-the-building approach as distinguished from a space approach. This is not necessarily bar to submitting dock slips as condominium units. Docks themselves provide a structure for referencing space if such "walls" are required by the statute. The New York Act states:

> 'Unit' means a part of the property intended for any type of use or uses...and may include such appurtenances as garage and other parking space, storage room, balcony, terrace and patio.[52]

While this definition indicates the legislature contemplated the use of condominium form in a larger structure there is ample evidence that a dock slip would be a permitted use. The language "intended for any type of use or uses" is expansive. A condominium unit may "...include such appurtenances as a garage and other parking spaces, storage room, balcony, terrace and patio." The phrase "such appurtenances as" indicates the listing is not exclusive. A dock slip is reasonably analogous to a "garage or other parking space". Though it is clear such spaces were envisioned as being appurtenant to a more substantial unit for example an apartment or office, the language does not exclude the possibility of such an appurtenance forming the entire unit, especially in light of the expansive language defining a unit as a part of the property "intended for any use or uses".

Connecticut's revised condominium legislation, the Common Interest Ownership Act of 1983,[53] removes any doubt as to whether a boat slip may constitute a condominium unit. The Act expansively defines "real property":

> 'Real property' means any leasehold or other estate or interest in, over or under land, including structures, fixtures and other improvements and interests that by custom, usage or law pass with a: conveyance of land though not described in the contract of sale or instrument of conveyance. 'Real property' includes parcels with or without upper or lower boundaries, and spaces that may be filled with air or water.[54]

This language defines real property as an abstract concept, a "leasehold or other estate or interest in over or under land..." as opposed to the 1963 statutory definition: "'[p]roperty' means and includes the land, the building, all improvements and structures thereon..." which denotes objects, the thing with respect to which interests exist. [Restatement of property]. The abstract definition found in the 1983 Common Interest Ownership Act is expansive and flexible it allows the full range of possibilities for employing the condominium form of ownership.

The 1983 Connecticut enabling legislation facilities the use of the condominium form in marina development by removing any doubt as to whether marina boat slips are appropriate for submission to the legislation.

VI. Ownership and Use of Land Under Water - Outshore Interests

These questions are directed at the source, nature, and limitations on riparian or littoral rights relative to public and private rights which may exist along the waterfront and in the near outshore area.

The ownership of land abutting a water body generally gives rise to either riparian or littoral rights depending upon the status of the water body. Thus, along non-navigable freshwater rivers or streams in riparian jurisdictions, the rights which attach are generally termed riparian rights which involve use of the water itself. Title to the bed underlying the stream or river generally extends to the center thread and is in the owner of the upland.[55]

To be distinguished from non-navigable or fresh water bodies are the tidal and or navigable water bodies represented by some of the major rivers, Great Lakes, and coastal shoreline areas of the Atlantic, Gulf, and Pacific states. In these jurisdictions, different regimes of public rights to the use of the water for navigation, fisheries, recreational use, ecological purposes, and related matters exist. In many instances, the water bodies themselves are subject to federal and state servitudes for navigational purposes.[56] Likewise, title to the land under water could be in either public or private ownership, depending upon the jurisdiction and whether it recognized private interests in lands under tidal or navigable waters.

In many jurisdictions, the nature of the interest held by the public to lands under water along tidal or navigable water bodies is held in trust for the public. These lands either may not be conveyed without regard to the public interest, or they may not be conveyed at all.

From the earliest colonial times, waterfront lands were necessary to the development and well being of the national, state and local economies. These waterfront areas were necessary to the development of the commerce of the several states as well as the commerce of the nation. Waterfront lands had to be

developed for commercial boating and shipping purposes. This involved structures and channeling in the outshore area over land under water held by the state to ensure access from the upland to navigable waters.

While there is properly a difference in legal terminology between designation of lands as riparian and littoral, riparian referring to lands along rivers and streams and littoral referring to lands bordering on lakes and on tidal waters, these terms are used interchangeably by courts which do not make the necessary distinctions.[57]

Different states make specific determinations involving the ownership of land under water and the rights of private individuals to either acquire ownership of such lands or make use thereof, the basic issues are fairly constant among a sufficient number of states to allow us to formulate a series of inquiries which, when answered, will clarify the extent of a riparian or littoral proprietor's authority to appropriate, utilize and alienate outshore lands.

Who then is a riparian or littoral proprietor, what lands qualify and how are these designations made in the several states? What is the essence of the littoral or riparian right? Generally, this right is defined as a right of access to the navigable portion of the water body.[58] This then poses another series of questions. What does the right of access include? What activities can take place in the outshore? What relation do these activities have to public interest in navigation?

How is the area where development can take place determined? The littoral proprietors rights are to achieve access in front of the upland parcel. This is an ambiguous delineation because outshore boundaries and frontages are rarely described in conveyances of upland deeds. Unless there has been a prior determination of outshore boundaries, rights in the outshore have rarely been of value that they would be designated with any particularity or precision. In some instances, precision may have been obtained by the litigation of prior cases involving boundary conflicts and claims of prescription or adverse possession. In most other situations, the outshore boundary determinations, primarily referring to the lateral boundary extensions, are left to resolution when parties want to use.

Front then refers to activities undertaken within the boundaries of the lateral extension. These are dependent on

whether the extensions in a particular jurisdiction are matters of property (law) or matters of equity. The objective is to assure, whatever the jurisdiction, that each riparian or littoral proprietor has access to navigable waters. The objective is not to assure equality among all shoreline owners as their parcels are themselves not equal.

In those jurisdictions where the designation can be said to be a matter of property law, equitable principles would be applied to make certain that the formal application of the rule does not work an injustice.

In those jurisdictions which appear to approach it from an equitable allocation perspective, while some parity may be implicit, it is not mandatory.

Problems arise because shorelines are not uniform and straight. Other problems arise because upland boundaries, even where shorelines may be straight, do not meet the shoreline at right angles. Therefore, outshore boundary extensions are governed by principles relevant to the shoreline and the outshore characteristics of the area, rather than upland boundaries.

VII. Conclusion

The term "dockominium" represents diverse and flexible forms of marina ownership and development which offer significant economic advantages to developers, investors and consumers. The concept is important because if the opportunities for developer profit are there then these new forms will move quickly to displace existing uses. The potential for high rates of return on investment offered by dockominium development means these forms will have a significant impact on future coastal land use patterns.

This presentation has sought to introduce the areas of inquiry which these new forms of marina development posit. These inquiries involve several separate components. In the first instance, questions concerning the nature of the dockominium concept and economic and ecological competition for waterfront space. In the second instance, questions concerning the use of divided ownership forms - particularly, whether state enabling legislation will operate in the context of non-residential, less than fee interests in the outshore for non-business, recreational uses. These questions are distinguished from whether the

outshore interests are capable of severance or holding in a form other than that traditionally associated with conventional holdings of upland interests with the auxiliary use of the outshore relative to upland ownership. In the third instance, questions concerning whether outshore interests can be owned or used by the private sector to create individual interests capable of supporting "dockominiums."

Footnotes*

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** This paper concentrates on the traditional legal and economic issues inherent in the private development of dockominiums. What is not covered in this paper are the equally compelling and important regulatory issues which include, but are not limited to, land use controls, environmental issues, aesthetic and recreational questions. The purpose of this paper is to introduce the dockominium concept which requires that these complex and important issues be left to future discussion.

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ECONOMIC ANALYSIS FOR RESOLVING DISPUTES BETWEEN COMMERCIAL AND RECREATIONAL FISHERIES

by

Trellis G. Green
and
Edward Nissan
University of Southern Mississippi
Hattiesburg, MS 39401

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ECONOMIC ANALYSIS FOR RESOLVING DISPUTES BETWEEN COMMERCIAL AND RECREATIONAL FISHERIES

Trellis G. Green and Edward Nissan
University of Southern Mississippi

ABSTRACT. The paper outlines an economic model for optimal allocation of fishery resources between rival sectors. Such allocation follows the simple rule that the marginal social net benefits of the two rival activities be equalized. This insures that total benefits for society as a whole are at a maximum. This model is then compared to actual economic analysis used in the ongoing Florida Redfish dispute and a critique offered. It is concluded that the courts, while not following the first best allocational rule, do use a second best criterion that steers fishery resources toward a more efficient distribution. Lack of sufficient sportfishing data is cited as a major hindrance to the use of the first best rule, or a correct use of the second best.

I. INTRODUCTION

Legal conflicts between commercial and recreational sectors in the marine fisheries have exacerbated in the past ten years, heightening the courtroom role of the economist. Society's ever rising demands for fish as (a) commercial seafood and industrial input and as (b) a recreation experience have strained the fishery past safe levels of exploitation. Examples of joint allocational conflict include Salmon in Washington and Oregon, the Abalone in California, and more recently the Redfish in the Gulf of Mexico.

Attempts by commercial fishermen to maintain revenues via increased effort conflict with rival sportfishermen who fish for the same species. Both sectors are bound to catch less fish, and both lose benefits. Economists call this the "technological externality" of the common property fishery without exclusive rights assigned by a sole owner.

Such intersectoral conflicts present a tough challenge for fishery managers who must allocate benefits and costs that flow from the use of the fishery, and for court judges who

often must settle allocational disputes. What criterion is to be used to make a decision regarding which competing use has the highest social value when property rights are ill-defined and intangible sportfishing values cannot be measured in a market?

Economic models may be utilized to quantify the two sets of net economic benefits that lead to highest valued allocation. These models assume that net benefits accruing from commercial and recreational fishing can be assessed and compared. In practice, however, this is a fairly difficult task and is often not done.

The purpose of this paper is the following:

1. Outline a theoretical economic model of optimal social allocation of fishery resources between rival sectors. It will be shown that such allocation follows the simple rule that the marginal social net benefits of the two rival activities must be equalized. This allocation will maximize net societal benefits, subject to existing environmental constraints.

2. Discuss an actual empirical model used in a recent court case to arbitrate a Gulf Redfish dispute. Its effectiveness as a judicial and managerial tool is evaluated by comparing the potential utilization of such a model with its actual use.

II. Economic Analysis

Fishery resources unlike other renewable resources are common property. There are two main consequences:

1. The resource may be subject to depletion. This is true if the resource is commercially valuable.

2. In the event that the government intervenes to conserve the resource by imposing limits on the catch, excess capacity in terms of fishermen and vessels arises.

The problem for government becomes more acute if the fishery is attractive to commercial fisherman as well as sport fishermen. Thus, arbitration may be necessary to determine the levels of harvest allocated to each group. The economic theory applicable to such allocation is the assessment of net economic benefits to each sector, consumer's and producer's surplus.

A common misconception frequently advanced as an obvious economic fact is that commercial fishing should always be favored over recreational fishing. This is because commercial fishing has an economic value which contributes toward investment and employment, aside from its essential role as provider of food.

Recently, arguments have been forwarded in favor of recreational fishing. Here it is assumed that the direct and indirect economic value of fish for recreational purposes are more valuable than its commercial counterpart. Reasons cited are the necessary infrastructures that must be initiated to support recreational activities such as marinas, boats, lodging and travel.

Neither of these arguments is based on sound economic judgment. There are a variety of economic models which may be used. Among these, a model suggested by Bishop and Samples (1980) is utilized. This model is based in principle on biological considerations and its mathematical derivation utilizes the concept of "present value", popularly used in financial management.

First, it is assumed that the fishery is exploited purely for commercial use. The aim is to maximize the economic present value of the available fish population, taking into account the biological growth factor of the fishery. That is commercial harvest should not exceed the natural productivity, or growth rate of the fish population.

Let:

x = size of the fish population,

p = price per pound of fish caught,

$c(x)$ = the cost of catch per pound (a function of population size),

h = fish harvest, and,

$C(x) = p - c(x)$ is the net benefit per pound of fish.

The objective is to maximize the flow of net economic benefits (producer's surplus) given by

$$\pi_1(x,h) = [p - c(x)]h = C(x)h. \qquad (1)$$

The results obtained from the dynamic solution of this model are consistent with prevailing wisdom in that the harvest should approach the maximum yield so long as the size of the fish population exceeds the harvest. The model embodies adequate biological and economic realism to give credibility when a recreational fishing sector is added.

In order to account for the recreational sector, add to the definitions above the following:

g = catch in the recreational fishery,

$j(x)$ = average cost of catching a pound of fish in the recreational fishery,

$r(x)$ = gross benefits per pound of fish caught by recreational anglers, and

$R(x)$ = $r(x) - j(x)$ is the net benefits per pound of recreational catch.

Further, modify equation (1) to include the flow of net economic benefits due to the recreational fishery given by

$$\pi_2(x,g) = [r(x) - j(x)]g = R(x)g. \qquad (2)$$

Then the objective is to maximize the flow of net economic benefits for both commercial and recreational fisheries given by

$$\pi_1(x,h) + \pi_2(x,g) = C(x)h + R(x)g. \qquad (3)$$

The addition of the recreational sector to the commercial sector in the above model requires the present value of the flow of net economic benefits for both commercial and recreational fisheries be maximized jointly. By imposing biological requirements similar to those for the commercial case, the decision rule obtained according to Murray and Scott (1985) is that the net economic benefits are maximized when the two marginal net benefits - commercial and recreational - are equal. In this case, society is indifferent between the two activities. By marginal net benefits, economists mean the extra social benefits attributable to one extra pound of fish landed.

Confusion and controversy arise when in practice attempts are made to explain the term "net benefits." For the commercial fishery, it is the difference between the dockside price per pound of fish harvested and the cost per pound

incurred, multiplied by the total weight of the catch. It is the producer's surplus. The definitions of price and cost by themselves generate conflicting arguments. For instance, in calculating the cost, certain expenses sometimes are excluded such as depreciation, insurance and interest. In other cases, nonmonetary costs such as the value of owner- operator's time and investment are included. Also, the calculation of price is sometimes debated. Some economists argue that regardless of the retail price of a specific fishery, there will be some consumers willing to pay more to obtain it. Thus, in the derivation of the value of a commercial fishery, the price consumers are willing to pay for the product is used instead of the dockside price to arrive at a value of the commercial fishery in its ultimate use.

It is even more complex in the case of assessing net benefits of recreational fishing. Economic theory can provide fairly consistent and credible means of analysis. However, in most situations good economic data on recreational fishing is lacking. McConnell (1985) provides conceptual and empirical techniques to estimate the demand (benefits) for outdoor recreation which are suitable for sportfishing.

The basic approaches may be summarized into three categories, each of which involves nonmarket evaluation: (1) the travel cost method, (2) contingent valuation method, and (3) the household production (hedonic price) method. All three approaches attempt to simulate a true private market for the nonmarket recreational fishing experience.

The travel cost method is an estimate of the value that anglers place on a fishery. The expenses incurred by an individual to consume a recreational activity serve as a surrogate price. Thus, expenses in getting to the fishing site, cost of equipment, cost of room and board may be included in this calculation. The procedure to obtain this information is usually based on surveys conducted for specific sites, either through mail questionnaires or personal interviews on the site. Individual responses thus provide information regarding distance travelled and actual costs of the trip. At times, information may be gathered from the population at large. An important ingredient in the composition of cost is the value of travel and on-site time. The time required for a specific visit may be a major component of the cost for a visitor. Thus, incorrect measurement or exclusion of the time factor may overstate or understate the estimated benefits.

The contingent valuation method is based on the assumption that anglers are able to respond truthfully to hypothetical questions asking them to reveal their willingness to pay (or willingness to be compensated) for access to a particular fishery experience. In this regard, the dollar amount a participant is willing to pay over and above actual expenditures is entered in the evaluation of true worth. For instance, if a sport fisherman actually pays $150 for a fishing experience, he might be asked: "Are you willing to spend another $50 before seeking some other recreational alternative". If the answer is yes, then the gross value of the specific fishing experience is $200. The net benefit, or marginal valuation, equals $50. Note that the $150 is a cost to the angler, not a benefit. It is a measure of economic impact, however, subject to an income multiplier.

The third method of valuation is the household production function approach. It is an intellectually appealing approach, though in practice difficult to apply. The approach requires two stages. First, an individual buys markets inputs, such as equipment, travel and time, required to produce recreation outputs (experience), such as catch and relaxation. In the second stage, maximization of utility subject to the budget constraint yields marginal values for individual outputs of the recreation experience.

As can be seen, the tools available to assess the value of recreation are imperfect. Nevertheless, their use is important in arriving at equitable decisions when conflicts arise among commercial and recreational users of a fishery. The dockside price of a fishery by itself is therefore inappropriate for allocational disputes, as discussed in (Green, 1986). The mechanism upon which prices are set is different for each group.

The remainder of the paper will provide an empirical example of the use of economic theory in arbitrating a Redfish dispute in Florida.

III. The Gulf Redfish Problem

During the 1980's the Redfish (Red Drum), once just another unglamorous marine fish, had quickly evolved into the foremost yuppie table fare of the 1980's. Blackened Redfish, the spicy dish popularized by famous chef Paul Prudhomme, glamourized this lowly fish into a national craze with media hype of the Louisiana Cajun culture. Commercial market fishermen quickly increased effort to fill the gap

between supply and demand, initially concentrating on inshore waters.

This created a problem because Redfish had previously enjoyed immense popularity, primarily among nonmarket recreational anglers who also fish along inshore coastal waters. The Sport Fishing Institute (SFI) reports that recreational saltwater fishing is growing in popularity nationwide. For example, one in four fishermen today fish saltwater compared to only one in six in 1955. The economic importance of recreational marine fishing to the Gulf economy is well documented in (Bell et. al., 1982), (Rockland, 1986), and (Christmas, et. al., 1985). Redfish is one of the more popular recreational species in the Gulf.

As commercial fishermen increasingly exploited inshore stocks of Redfish to meet the phenomenal growth in market demand, rival recreational fishermen experienced drastic declines in success rates. According to (National Marine Fisheries Service 1986), total number and weight of sport caught Redfish has steadily declined in the Gulf since 1982. If totals are converted to a catch per-unit-effort basis, the decline is much more drastic. While sport anglers perceived a deteriorating recreational experience during the 1980's, violent confrontations in Texas and Florida between recreational and commercial sectors pointed to the seriousness of the problem.

There are unsettling biological questions. According to data published in the (Secretarial Fishery Management Plan, 1986), commercial landings have fluctuated widely, in spite of tremendous increases in effort. This is further evidence in support of a depleted fishery. Biologists suggest the age class structure of inshore Redfish to be more juvenile compared to offshore stocks of 5 to 25 year old fish. Some believe that the offshore adult populations serve as critical parent stock needed to sustain younger, inshore stocks, although the precise nature of this relationship is not proven.

As state managed inshore stocks proved inadequate to meet demand, commercial fishermen began moving to federally managed offshore waters to exploit the large schools of adult size Redfish. Some turned to purse seine technology. Hardly a week passed during the mid-1980's when the news media did not run graphic, aireal footage depicting large catches of Redfish trapped in the huge circular nets. Isolated incidents were reported in which tons of dead Redfish were cut from overfilled seines. Headlines every-

where galvanized the public's emotional outcry. Redfish was a national issue.

While all this was happening, there was no clear cut fishery management plan (FMP) in place for Redfish. Yet it was apparent that continued increases in fishing effort might place stress on the previously underexploited stocks, upset the biological inshore - offshore balance, worsen rival sector tensions and reap dire economic consequences.

IV. Intervention in the Redfish Fishery

In August of 1986 federal intervention came in the form of a controversial emergency FMP issued by the Secretary of Commerce, (Secretarial Fishery Management Plan, 1986). This plan focuses on biological stock relationships and over-fishing. It temporarily closes the commercial fishery after the attainment of a limited quota to collect data and conduct research to be used in the preparation of a Gulf Redfish FMP. The emergency FMP is to stay in effect "until such time that a Gulf Council plan is prepared, approved and implemented".

Before the Commerce Department plan, state intervention occurred in courts and legislatures in the states of Texas (1981), Alabama (1985) and Florida (1986). The issue here was "game fish" status for the Redfish, which effectively allocates 100 percent of catch to the recreational sector and prohibits commercial fishing. Economic analysis played a pivotal role in each case.

Economists in the Texas case were able to show a greater economic benefit from recreational fishing relative to commercial, (Matlock, 1982). Before the final Texas House Bill 1000 was signed by the governor on May 19, 1981, the debate shifted from the legislative and executive committees to the judicial branch. Commercial fishermen challenged the constitutionality of the bill on the basis of economic and statistical reliability, but did not sway the court. The economist's concept of net benefits was accepted. However, the net benefits in marginal changes of existing allocations were used rather than finding the priori optimum allocation that would maximize total net benefits for all.

Passage of the Alabama game fish statute on July 23, 1985 paralleled the Texas case, but received much less attention. In the interim Mississippi, Florida and Louisiana prohibited the use of the purse seines. Other Redfish regulations vary widely by state, adding to the confusion.

The most recent game fish debate occurred in Florida during 1986, where to date game fish status is unsettled. This paper will analyze briefly the Florida case, pending any new developments, and critique the use of economic analysis in the decision making process relative to the first best allocation rule in Equation (3).

V. The Florida Redfish Case of 1986

The Florida Marine Fisheries Commission (FMFC) is composed of seven members with jurisdiction for management of Redfish within Florida territorial waters. Their rulings are subject to appeal in state administrative court and final approval is made by the governor. For several years, growing conflicts between recreational and commercial sectors and mounting scientific evidence of stock depletion prompted the FMFC to consider various changes in Redfish policy in 1985. At the time average allocations were about 25% commercial and 75% recreational according to (FMFC, 1986).

The Florida Conservation Association (FCA), Everglades Protection Association (EPA), and the Sport Fishing Institute (SFI) provided leadership for the recreational cause. Commercial interests were represented by the Organized Fishermen of Florida (OFF), the South Atlantic Fisheries Development Foundation and the Southeastern Fisheries Association.

The Florida Redfish fishery was heavily weighted towards the recreational benefit side with an estimated $25.7 million of recreational fishing sales. Of the 1800 commercial Redfish fishermen in Florida, most were shown to catch Redfish only as an incidental species. This was the extent of economic analysis through 1985, and no evidence on the relationship between sportfishing economic impact and catch rates was considered.

One alternative of the FMFC was to permit commercial fishing with long season closures up to four months. The FMFC noted the adverse economic impact that such closure would generate from lost recreational sales because of the disproportionate dollar size of the recreational sector. It was shown that even a small adverse recreational impact could exceed the value of all commercial landings. Still, there was no empirical evidence on the economic relationship between recreation effort and catch.

On September 12, 1985, the FMFC implemented a rule raising the minimum size of Redfish and establishing a maximum size. This ruling was to serve as an initial management plan until an options paper could be drafted in 1986 for a long range plan. The initial ruling was based on biological data in support of the junvenile/offshore stock linkage. Computer models of the Redfish fishery at the University of Miami showed that an increase in size limit from 12 to 22 inches in West Florida would raise pounds landed by 150% and augment juveniles by 120%. A similar move in Texas had already reversed the declining success rates of sport-fishermen. It was felt by a majority of FMFC members that more had to be done to protect the stock, given the size of recreational retail impacts.

VI. Use of Economic Models in the Florida Case

After the 1985 ruling the FMFC began consideration of a comprehensive FMP to allow some "optimum" mix of recreational and commercial fishing. This resulted in the options paper of February 1986 which focused on biological issues of conservation and economic issues of allocation. The FMFC options paper listed the following economic allocational rule:

> "The basis for this kind of allocation must be optimum benefits for all people of the State. Even though the rule may allocate away from one group and give to another net impact on the people as a whole must be positive. Economics is one valid measure of overall benefit to the State."

On March 6, 1986 the FMFC voted 5-2 in favor of game fish status for Redfish in Florida as in Texas and Louisiana. They considered other biological overfishing evidence, costs of enforcing a mixed sector fishery, and the relative unimportance of Florida commercial Redfish landings as percent of total. Economic analysis, however, played the critical role in the Commission's 5-2 ruling in favor of game fish status.

Economic analysis provided by testimony of SFI economists showed that $25 million of additional recreation sales more than offset the loss of only $3.2 million of commercial sales. Inasmuch as sales registers economic impact, no societal net benefit analysis was presented in terms of consumer's and producer's surplus, as indicated in Equation (3). There was no attempt to link changes in sales to

changes in catch rates. According to (SFI, 1986), the commercial fishing economists did not present economic analysis specifically dealing with finfish.

On July 29, 1986 a public hearing was held in lieu of the final Commission vote, which was 6-0 in favor of the game fish status. Economic models were the deciding factor. New evidence was introduced that showed the game fish ruling would increase pounds available to sportfishermen by 58%. An attempt was made to indirectly link this increase to increased retail sales, although no empirical coefficient was presented. On behalf of FCA and SFI, economists for the sport side presented several analyses to prove positive game fish net benefit. Ballpark estimates of consumer's and producer's surplus were given, but the data was taken from a Delaware study not based on Redfish. A more detailed economic impact analysis tailored to Florida Redfish sales was approximated with harvest markup factors, input-output multipliers, and percentages of recreational and commercial Redfish to total species effort, (Rockland, 1986). Rockland concluded that the ratio of sport to commercial retail economic impact attributable to Redfish is between 35.7 and 22.7 to 1. The opposition, led by the Gulf and South Atlantic Fisheries Development Foundation, tried to discredit economic analysis of the sport fishing side, but introduced no new evidence in support of their own case.

During the second week of September 1986, the commercial side challenged the July game fish ruling in Florida administrative court. Economists for the commercial sector presented results from an economic model of the Florida saltwater tourist fishery, (Green, 1984), to show there would be no net benefits from game fish status. The so-called "Green coefficient", taken from his econometric demand model, was purported to measure the percentage change in recreational fishing effort given a percentage change in catch rate measured in pounds. The "Green coefficient" of .123 means that if catch per day increases 100%, fishing days by tourists per trip taken to Florida would increase by 12.3%. The commercial side concluded that this was too small an increase in fishing trips to give significant net benefits. There was some confusion over units of measurement which gave conflicting interpretations. The commercial side assumed it was total or annual catch, when in fact it was pounds per day per trip. The effort unit was interpreted as number of trips when in fact it was days fished per trip. Annual conclusions require an outside estimate of total trips.

The sport fishing side enumerated many of the interpretation problems, but omitted the primary problem that the estimates are behavioral (suggestive of intention), not predictive (suggestive of magnitude). Also overlooked by both sides was the fact that the "Green coefficient" was not Redfish specific at all. Moreover, another demand equation with a coefficient using annual trips and catch was ignored. In spite of the unreliability of the data, on October 6, 1986 the administrative officer overturned the July game fish ruling of the FMFC, concluding it was arbitrary and inequitable. Cited as primary evidence was the very low magnitude of the "Green coefficient", which of course may not be predictive for Redfish species.

Presently the case is being appealed so that some of the evidence can be clarified. The authors are currently working on obtaining more reliable Redfish-specific catch coefficients. One hypothesis to be tested is whether there is a significant difference in magnitude between Redfish and all other species.

VII. Critique of the Economic Models

In no part of the deliberations was an attempt made to allocate the fishery based on the first best societal rule given in Equation (3). This is true even if the data were available because the game fish allocation rule was set a priori, with positive net benefits as the criterion. The efficient rule in Equation (3) requires that an optimum rule be found that would in fact generate not only positive benefits, but would assure that those benefits be at a social maximum for everybody. The fact that there are positive net benefits does not insure they are at a maximum.

This optimum rule may not be a game fish 100%-0% rule. In fact, the only way game fish policy could be the optimum rule is if something in the biological constraint [such as costs of enforcing harvest h in Equation (3)] generates such a large level of costs that the commercial benefit function is zero or negative. Though consideration of such a possibility was made, there was little numerical evidence of how large it is. Another scenario is whether optimum allocation to commercial fishermen is so low that it is not "statistically" different from zero. This seems to be the feeling of some members of the FMFC, and if so would meet the criterion of Equation (3).

What was done? A second best allocation choice was made in which the court sought to investigate whether a pre-selected

change in the existing allocation does generate positive benefits (marginal benefits greater than marginal costs). In economic lingo, this will lead to a more efficient allocation, even if it is not most efficient. If not optimality, it steers society's resources toward optimality.

VIII. Conclusion

Given the lack of good economic data on sport fishing, the Florida Redfish case does attempt to move allocation of resources toward an efficient optimum. In general, static analysis is used to solve a dynamic problem, and a second best allocational rule is chosen over the first best. There is some evidence that the courts fail to recognize the relevance of recreational net benefits, when comparing them with more observable market phenomenon in the commercial sector, creating a bit of a bias.

Perhaps the most important conclusion is the incredible lack of sport fishing data with which to estimate needed catch-effort coefficients and societal net benefits. The "Green coefficient", which was instrumental in the court rulings, was incorrectly applied. Its short run static implication was interpreted in the context of the dynamic long run, and a species - specific number is preferable.

It is imperative that state and federal agencies, as well as interested private foundations, support increased research and data collection. It is true that recreational data is nonmarket oriented and expensive to collect. However, without good data, the Florida case illustrates the reliance by courts on hearsay and concocted approximations of the true facts. The costs to society in misallocated resources are much greater.

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BIOGRAPHY

Dr. Trellis G. Green

Dr. Green is Assistant Professor of Economics at the University of Southern Mississippi, where he conducts research in the field of natural resources. He has publications concerning estimation of recreation demand. Dr. Green received the Ph.D. in 1984 from Florida State University and previously served as research assistant in the Bureau of Business Research. He is an active member of the Association of Environmental and Resource Economists and the American Fisheries Society.

Dr. Edward Nissan

Dr. Nissan is Professor of Economics at the University of Southern Mississippi, and has numerous publications in the field of mathematical statistics, insurance and water resources. He received the Ph.D. from Texas A & M University in 1969 and has a background in both academic and private sectors. Dr. Nissan has received awards for his research activity and is an active member of the Regional Science Association and Southern Economic Association.

LIMITED ENTRY

By Nancy Diamond

Research Assistant
University of Oregon Ocean and Coastal Law Center*
School of Law
Eugene, Oregon 97403
(503) 686-3845

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Abstract

Limited entry regulations attempt to promote fishery resource conservation and economic efficiency in the fishing industry. While not prohibited, limited entry regulations are subject to the privileges and immunities clause, commerce clause, equal protection and due process provisions of the federal constitution. The comprehensive limited entry program established by the state of Alaska provides an opportunity to evaluate these constitutional proscriptions in a practical setting.

Introduction

Limited entry regulation seeks to address problems of excessive fishery resource harvest and economic waste in the fishing industry. These problems arise due to the traditional treatment of fishery resources as common property to which all users have unrestricted access. Under classic common property resource theory, each user competes with every other user to maximize his or her own profit. Since no restraints control access to the resource, increased numbers of participants enter the fishery causing each individual's profit share to decrease. In response, each user invests greater capital and labor in attempts to recoup the lost profit. The inevitable outcome is depleted resources and wasted capital and labor (*See, e.g.*, Christy 1973, Hardin 1968, Gordon 1954).

Even where jurisdictional control over fishery resources regulates foreign participation, national users traditionally retain unlimited access to the resources. Specific limited entry regulation may therefore be necessary to prevent a tragedy of the domestic commons from occurring. Indeed, excessive fishing and capitalization in United States fisheries has fueled recent interest in widespread use of limited entry management. In particular, a recent study sponsored by the National Oceanic and Atmospheric Administration recommended that the Magnuson Fishery Conservation and Management Act be amended to accommodate federal implementation of limited entry programs (NOAA 1986).

No provision of the federal constitution expressly prohibits the restriction of access to common property resources. Several provisions do exist, however, to ensure that limited entry regulation occurs in a nondiscriminatory and fair manner. The state of Alaska implemented a limited entry regulatory program in 1973 under specific legisla-

tion. This program represents the most comprehensive limited entry program currently in use in the United States and thus provides a potential model for limited entry programs elsewhere. Enactment and implementation of the Alaska program has received constant constitutional challenge, giving rise to well developed judicial doctrines concerning limited entry regulation and the constitution. The following will review the Alaska program and the restrictions imposed by the federal constitution on limited entry regulation.

The Alaska Limited Entry Program

The beginning of restrictive regulations in Alaska dates to 1960 when the state imposed the requirement that operators of commercial fishing vessels have gear licenses. AS 16.05.536-.670. In 1968, the state attempted to enact limitations on salmon net gear licenses to restrict their issuance to prior salmon net license holders. Ch. 186, SLA (1968). At the time, however, the state constitution contained a provision stating that "[n]o exclusive right or special privilege of fishery shall be created or authorized in the natural waters of the State." Alaska Const. art. VIII, § 15. As a result, Alaska's first attempt at limited entry legislation was soon declared unconstitutional. Bozanich v. Reetz, 297 F. Supp. 303 (D.C. 1969).

In 1972, state voters approved an amendment to the constitution adding the following sentence to the above provision: "This section does not restrict the power of the state to limit entry into any fishery for purposes of resource conservation, [and] to prevent economic distress among fishermen and those dependent upon them for a livelihood." The current limited entry legislation was enacted the following spring, in March, 1973. AS 16.43.010-.990.

Unlike the 1968 statute that sought to regulate entry into salmon net fisheries only, the 1973 act regulates entry into all Alaska commercial fisheries. Its central regulatory feature requires all owners or operators of commercial fishing gear to have a valid entry permit in order to fish in state waters. The act creates a three member Commercial Fisheries Entry Commission (CFEC) to carry out its provisions. In particular, using statutory guidelines, the CFEC determines the number of permits to issue for each fishery and the methods by which to allocate them.

At the time the statute was enacted, participation in most state fisheries exceeded biologically and economically optimum levels. For these "distressed" fisheries, the statute implemented a two-step limitation plan, first to freeze participation at recent maximum levels, and then to reduce participation to more optimum levels. For non-distressed fisheries, the statute directs the CFEC to determine when to impose entry limitations and the maximum number of permits to issue.

The statute restricted eligibility for initial entry permits to persons who held the appropriate gear license before January 1, 1973. Allocation of initial permits to this group was then based on the degree of hardship each applicant would suffer if excluded from the fishery. Applicants who would suffer significant hardship were guaranteed initial entry permits regardless of whether the fishery were distressed. Those who would suffer only minor hardship were issued permits in order of descending hardship priority. Hardship was defined by the applicant's economic dependence and participation in the fishery before 1973.

The CFEC developed a point system by which to classify and rank initial applicants according to the hardship criteria. For example, the CFEC awarded points for each year of prior fishery participation and awarded additional points for consistent participation. In addition, the CFEC awarded discretionary points for special or unavoidable circumstances such as illness or injury that prevented an otherwise highly dependent applicant from receiving participation points. For each distressed fishery, the CFEC determined the minimum number of points at which significant hardship would be felt and issued permits to all qualifying applicants.

In order to reduce fishery participation, the statute provides for a ten year buy-back program. Under this plan, holders of permits for distressed fisheries can sell their permits, fishing gear, and vessels at fair market value to the CFEC. The CFEC maintains a fund for this plan through fees assessed against annual harvests. Holders of entry permits for nondistressed fisheries are free to sell and otherwise transfer their entry permits with CFEC approval to anyone who can demonstrate present ability to actively participate in the fishery. When the level of participation falls below the designated optimum level for a particular fishery, the CFEC can issue new permits to any applicant with present ability to actively participate in that fishery.

Constitutional Limits

The federal constitution limits the exercise of state regulatory power through the privileges and immunities clause, commerce clause, and the Fourteenth Amendment's equal protection and due process provisions. Individual rights under federal regulatory schemes are protected through the Fifth Amendment's equal protection and due process clauses. (See, e.g. Knight and Lambert 1975, Cameron 1973).

The prohibitions imposed by the privileges and immunities clause and the commerce clause are relatively straight forward and therefore easy to avoid in developing a system of limited entry regulation. The equal protection and due process claims are, however, more subtle and likely to arise no matter how carefully the legislation is drafted. Parallel provisions of state constitutions will provide additional obstacles for limited entry. Because state courts apply differing tests when analyzing their own constitutions, the following discussion will be limited to the federal constitution.

Privileges and Immunities, Commerce Clause Challenges

The privileges and immunities clause prohibits any state regulation that discriminates against nonresidents except where reasonably necessary to eliminate a valid and specific evil. U.S. Const. art. IV, § 2. The commerce clause prohibits a state from placing an undue burden on interstate commerce. U.S. Const. art. I, § 8. Together these provisions will prohibit any state limited entry scheme that clearly discriminates against nonresidents.

In the context of fishery regulation, the classic privileges and immunities clause violation is the assessment of a $2500.00 license fee on nonresident commercial shrimp trawlers compared to $25.00 resident fee, Toomer v. Witsell, 334 U.S. 385 (1948). Even less extreme discrimination such as a $50.00 nonresident commercial fishing license fee compared to a $5.00 resident fee can violate the privileges and immunities clause in the absence of reasonable justification. Mullane v. Anderson, 342 U.S. 415 (1952).

Prior to enacting its current limited entry legislation, Alaska enacted fishery regulations that ran afoul of both the privileges and immunities and the commerce clauses. The statute authorized the closure of salmon fishing to nonresidents for conservation purposes. The state argued that the regulation was necessary to prevent

the economic hardship of residents. The court, however, found this to be the type of discrimination expressly prohibited by the privileges and immunities clause. Moreover, the court noted that interstate commerce includes the interstate movement of fishermen and thus held that the regulation violated the commerce clause as well. Brown v. Anderson, 202 F. Supp. 96 (D.C. 1962). The present Alaska limited entry legislation contains no provisions that discriminate against nonresidents, and no privileges and immunities or commerce clause challenges have been brought against it.

Equal Protection

Limited entry regulations exclude a class of persons from fishery participation. Any classification scheme is vulnerable to equal protection attack.

Where the regulation creates classifications that are based on race, national origin or allegiance, or when a fundamental right is at stake, the court applies a strict scrutiny test to determine if a compelling state interest justifies the classification. Where the classification is not based either on the above suspect classes or on fundamental rights, the court applies a less rigorous rational basis test. Under this test, the court presumes that the legislation's purposes are legitimate, and evaluates whether the classification is reasonable, possesses a rational connection to the statutory purposes, and treats all members within the class alike. (*See, e.g.*, Gunther 1972).

Historically, courts do not treat the availability of employment, here, commercial fishing, as a fundamental right. Williamson v. Lee Optical Co., 348 U.S. 483 (1955). Moreover, the Alaska supreme court has expressly held that the right to an entry permit is not a fundamental right. Isakson v. Rickey, 550 P.2d 359 (Alaska 1976). It is furthermore unlikely that any limited entry regulation will grant access to fishery resources on the basis of a suspect classification. Therefore, equal protection challenges to limited entry programs will most likely invoke a rational basis test.

The first equal protection claim against the Alaska limited entry legislation challenged the January 1, 1973, cut-off date for entry permit application eligibility. The specific challenge arose due to the administrative delay in establishing the limited entry program. Although the statute was enacted in 1973, the CFEC did not accept entry permit applications for the first limited fishery until

December, 1974. During the intervening period, the CFEC continued to issue nonlimited gear licenses. However, because of the January 1, 1973, cut-off date, those participants who first acquired gear licenses in 1973 or 1974 were ineligible to apply.

Legislative history indicated that the 1973 cut-off date was established to avoid a "license rush" by new entrants after the statute's enactment and before the permit system's implementation. Even with the cut-off date, the number of salmon trolling gear licenses issued during the first three months of 1973 exceeded 1972 levels by 113 percent (*see* Owers 1981). In sustaining the equal protection challenge, the supreme court noted that persons who had long since retired from fishing and had no present economic dependence on the fishery could apply for entry permits whereas new entrants who became dependent on the fishery in 1973 and 1974 could not. The court therefore held that the pre-1973 and post-1973 classification of applicants was not rationally related to the act's purpose of segregating hardship applicants. Isakson v. Rickey, 550 P.2d 359 (Alaska 1976).

In response, the CFEC opened the permit application process to all persons who acquired gear licenses before 1975. Significant hardship classification, however, continued on the basis of qualifications existing before 1973. The court noted in Isakson that this classification did adequately address the gear rush problem.

The next major equal protection challenge attacked the gear license requirement itself. This requirement for eligibility was, however, upheld. The court found that in order to obtain a gear license an applicant was required to own or rent fishing gear. A gear licensee would therefore generally have a large financial investment in the fishery. Thus the court held that limiting the pool of applicants to gear licensees was rationally related to statute's goals of conservation, enhancement of economic benefits, and avoidance of unjust discrimination. Comm'l Fisheries Entry Comm'n v. Apokedak, 606 P.2d 1255 (1980).

The final major equal protection challenge tested the limited entry statute's transferability provisions. The claim here was that the statutory provisions allowing for inheritance or fair market value transfer established a classification of permit holders based on wealth or family relation. In particular, persons without sufficient assets to purchase an entry permit or unable to inherit one were excluded from the fishery. In rejecting this argument, the court held that there is no fundamental right in obtaining

a permit through purchase or inheritance and that wealth is not a suspect classification. Therefore, the court applied the rational basis test and found that inheritance and sale of entry permits prevents hardship upon death or injury, advances conservation, increases the number of permits transferred, and eases the administrative burden on the state. Accordingly, the provisions were upheld as rationally related to the varied purposes of the act. State v. Ostrosky, 667 P.2d 1184 (Alaska 1983).

Due Process

Due process challenges against both state and federal regulatory schemes encompass three distinct constitutional claims: procedural due process, substantive due process, and takings without just compensation. Of these three claims, only procedural due process presents a potentially sustainable challenge to limited entry regulation.

The takings argument raises the claim that regulation effects a taking of private property for public use without just compensation. This challenge is, however, essentially without merit in the context of limited entry regulation. Property rights to fishery resources are vested in the state and not individual fishermen. In addition, governmental regulations of fishery resources including complete harvest closures are well recognized as valid. *See, e.g.*, Washington Department of Game v. Puyallup Tribe, 414 U.S. 44 (1973).

Substantive due process concerns the claim that regulation infringes on the freedom of economic enterprise. Because limited entry regulates the opportunity to fish commercially, it is an economic regulation and thus within the purview of substantive due process. However, long ago the Supreme Court declared its disinclination to strike down any economic regulation under the due process clause. Williamson v. Lee Optical Co., 348 U.S. 483 (1955). Challenges on substantive due process grounds are therefore likely to be met with disfavor by the courts.

Procedural due process requires the presence of notice and hearing safeguards when governmental action threatens to deprive an individual of a constitutionally protected right. The Alaska supreme court has recognized that qualified permit applicants who held prior gear licenses have a property interest in the permit application process. Estate of Miner v. Comm'l Fisheries Entry Comm'n, 635 P.2d 827 (Alaska 1981). The court has further characterized the CFEC permit eligibility determination as analogous to an administrative revocation thereby enhancing the importance

of the due process protections. *Id.*; *and see, e.g.*, Mathews v. Eldridge, 424 U.S. 319 (1976); Goldberg v. Kelly, 397 U.S. 254 (1970).

In general, due process requires that notice must be reasonably calculated to apprise interested parties of the pendency of action and to afford an opportunity to present objections. *See, e.g.*, Mullane v. Central Hanover Bank and Trust Co., 339 U.S. 306 (1950). The most common due process claims against the Alaska statute are brought by prior gear licensees who are denied permits because of an untimely permit application. Analysis of the claim generally turns on whether the failure of timely application was caused by inadequate notice and whether the applicant received a sufficient hearing prior to denial.

The CFEC initiated an elaborate informational system to notify prior gear holders of the entry permit program. This included general informational mailings sent in July, 1973 to all prior gear licensees. Application deadlines were widely broadcast through local news media. Additional mailings were sent to all persons who held licenses from 1969-1972 and who made actual harvest deliveries during that period. These latter mailings included a copy of the entry permit regulations and a card that could be used to request permit applications.

The Alaska supreme court found that the CFEC efforts generally satisfied the due process notice requirements. Estate of Miner v. Comm'l Entry Fisheries Comm'n, 635 P.2d 827 (1981). However, CFEC procedures with respect to gear licensees that did not make harvest deliveries during 1969-1972 were inadequate. The CFEC did not mail regulations and permit application request cards to this group on the assumption that these persons would receive insufficient points to qualify for permits. The court held that this group of license holders was entitled to the same notice that other holders received and that failure to send an application request card was constitutionally deficient. Wickersham v. Comm'l Entry Fisheries Comm'n, 680 P.2d 1135 (Alaska 1984).

In administrative revocation procedures, the hearing opportunity must occur prior to the revocation. *See, e.g.*, Goldberg v. Kelly, 397 U.S. 254 (1970). Accordingly, the CFEC sent individualized letters to applicants explaining the number of points each had received and the number required for a significant hardship permit. For applicants who received minor hardship ranking, the letter provided the opportunity to request a hearing. Thus, the hearing was

offered at the classification stage prior to actual permit issuance.

One applicant challenged the hearing opportunity as granted too early in the permit issuance process. The applicant argued that by not offering a hearing when actual permit denial became imminent he was inadequately apprised of the danger he faced in losing his right to fish. In rejecting this argument, the court held that delaying the hearing opportunity by three months would not subject the applicant to a substantially greater risk of erroneous permit denial. The classification notice sufficiently informed the applicant of his potential permit denial. Noden v. Comm'l Entry Fisheries Comm'n, 680 P.2d 493 (1984).

The Alaska supreme court has recognized that the CFEC may properly deny a hearing when no substantial or material issues crucial to the permit determination exist. Estate of Miner, *supra*. In particular, no administrative hearing is necessary where an application is rejected because of lateness apparent on the face of the application that is not contested by the applicant. The CFEC's action on the permit remains, however, subject to judicial review. *Id.*

Conclusion

Although Alaska's experience with limited entry regulation has been molded by circumstances unique to its fishery resources, state courts, and state legislature, it does present a overview of the potential problems any limited entry regulatory system may encounter. Thus, in general, a limited entry scheme can restrict access to fishery resources on the basis of economic and historic dependence. It cannot, however, discriminate against nonresidents nor fail to provide all potential permit holders an equal opportunity to apply for a permit. Finally, qualified permit applicants must be given adequate, probably even individualized, notice and hearing opportunities prior to any limitation action. Certainly, the closing of fishery commons will always raise protest and outcry by those who are excluded. A conscientiously promulgated limited entry system can, however, protect those individuals with the greatest interests at stake.

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* For a copy of this bibliography, contact Andrea G. Coffman, Librarian, Ocean and Coastal Law Center, University of Oregon, School of Law, Eugene, OR 97403.

BIOGRAPHY

Nancy Diamond received a B.A. in Biology from the University of California, Berkeley in 1980, and a M.S. in Fisheries from Humboldt State University, Arcata, California in 1983. Her Master's research focused on population dynamics of the Dungeness crab fishery and she has published several scientific articles on this work. She is currently a third year law student at the University of Oregon where she is specializing in ocean resource law.

Sea Turtle Mediated Negotiations: A New Approach

Jay S. Johnson*

The Kemp's ridley sea turtle is an endangered species whose numbers have dwindled from 40,000 nesting females seen on a single day on one Mexican beach in 1947 to 542 nesting females last year. The turtle breeds only on this one beach. (A few occasional nests may occur elsewhere, but they have never been successfully established.) The Kemp's ridley is the only sea turtle that nests exclusively in the daytime, thus making it particularly susceptible to predation by humans looking for eggs. Unrestricted Mexican egg-taking during the 1940s and 50s is probably responsible for the major share of its population reduction.

A nice correlation exists between the disappearance of this sea turtle and the growth of the Texas brown shrimp fishery. Exactly parallel with the growth of the fishery, turtle populations declined. I don't think, however, that shrimp trawlers can be blamed for the entire problem. Nevertheless, the number of nesting females is now critically low, and if something isn't done, it is likely that the Kemp's ridley will soon become extinct. It may be too late already.

It had been known for some time (although not scientifically documented) that sea turtles are captured frequently by shrimp trawlers and that shrimpers are probably a significant source of turtle mortality. The National Marine Fisheries Service a number of years ago began work on a device that would help prevent capture of sea turtles. We developed a device that would exclude sea turtles very effectively, and began selling it to the industry. It wasn't an attractive device for a shrimper to have to pull, and they didn't use it. We went back to the drawing boards to try to make it more attractive. We incorporated some features that would make shrimping more economical--or so we thought. We made modifications in the device that would exclude finfish as well as turtles. (In some of the fisheries where finfish are not a desired bycatch, we thought that the industry might use the device because it would reduce the weight of non-target species in the bag. That would allow trawl arms to spread more widely for a longer period of time, thus increasing the shrimp catch.) That modification did not work out any better than the first effort, and very few fishermen used the device to improve their economic situation. Some have used it to exclude cannonball jellyfish--probably fewer than 500 vessels during various parts of the season.

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* Assistant General Counsel for Fisheries, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Washington, D.C. 20230. This is an edited transcript of a talk. The views expressed herein do not necessarily reflect those of any government agency.

We called it a "Turtle Excluder Device" or a "Trawl Efficiency Device"--a "TED." Our message probably did have some beneficial effect on turtle populations. Nevertheless, after a number of years of trying, it became apparent last year that the shrimp industry would not voluntarily use this device. Under pressure from the environmental community, we developed regulations that would require its usage. These draft regulations were given to representatives of industry and of the major environmental organizations last August. As a result, they demonstrated a unique coalition in opposition to what the government proposed. Left to our own devices, we came up with a solution that was acceptable to no one.

Thereupon, at the request of industry and the environmentalists, we initiated a mediation process. This was our first entry into the process of negotiated rulemaking. Some other agencies have had experience with this, and a couple of law review articles have been written on it. [L. Susskind & G. MacMahon, "The Theory and Practice of Negotiated Rulemaking," 3 Yale Journal on Regulation 133 (1985); H. Perritt, Jr., "Negotiated Rulemaking Before Federal Agencies: Evaluation of Recommendations by the Administrative Conference of the United States," 74 Georgetown Law Journal 1625 (1986)--ed.] Both the industry and the environmental groups were invited to send representatives. We ended up with the following cast of characters: Bob Jones, who is the head of the Southeastern Fisheries Association (he later elected to have his lawyer, Eldon Greenberg, represent that organization in the negotiations); David Eymard, past president to the Texas Shrimp Association; Tee John Mialjevich, a shrimper and a shrimpers' representative from the Cajun territory of Louisiana; Chuck Lyles, a former government bureaucrat who is currently the executive director of the Louisiana Shrimp Association; and two "real-life" shrimpers, Robin Sanders from South Carolina and Leonard Crosby from Georgia.

On the environmentalist side was Mike Weber, representing the Center for Environmental Education. He brought with him not one but two lawyers, who had prior association with fisheries interests: Vance Hughes, former head of the Justice Department's Wildlife and Natural Resources section, and George Manning, former staff director for the House Merchant Marine and Fisheries Committee. Mike Bean represented the Environmental Defense Fund. Milton Kaufmann, very prominent in the Monitor International Fund for Animals, has a state department background. And finally we had a representative from Greenpeace, Bruce Jaildagian.

We had a series of four meetings starting in New Orleans, proceeding from there to Jekyll Island, Georgia (a very nice place for a vacation). We went to Washington, D.C. for one meeting because the environmentalists complained that their travel budget was being drained. And we had the final meeting down in Houston in December.

I might add that these two groups hired a professional mediator--a labor/management negotiator who had represented some fishing unions. That person--Gary Kotter--is also a member of the North Pacific Fishery Management Council, so he brought with him some understanding of the government's role in fishery regulation. He began the meeting by identifying a single objective everybody could agree to. (I recommend this as the first stage of any mediation or negotiation: determine where you have common ground.)

The first series of meetings were essentially for gathering and presenting data. Without exception, everyone agreed that we should be trying by whatever means possible to prevent the extinction of the Kemp's ridley sea turtle and to prevent other sea turtles from becoming further endangered. Another objective was to minimize adverse affects on the economics of the shrimp industry as much as possible. That was a secondary consideration, however; everyone agreed that we had to do something about the turtle first.

There was a tremendous desire for information. NMFS scientists first presented information on nearly every sea turtle sighting and capture in our records--where it occurred, when it occurred, how it occurred--absolutely any information we had. The first two meetings were devoted to presenting that information and identifying the need for more. And NMFS continued to supply information throughout the negotiation process. The government took no other role, nor did we indicate what we wanted in the way of the regulation--except that we wanted an immediate solution. And for that reason, we just stood back and let the environmentalists and the industry have a go at each other.

The process functioned this way: one side made a proposal and the other side responded, until finally we got to a common meeting ground. At a few stages in the process one side threatened to walk out. They were persuaded by their colleagues to come back to the table, and we were thus able to conclude the agreement.

The agreement was reduced to written form over a couple of weeks; it took a little time to compile all the agreements in one document. It was then submitted to the representatives for ratification. All except one signed it. Mr. Tee John Mialjevich, who represents Concerned Shrimpers of Louisiana, refused, and he is now campaigning against the agreement. We have published the proposed regulation in the Federal Register and are now in the public comment period.

Briefly, the regulations require use of one of four devices that have demonstrated capability to exclude sea turtles. One is the device that NMFS developed in one of several forms, either with or without the finfish excluder mechanism. Another was developed in Cameron, Louisiana with Sea Grant participation. A third was developed in Matagorda, Texas, again with Sea Grant

help. A fourth--the Georgia Jumper--is a modification of a device long used by Georgia shrimpers to exclude jellyballs. The last is a fairly simple device, and it is amazing to me that many Louisiana shrimpers who already own one did not know that they need make no further investment to comply with the regulations.

There is a lot of doubt about whether the devices work in saving turtles, whether turtles are caught in shrimp nets, and whether shrimpers lose or gain shrimp when using the device. All I can say is that the negotiations used the best data that exist. Not that we don't need better data (and we're going to spend more time and money to get it). But it's what we have now and we should go forward with it.

Any of the four approved devices can be used. There is a slightly larger size requirement in the Atlantic than in the Gulf because larger turtles are found there. The regulations are phased in over three years, beginning first with offshore shrimp fisheries in the Gulf and South Atlantic. Beginning July 15 of this year (if the regulations are not modified as a result of all the comment), the offshore fishermen from Texas/Mexico border to Mobile Bay will be required to use TEDs if they are fishing inside the 10-fathom contour. We will not go out with a dipstick and measure how deep the water is. We approximated the 10-fathom contour by a series of geographical coordinates and drew a broken line along the coast. If you are fishing inside that line you need to use the device; if you are outside you won't--even if the water depth is slightly more or slightly less than 10 fathoms.

In the Fort Meyers to Key West fishery of Florida the same kind of requirement exists, up to 10 fathoms. On the East Coast, essentially all the fishing occurs close to shore. As a result, there was no need to place a limit on depth. The groups simply agreed that TEDs will be required in the offshore fishery all the way out to 200 miles. That will be a year-round requirement in the Fort Meyer/Key West area and the Cape Canaveral area. North of Cape Canaveral TEDs will be required from May to September, and in the Texas/Louisiana area from March through November. TEDs will not be required during seasons when very little shrimping occurs. (It is something of an embarrassment that we acceded to Louisiana's request to have December, January, and February not covered, only to find out later that Louisiana Parks and Wildlife apparently closes the fishing season then. We should have had representatives of state governments at the negotiations as well as the federal government to provide us with details on state fishing regulations.)

We also had a problem with representation. The vehemence of the opposition of Mr. Tee John Mialjevich and his membership has been absolutely amazing. I have never seen more people get involved in any fishery issue--ever. He invited us to come down and address an annual convention of shrimpers in Thibodaux, Louisiana, which is an hour and a half southwest of here. We did, and when we arrived in town we found that state police had

marked off all the roads. There were big signs--"TED Meeting"--leading to a civic auditorium that Washington, D.C might be proud to have. The building was filled to capacity, and perhaps 25 percent more for our presentation. We also had public hearings in Louisiana that took place earlier this week.

I can summarize the attitude of Louisiana shrimpers who oppose these regulations thus: (a) We don't catch turtles; (b) TEDs don't work; or (c) we can't make money if we use them. These devices are very inexpensive to purchase. The cheapest one is probably less than $100; the most expensive is about $400. They last a couple of years, so this is not a significant objection. The primary objection is not to the cost of the device, but rather the expected loss of shrimp. The shrimpers are convinced that shrimp catch will be diminished with the devices.

Unfortunately, we have not yet conducted tests in Louisiana waters to demonstrate otherwise. We will be doing so next month, and we will learn one of two things. We may learn that the devices don't work in Louisiana waters, in which case we have a problem. Or we may learn that there really are turtles in Louisiana waters, in which case the shrimpers have a problem. Our data indicate that turtles will be found in Louisiana waters, because we know they occur in offshore waters. We know that the Kemp's ridley eats mostly blue crab, and we know that blue crab are found in internal waters of Louisiana. If crabs are there, we expect the turtles to be found there as well. In other parts of the country where we have better data, we have found turtles in channel waters. We did get a report from one recreational shrimper who caught a turtle in Lake Pontchartrian. It turned out to be a Kemp's ridley. So we have at least one data point from Louisiana waters.

I guess I'll stop here. I suggest that the next time we negotiate a mediated solution, we seek representatives who in fact have the authority to bind their respective organizations. The industry requested this mediation; they sent their representatives. For the most part their representatives signed, but now the industry associations have backed off and have repudiated the agreement. Both Texas Shrimp and Louisiana Associations have withdrawn their support.

I don't think that a protest is the way to stop the government from going forward. Too much momentum exists right now. The regulation probably won't be modified significantly, but the Endangered Species Act might. This is a sensitive issue that happened to arise at a time when the Endangered Species Act was up for reauthorization. I sometimes think that the biggest danger to an endangered species is to have the case for an exception presented while Congress is considering amending the Act. It may well be that Congress will do something to stop these regulations from entering into force. I am not expecting this, but it is certainly a possibility.

MARINE INSURANCE: A LOOK AHEAD

Dennis W. Nixon*

[Abstract] The basis for the current crisis in fishing vessel insurance is discussed, with emphasis on three aspects of the problem: loss prevention programs initiated by both the fishing and insurance industries, changes in the method of compensation for injured fishermen, and the potential for developing self-insurance groups to avoid the commercial underwriting market.

Introduction

Before one can hypothesize about the future of the cost and availability of insurance for commercial fishing vessels, it is important to understand the series of events which have brought us to the current state of affairs. One fact is clear: both hull and protection and indemnity insurance have been a problem for fishermen for over forty years.

The reasons for the problem are complex, but include the following factors:

(1) commercial fishing is a relatively insignificant part of the marine insurance market;
(2) both commercial fishing and marine insurance are cyclical businesses, and very often those cycles are out of sequence;
(3) offshore commercial fishing is a very hazardous business;
(4) the method of compensating injured fishermen is an expensive, anachronistic system designed for merchant seamen; and
(5) the fishing industry is composed of small, widely distributed economic units which are difficult to organize in group self-insurance programs.

Some of those factors can be changed: safety can be improved, the liability system updated; however, the other factors will likely remain the same and continue to present problems for the fishing industry in years to come. There is no magic solution, but effort in the areas which can be changed, coupled with a realistic understanding of the problems which will remain, should produce a better climate for affordable marine insurance.

* Graduate Program in Marine Affairs, University of Rhode Island, Kingston, RI 02881

At present, there are efforts underway in three separate but related areas which would have a positive impact on the problem:

(1) safety and loss prevention programs;
(2) changes in the liability law to make the compensation of injured fishermen more predictable and affordable; and
(3) self-insurance programs owned and managed by commercial fishermen to escape the vagaries of the commercial insurance market.

A summary of each of the areas follows.

Loss Prevention and Vessel Safety

Loss experience is the standard rationale used by insurance companies to justify the high rates charged in the commercial fishing industry. Losses under both the Hull and P&I policies can be classified into three categories:

(1) fraudulent claims;
(2) accidental losses, which could have been prevented with better personnel, training, and/or equipment; and
(3) accidental losses without negligence or fault.

The third category, truly accidental losses, is the reason why there will always be a need for insurance. Even the best crew on the safest of vessels may become a victim of the perils of the seas. However, the combined losses in categories 1 and 2 dwarf the unpreventable losses of category 3 and it is there where most attention has been focused.

Fraudulent losses represent a relatively small percentage of the total, but the negative publicity they create when discovered inevitably increases the already high level of distrust between the fishing and insurance industries. The most egregious abuse of the hull policy occurred several years ago in Gloucester, Massachusetts. In less than two years, thirty five vessels sank in calm weather, over a deep submarine canyon, with friends standing by to pick them up and no serious injuries reported. By the time the various insurance companies discovered the pattern of losses, little could be done and and the hull claims were paid. The vessels remaining found their insurance cancelled and the entire port labelled a bad risk. Since mortgage holders require evidence of hull insurance before the vessel is allowed to leave port, some owners were forced to relocate their vessels to avoid the "Gloucester stigma." Others were ultimately able to obtain hull insurance for the value of the mortgage alone, and become a co-insurer for the balance of the vessel's agreed hull value.

Cases like Gloucester have occurred on a smaller scale around the country. However, insurance companies have learned an expensive and important lesson: if there is any question about the existence of a "moral hazard" in that port or fishery, hull insurance is offered at a percentage of the agreed value, typically 80%, to ensure that the vessel owner has no financial incentive to sink his own vessel.

Fraudulent P & I losses remain common wherever there is a greater incentive to leave the fishery than stay in. Many U.S. fisheries are facing difficult times as a result of declining stocks, competition with imports, and overcapitalization. Faced with an uncertain future, some fishermen decide to "cash out" of the fishery and stage or exaggerate an injury to take advantage of existing liability laws and the P & I policy. The San Diego tuna fleet has seen an increase in the number and magnitude of injuries despite a declining fleet size and the most comprehensive inspection and safety program in the industry.

Vessel owners and insurers have responded in several ways. First, several fleets have begun to use pre-employment physicals to collect base-line information on the health of their crew. Since the owner is required to use due diligence to provide a seaworthy crew as well as vessel, no legal challenges to the program have been attempted. In addition, vessel owners and insurers are now participating in the Commercial Fishing Claims Register of the Marine Index Bureau, which records payments made for injuries and checks names of job applicants to see if they have any physical disability which would prevent them from fulfilling their duties aboard the vessel.

However, the largest category of loss remains the accident which could have been prevented with better personnel, training, and/or equipment. It is here that most attention has been focused in recent years. Since the summer of 1984, a Coast Guard Task Force on fishing vessel safety has been working with the industry to develop a voluntary safety program addressing both vessel standards and crew training. They have produced a series of Navigation and Vessel Inspection Circulars (NAVICS) on fishing vessel design, construction and maintenance which have been reorganized by the International Maritime Organization as a positive contribution to the vessel safety issue. In cooperation with the North Pacific Fishing Vessel Owners Association, a highly acclaimed vessel safety manual for crewmen was produced and has been incorporated in safety programs on all coasts.

Benefits from the programs are already being realized. In one recent case, the crew of a large vessel in the Bering Sea was faced with a serious engine room fire. As graduates of the NPFVOA "Fire School," they had the skill and experience to fight the fire over a 24 hour period and ultimately contain it. They all stated that had it not been for the advanced training, they would have followed their first instincts and abandoned the vessel. The school saved them from a perilous ride in an inflatable life raft and the vessel owner a total loss. Similar programs, often supported by Sea Grant Marine Advisory Service personnel, are being developed around the country.

However, there remains a substantial controversy over the voluntary nature of the current and proposed vessel safety programs. From a safety and navigation viewpoint, the commercial fishing industry is virtually unregulated. Critics of the voluntary program point out that although there may be a general improvement in safety, some boats "never get the message" and continue to operate without even the most fundamental of safeguards.

To address that issue, "minimal" safety equipment would have been required by H.R. 5013 - a bill which linked new safety equipment requirements with changes in the liability law for injured crewmembers. The bill was defeated in August 1986 for reasons that will be discussed in the next section. It was designed to incorporate the substantial advances in survival technology which have occurred since the PFD, or personal flotation device, was first required for all vessels. Advances in electronics and hypothermia protection have substantially increased the odds of survival at sea if the equipment is available and the crew knows how to use it. It would have required exposure suits, life rafts, emergency position indicating radio beacons (EPIRBS), communications equipment, and visual distress signals.

Most of the equipment described above is already aboard offshore fishing vessels and would not have to be purchased to comply with the law. If all of the equipment had to be purchased for a new, four man trawler, the cost would be approximately $8500. If we assume a purchase price for the new trawler of $400,000, the safety equipment required under H.R. 5013 represents only 2% of the purchase price, certainly not a significant financial hardship.

Although H.R. 5013 was defeated, the safety aspects of the bill had many strong supporters. If they do not

become law as the result of a successful safety/liability bill, it seems clear that they will be enacted in the form of an independent safety bill this year.

Changes in the Liability Law

The greatest single factor which has led to the crisis in fishing vessel insurance is the unpredictable nature of the system by which injured fishermen are compensated. Although many other factors have contributed to the problem, none have the central importance of the compensation system itself. The problem of fishing vessel P & I insurance, and the method by which injured fishermen are compensated, has been festering with varying degrees of severity for over thirty years. The first comprehensive analysis of the problem was conducted in 1957. Its authors concluded that the method for compensating injured fishermen

> ... disregards completely the financial, economic, and operational characteristics of the industry. Furthermore, the system in itself is unjust because it is wasteful and slow and it fosters misunderstanding and bitterness between employer and employees. Moreover, it encourages the use of dishonest methods by both parties because court awards often are not in proportion to the employee's injury or need.[1]

Those words ring even more true today. After several years of hearings, reports, comments, and draft bills, H.R. 5013 was reported out of the House Committee on Merchant Marine and Fisheries last summer. It attempted to address the safety issue discussed earlier and the unpredictable personal injury compensation system for fishermen. Supported by a broad consensus of the fishing industry, the new system would have met the three major objectives agreed upon at the outset of the legislative debate:

(1) it must be fair to the fisherman;
(2) it should be affordable to the vessel owner; and
(3) it must make sense to the insurance industry.

Rather than eliminating the present system entirely, the bill preserved the positive aspects of the maintenance and cure system and focused on the major type of abuse: cases of temporary disability in which the award was far

1 W.C. Danforth and C.A. Theodore, Hull Insurance and Protection and Indemnity Insurance of Commercial Fishing Vessels, Special Scientific Report - Fisheries No. 241, U.S. Dept. of the Interior, Fish and Wildlife Service, (1957), p. 111.

in excess of lost wages and medical expenses. The system proposed used a carrot and stick approach. If the vessel owner provided "enhanced" maintenance and cure (medical expenses plus the greater of 80% of daily wages or $30) the right to recover under general maritime law and the Jones Act for temporary injuries was eliminated. An injury would be considered temporary if the seaman

(a) could return to his previous employment;
(b) did not require further medical care; and
(c) did not have a substantial loss of sight or hearing, did not have loss of an appendage, or a permanent disfigurement.

The owner would not be able to take advantage of the system if the injury was caused by his gross negligence or willful misconduct.

The most controversial aspect of the bill was a $500,000 cap (which did not apply to medical expenses) on damages for permanent injury or death cases. It ultimately became the lightning rod which drew the full force of the American Trial Lawyers Association.

Although the average settlement would have been higher using the "enhanced" maintenance and cure system, the total amount paid out under the P & I policy would have been reduced by approximately 35%. This seemingly unlikely result is a function of two factors. First, by eliminating the abusive $400,000 broken arm cases, substantial savings are achieved. Second, since the need for an attorney is eliminated in temporary disability cases, more of the P & I award actually goes to the fisherman, and not to the contingency fee lawyer.

Largely because of that cost-saving feature, some forty members of the American Trial Lawyers Association descended on Capitol Hill several days before the scheduled vote and began a vigorous lobbying campaign. To quote Rep. Gerry Studds (D-MA), principal sponsor of the bill, in his remarks shortly before the vote:

> Although the trial lawyers will tell you they oppose this bill because they are concerned about their potential clients - injured fishermen - the fact is that they are only concerned about themselves. They have no interest in safer fishing vessels, because injuries are good for their business; they have no interest in changing the system for compensating injured fishermen, because they are getting rich off contingency fees exploiting that system, a system that was not designed with fishermen in mind; a system which is slow, inequitable, unpredictable, unworkable, and vague.[2]

2 Congressional Record, Vol. 132, No. 111, August 12, 1986, p. H6028.

When the smoke cleared, the trial lawyers had won. The vote was 181-241. Although everyone who had worked so hard for the bill was terribly discouraged, the fishing industry took comfort in the fact that the Magnuson Act, the very foundation of our contemporary industry, failed its first test in Congress as well. A more thorough lobbying effort and some constructive compromise was the key then just as it must be for the liability bill in 1987. An amended form of the bill, probably without the $500,000 cap, will be introduced later this spring. Although it is always difficult to sustain momentum with an industry as diverse as commercial fishing, there will have to be a strong expression of support from every sector of the industry to defeat the lobbying power of the trial lawyers. If the bill does not pass on its second effort, it will not likely be considered again for many years.

Self-Insurance Programs

One of the few positive outcomes of the crisis in fishing vessel insurance is that some groups of fishermen have become so disgusted with commercial underwriting practices that they have formed their own risk retention groups and have effectively withdrawn from the retail commercial underwriting market. This closely parallels the general trend in liability insurance, with groups of every size and description setting up their own insurance programs.

The movement towards self-insurance has advantages and disadvantages. On the positive side, because of rigorous membership standards, better fishermen and their vessels work together to self-police the program. The result can be a significant savings in premium dollars after the program has become well established. However, there are enough disadvantages that it is unlikely the concept can embrace more than a small percentage of the nation's 33,000 licensed commercial fishing vessels. The single greatest obstacle is to get independent-minded fishermen thinking as a group and willing to pledge the assets necessary to begin a risk sharing program. Typically, the groups that need the most help in insurance have the fewest assets to pledge.

Another factor can be a disadvantage for the fleet as a whole. If the better half of the fleet insures itself, the remainder is left to the commercial market which becomes even less enthusiastic because of the adverse risk selection presented. The boats that can least afford it will be required to pay even more or go without

insurance entirely. This tends to create an "economic limited entry" scenario, with all the social consequences that involves.

For groups that wish to make the step into self-insurance, there are essentially two options: mutual insurance companies (clubs) and reciprocal exchanges (pools). An explanation of each type, along with several examples, follows.

A mutual insurance company is a nonprofit insurance carrier, without capital stock, which is owned by the policyholders; it may be incorporated or unincorporated. There are no stockholders and no capital stock is issued. People become members of the company by purchasing an insurance policy from it. The purpose of the organization is not to make a profit but to provide insurance at low cost. The policyholders also participate in the operations of the company, having voting rights and the power and responsibility to share in the company's financial success or failure.[3]

The mutual policyholder-members elect the board of directors, and the board elects the executive officers who manage the company. The mutual corporation assumes the risks of its policyholder-members. When premiums in a given period are more than adequate to meet losses and expenses, part of the surplus can be returned to the policyholder as "policy dividends." The remainder is used to strengthen the company by building up surplus. Should there be a loss, the policyholders sustain it through lower dividends or assessments (calls), or it is covered by the company through a reduction in surplus. Mutuals often purchase reinsurance as added protection for their members.

Some mutuals are local in nature, providing protection against risks common to one geographic area, while others operate on a regional or even international basis. For example, the Point Club, a mutual organized in Point Judith, Rhode Island, insures just 57 vessels, virtually all from Rhode Island; the Neptune Mutual, of New Bedford, Massachusetts, insures 210 vessels from New Bedford and a few nearby ports. In contrast, the Pacific Coast Fishermen's Mutual insures 1,834 vessels throughout British Columbia. The largest and oldest fishing vessel mutual, Sunderland Marine of Sunderland, England, insures over 4,000 vessels on four continents.

3 Vaughn, E., Fundamentals of Risk and Insurance. (New York: John Wiley & Sons, 1982) p. 587.

Small mutual companies are often assessable. They assess their policyholder for the money needed to pay costs of the losses that occur. If an assessable mutual experiences no losses, then its policyholders will pay nothing, except possibly a small premium to cover expenses. As a mutual grows larger, it often acquires enough surplus to cover the losses it experiences; consequently, large mutual companies are usually non-assessable; the non-assessable policyholders pay only a premium.

Unlike stock companies which can expand to meet the needs of a growing economy or increased demand by issuing additional stock, growth within a mutual must be financed internally through retained earnings and surplus accumulation. Where stock companies can replace any loss of surplus and capacity by access to the capital markets, the mutual industry needs surpluses to accumulate the capital to meet the needs of an expanding economy.

Protection and Indemnity (P&I) Clubs are mutual insurance associations which cover the liabilities of vessel owners towards third parties. A P&I Club is not-for-profit in nature, with member vessel owners sharing the costs of claims and other club expenses. Rates are based on actual claims experience with a small additional margin as a reserve against possible unusually large claims. The cost of Club insurance protection may be significantly lower than the cost of the same or similar protection through the use of commercial insurance policies.

Mutual insurance companies exhibit the following features: (1) any profits or savings which are made go to the policyholders and not to stockholders; (b) policyholders control the mutual; (c) no second party, such as a stockholder, intervenes between the policyholder and possible loss; (d) the policyholders will naturally look after their own interest very carefully allowing a more careful selection of risks and reduction in losses; (e) if small, the mutual runs the danger of being unable to pay losses in case of great disaster; and (f) if the mutual is working in a large territory, the advantage of selection of risks and of careful oversight is partially lost.

A reciprocal exchange is a cooperative insurance organization which may be defined as a group of individuals who combine for the purpose of exchanging

each other's insurance hazards.[4] As in the case of a mutual, the policyholders in a reciprocal are both the insured and the insurer. There are no stockholders. The reciprocal is not incorporated, but is actually an aggregation of individuals, firms and business corporations which exchange insurance on one another.[5] The reciprocal exchange is not in the legal sense a mutual insurer because the individual subscribers assume their liability as individuals, not as a responsibility of the group as a whole. Another basic difference from mutual insurers is that reciprocals are not incorporated as companies,[6] but are formed under separate laws as associations.

Some of the oldest and best known insurance programs for fishermen have been organized as reciprocal exchanges. Recent statutory changes in several states have rekindled interest in this method of organization. Both the West Coast Marine Fund, based in Seattle, and the California Fishermen's Insurance Exchange, based in San Pedro, were organized as reciprocals in the 1940's. Both handle hull risk only. Reciprocals are being discussed and are near formation in Oregon, Alaska, and Texas.

Reciprocals are managed by an attorney-in-fact whose powers are enumerated in a power-of-attorney granted to him by the policyholders.[7] When an insured buys insurance from a reciprocal, he designates the attorney-in-fact as his agent. Part of the premium for insurance is paid to the attorney-in-fact for his services in soliciting business and managing the operations of the reciprocal, and the balance of the premium is credited to the account of the insured. The attorney-in-fact is not personally liable for the payment of claims and is not[8] the insurer. The reciprocal exchange is the insurer. When losses are paid, each

4. Elliot, C., Property and Casualty Insurance, (New York: McGraw Hill, 1960), p. 35.

5. Gordis, P., Property and Casualty Insurance, (New York: Rough, 1975), p. 666.

6. Bickelhaupt, D., General Insurance. (Illinois: Irwin, 1979), p. 115.

7. Alhearn, J., Risk and Insurance. (New York: Appleton, 1969), p. 484.

8. Rejda, G., Principles of Insurance. (Texas: Scott, Foreman, 1982), p. 504.

insureds' account is charged with his proportionate share of the loss. At the end of the year, funds left to the credit of each account may be left in the reciprocal or paid back to each insured as a dividend. As a rule, no dividends are paid to policyholders until their accounts have accumulated a specified reserve which must be left with the reciprocal as long as they remain insured. When they withdraw, such reserves are refunded. Policyholders are individually liable for their separate shares of losses; there is no joint liability as in a mutual.

Reciprocals exhibit the following characteristics: (a) the dual nature of each insured as an insurer; (b) the system of individual accounts; and (c) the use of an attorney-in-fact under the control of an advisory committee.

The decision of whether to use mutual or reciprocal must be based on the individual fleet's characteristics and applicable state law. Either form of organization has the degree of flexibility required to meet the needs of the commercial fishing industry. The groups which successfully pursue a self-insurance program will ultimately enjoy a substantial competitive advantage over those who remain with the commercial insurance market. It is, like fishing, a high-stakes game: both the dangers and rewards are substantial.

Conclusion

This "look ahead" has focused on three aspects of the fishing vessel insurance issue: loss prevention programs within the industry, liability law reform, and the opportunity to develop self-insurance programs. In the past few years, there have been substantial developments in all three areas. Working in concert, progress on all three fronts will bring the fishing industry substantially closer to its goal of available, affordable marine insurance.

Related References

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Biography

Prof. Nixon received his A.B. in history, cum laude, from Xavier University of Ohio in 1972, where he also received the Presidential Scholar Award. He earned his law degree in 1975 at the University of Cincinnati and was admitted to the Rhode Island Bar that same year. He completed the Master of Marine Affairs degree at the University of Rhode Island in 1976 while working at URI's Coastal Resources Center on the state's coastal management program. Shortly thereafter, he accepted the position of Coordinator of the Graduate Marine Affairs Program at URI where he remains today, teaching courses in admiralty, fisheries, and coastal zone law. For the past several years, his primary research interest has been fishing vessel insurance. His work, sponsored by the National Council of Fishing Vessel Safety and Insurance, formed the basis for the fishing vessel liability reform bill introduced in Congress last year.