

## APPENDIX I

Report from MAFAC Workshop on Limited Entry

The world's easiest job is to stimulate energetic discussion among fisherfolk on limited entry. MAFAC's workshop amply illustrated this truism.

We are indebted to the six who contributed cogent discussions of various aspects of the limited entry issue, and who were courageous enough to remain to defend the viewpoints they expressed:

- Dr. Brian Rothschild, NMFS
- Dr. Francis Christy, Resources for the Future
- Jim Owers, Alaska's Legislative Affairs Agency
- Jim Wilson, University of Maine
- Dr. Parzival Copes, Simon Frazer University, Vancouver, B.C.
- Jay Stovall, Alaska Commercial Fisheries Limited Entry Commission

There was unlimited entry into the vigorous discussion periods interwoven among the above presentations. I expect all workshop participants, who are here to listen to my distillation of these discussions to let it be known when I fail to reflect all points of view fairly.

What is Limited Entry?

Limited Entry is any of several fisheries management systems which, by putting a lid on participants in a given fishery and simultaneously identifying those who can participate, create property rights in what formerly a common property resource. In many respects limited entry is comparable to the system of grazing rights allocation applied to our western public grazing lands, and to the system of selling pollution rights to industries along the Rhine as a means of allocating shares in the limited resource of freshwater.

What are the alleged benefits of Limited Entry?

Economists who espouse limited entry see several benefits:

- a) Maximization of the total rent available to people from a natural resource.
- b) Preventing overcapitalization of a fishery, and generally increasing returns on labor and capital.
- c) Permitting increased investments in improved technology.
- d) Decreasing prices of fish products.

Fishery biologists who espouse limited entry see these systems as additional tools for the achievement of better resource conservation.

What are some alleged disbenefits of Limited Entry?

It involves a strategy of increased intervention in private decisions and operations of the marketplace, which many find abhorrent.

Limited entry is a drastic change in fishery systems, and as such, inevitably brings disruption and confusion to the participants in the industry. Social changes, in particular, may be severe.

Our experience with the practical application of limited entry falls far short of our scholarly expositions of theory. Many problems - only some of which we now can describe - may plague limited entry.

Although economic efficiency and rent maximization are admirable goals, a) they are not necessarily overriding goals and b) there is disagreement about who should benefit from the economic "surplus" so created.

A poorly conceived limited entry system could easily negate many of the alleged benefits. Technologic improvement might be slower, not faster, for example.

What are the basic forms of Limited Entry?

- 1) Limited inputs - number of licenses, number of boats, number of lobster traps, etc., accompanied by a buy-back process.
- 2) Quota system - pounds of catch per year.

Where has Limited Entry been applied?

Although economists say the benefits of limited entry would be greatest in truly depressed fisheries, in practice limited entry has been adopted mainly for high-value species where a fishery, once profitable, is declining. Limited entry has been applied in:

Australia (West Coast),

Alaska (19 out of 70 fisheries, including all salmon fisheries),

British Columbia (salmon),

Eastern Canada (lobster, crab, Atlantic salmon, herring), and

Maine (lobster).

Has Limited Entry "proven out" where applied?

The experience has been too short to be sure. In some cases certain important long run benefits seem certain if existing programs continue. In other cases, reasons for relative failure to meet expectations have been identified, and loopholes can be closed fairly readily.

Summary and Recommendation

Just as it would be ridiculous and even disastrous to accept limited entry as a panacea for all fishery problems, it would be a dereliction of duty for those responsible for fishery conservation and management to reject it out of hand.

Practical experience with limited entry is accumulating. Fishery managers should carefully assess that experience to see whether limited entry could, in some form, assist in improving fishery resources and increasing fishery benefits.

Therefore, MAFAC respectfully requests that NMFS gather together useful information on existing limited entry programs, including materials illustrating both positive and negative aspects of limited entry, and make these materials available to Regional Fishery Management Councils (RFMC). NMFS should also provide RFMC's with lists of people familiar with the theory and practical applications of limited entry programs.

Robert B. Weeden, Chairman  
MAFAC Limited Entry Workshop

**Marine Recreational Fisheries Subcommittee Report**

Commerce Building, Washington, D.C.

May 24, 1976 - 5:15 to 7:30 p.m.

**John W. McKean, Chairman**

**Persons Present:**

Subcommittee

Others

Frank Carlton  
 Frank Moss  
 Julius Nelson  
 Frank Grice  
 Melvin Wilson  
 Don Bevan  
 Ted Ford  
 Bob Weeden  
 Richard Allen

Joe Slavin, NMFS  
 Bob Ayers, NMFS  
 Joe Pileggi, NMFS  
 Bill Gordon, NMFS  
 Phyllis Altroggi, NMFS  
 Richard Morasco, NMFS  
 Joe Colson, GSMFC  
 Irwin Alperin, ASMFC  
 Brad Ingram, Centaur  
 Paul Kolp, Centaur  
 G.W. Keech, IGFA  
 Parzival Copes, B.C.

The Chairman opened the meeting with a review of the Subcommittee duties and the actions taken in September and February including the responses of the Department to Committee recommended actions.

The issues discussed were as follows:

1. ECONOMIC EVALUATION OF MARINE RECREATIONAL FISHING.

Mr. Ayers reported that when confronted with the fact that the request for an intensity of sampling that would provide a measure of value in each individual state would cost three times as much and take nine months longer to complete, the committee members unanimously supported the initial design of the study.

Phyllis Altroggi, NMFS economist, and the representatives of Centaur, Inc. Management Consultants, explained the nature of the contract and preliminary plans. They also advise that an open review of the design would be invited on June 28 and 29 before final implementation.

National Marine Fisheries Service  
Office of Policy Development and Long Range Planning  
DISCUSSION PAPER SERIES - NO. 1

THE PROS AND CONS OF LIMITED ENTRY:

- A SYNOPTIC DISCUSSION PAPER

James Wilson and John Gates

Washington, D.C.  
October, 1976

# THE PROS AND CONS OF LIMITED ENTRY: A SYNOPTIC DISCUSSION PAPER

by

James Wilson and John Gates

The adoption of a policy of limited entry (LE) in almost any U.S. fishery would represent a fundamental departure from traditional practices. Consequently, the issue has generated considerable discussion. This paper attempts to provide a broad non-technical overview of arguments used for and against limiting entry in U.S. fisheries. No weighting of the arguments is provided. No a priori case is made for the blanket imposition of LE nor for the universal rejection of LE. The purpose of the paper is to clarify these arguments to facilitate further discussion and study.

The structure of the discussion is to present first the arguments for LE, and secondly, the issues which arise with LE.

## A. Arguments Favoring Limited Entry

### 1. Efficiency

Economic arguments favoring limited entry regard limited entry as a means of eliminating demonstrable economic inefficiencies in the operation of fishery fleets. The inefficiency is related principally to redundant capital investment, and consequential low productivity. This inefficiency exists despite the fact that individual fishermen or businessmen may be highly efficient given the economic conditions in which they operate.

The inefficiency to which economists allude is a characteristic of the fishery system; not of the individuals within that system.

In traditional fisheries the process works something like this: As a fishery becomes profitable because of new markets, increased demand, resource or technological improvement and other reasons -- more fishermen, boats and gear are attracted by the prospect of economic gain. The new entrants to the industry tend to cause a decline in output once MSY is exceeded. For a period the increasing scarcity of the resource causes its market price to rise and maintains the profitability of the industry.

If no measures are taken to maintain the stock such as quotas, limited entry measures, seasons, mesh sizes, minimum sizes, etc., market prices fail to increase enough to make up for the increasing scarcity of the stocks, profitability declines and the industry enters a period of depression. After a while the stocks may tend to replenish themselves, profitability rises and the whole cycle begins over again.

The traditional way fisheries have been utilized has led to a host of inefficiencies detrimental to the interests of fishermen, processors and consumers. For example, although consumers may receive low priced fish during the early stages of the fishery cycle, at other times they receive only high priced fish or no fish at all. Processors are handicapped by unreliable supplies of raw fish. If their equipment

or location is specialized to a declining stock, they face financial loss and the justifiable burden of a high risk reputation in the financial community. Frequently their plants and employees are idle or dislocated. Fishermen wind up sharing the financial reputation and loss of processors and are frequently idled or forced out of the industry. In a modern economy which requires the steady supply of commodities of known quality, and in which the capital for plants, boats and equipment is difficult and expensive to come by, it can be argued that carefully limiting the effort in our fisheries can dampen, if not eliminate, the cycles brought on by unregulated fishing.

Such measures as quotas, seasons, minimum sizes and so forth appear to be sufficient for the avoidance of long term cyclical swings (booms and busts) in fisheries. However, from the economic point of view many biological regulations may create inefficiencies which retard the development of a healthy and vital industry. Economists point out that biological regulations do not prevent the use of excessive amounts of capital and labor in the harvesting of fish.

With regard to the economic problems created by biological regulation these can be explained by noting that frequently, such measures have the effect of either interrupting the harvesting process or of tending to concentrate landings in a relatively short period of the year. In the case of seasons and quotas it is clear that these tend



to artificially shorten and compress the harvesting period (e.g. Alaskan king crab, tuna, salmon and others). At the very least this forces processors and fishermen to install capacity equal to the demands of the artificially high peak of landings created by the regulation. Labor costs, processing costs and storage costs rise correspondingly as does the price to consumers. From the point of view of economic benefits, these extra costs represent a net loss to the economy and may be viewed as a prime example of regulation-induced inefficiency. Nevertheless the relevant question is whether or not a more reasonable method for managing the fishery exists. Clearly, no regulation is not the answer. From an economic viewpoint, one might argue that control of effort in such a way as to minimize the seasonal as well as long term cyclical fluctuations in landings is the way to proceed.

Minimum size and/or mesh regulations are not usually thought of as producing seasonal effects. As a matter of fact in many fisheries they may not, but in certain crustacean fisheries, such as the northern lobster, and dungeness crab, the seasonal molt combined with the minimum size regulation tends to produce a seasonal surge in landings during and/or just after the molt. In such fisheries, as effort increases the first effects are a decline in the average size of capture tending towards the minimum allowable, and then as effort increases more, the

season is further compressed. When this occurs the costs of regulation tend to be of the same character as in fisheries with regulated seasons or quotas. It is worth noting that the economic effects of these types of regulations are similar to a tax on landings. Both reduce the profits of fishermen, one by raising costs; the other by reducing after tax revenues.

Even in fisheries where biological regulation does not induce artificial seasonality, gross inefficiencies are likely to occur. Most of this inefficiency occurs in the form of excessive amounts of equipment, boats and labor in the harvesting sector--according to some estimates more than double the amount necessary to harvest with the greatest technical efficiency. This does not reflect on the efficiency with which individual fishermen ply their trade. Rather, the inefficiency arises from the combined operation of all the boats in the fishery and is not under the control of, or resolvable by, individual boat operators. It may be explained as follows:

Profitability determines the number of participating units in a fishery as in any other industry. However, in fisheries, unlike many other industries, profitability is not determined after deduction of all costs. In fact it is the nature of fisheries that the individual operator does not pay for all costs. Specifically, he does not pay for the

cost of conserving the scarce resource. The farmer, for example, in his purchase or rental of land and in the maintenance of the land pays a rather heavy rent which, combined with exclusive use rights to the land, encourages maintenance of soil productivity through sound soil conservation practices. The fisherman pays only the cost of harvesting. Thus, all other things equal fishing should be very profitable. But all other things are rarely equal, for the high profitability of any fishery draws in new operating units competing for the same limited resource. More boats share the same pie (resource) and profits decline. New operators continue to enter the fishery until the level of profitability falls to a point where entry is no longer attractive. In effect these new boats absorb the profits which naturally occur in a fishery because there is no incentive to invest in the replenishment of the resource. Replenishment or conservation in this context is simply a recognition of the economic trade-off between harvests present and future. No incentive exists because exclusive use rights are absent. Economists point out that in almost every developed and managed fishery the same sustainable harvest could be obtained with many fewer boats than is currently the case. The excess boats and labor contribute zero or negative values to the systems; they are simply redundant. If these boats and labor were diverted to other fisheries or other forms of employment they would make a net positive contribution to the fisheries system. This may be accomplished through some form of LE.

In sum, the economic argument for LE on the grounds of greater expected efficiency is based on a comparison of the state of fisheries currently and the improved state they could be in if fishing effort were constrained by some form of limited entry. The efficiency case for limited entry must also, however, take into account the problems and costs associated with the transition from the current to the advocated state and possible inefficiencies which might be associated with a LE program itself. A consideration of these problems with (or arguments against) LE will be discussed after a second argument is described below.

## 2. The Conservation Argument

In a fishery governed by no limits on entry it is more commonly the situation that new conservation measures are likely to represent a short run economic loss to fishermen for which there is little prospect of long run compensating benefit. The reason for this may be easier to understand once the entry/exit dynamics of the fisherman population is taken into account.

The imposition of new conservation measures gives rise to economic effects that may be overlooked by fisheries managers (though they are almost always noted and predicted by fishermen). In economic terms almost every conservation measure can be viewed as involving a cost which occurs in the short term immediately after the new regulation is put into effect. This is the foregone catch resulting from greater mesh

sizes, lowered quotas or shorter seasons. The corresponding benefit is the potentially larger catch sustainable in the future. The benefit, of course, can only arise after the costs have been incurred.

The practical effect of this timing of costs and benefits is that the currently active fishermen are forced to bear the burden of the conservation measure (the foregone catch); however, when the benefits of the conservation measure occur at some later time (larger sustainable catches) large numbers of inactive fishermen enter the fishery, tending thereby to absorb the benefits of the conservation measure. Bluntly, fishermen who are active at the time the conservation measure is introduced bear the costs of conservation but may not receive the benefits. Costs and benefits of conservation measures are not coincident. As long as entry into a fishery is relatively free, this will always tend to be the case. It is not hard to see, therefore, why fishermen frequently oppose conservation measures; the only circumstances under which they would not would be if they could be ensured of receiving some of the benefits of conservation. This cannot be ensured as long as free entry exists which results in dissipation of the potential benefits. A coincidence of benefits and costs of conservation can only be ensured if entry is limited by policy measures rather than exclusively by market forces. This is not a criticism of the market as a mechanism for resource allocation; for free markets to function properly

rights or use rights are a prerequisite. Yet this prerequisite is precisely what is lacking in a free entry fishery. For similar reasons, conservation measures already in force are frequently difficult to enforce because they represent, frequently, a short run economic cost to fishermen for which there is little likelihood of long run benefit.

It could be argued that conservation is in the greater public interest and that fishermen should be willing to bear the costs of conservation for that reason. This position is difficult to accept simply because we make no similar economic demands on any other group in society and also because there is a more equitable alternative available - one which will not place an unfair economic burden on fishermen and which will at the same time provide for the conservation needs of the public interest - namely limited entry.

It is in fact the lack of a coincidence of costs and benefits with our current method of conservation which may be at the heart of the difficulty of enacting reasonable (from the scientist's point of view) conservation measures.

This 'conservation argument' for limited entry may be contrasted with the efficiency argument by noting that it differs primarily in its practical impact. In order to achieve the conservation benefits of limited entry the numbers of fishermen would not need to be limited to the extent necessary to achieve full economic efficiency and its benefits.

## B. The Arguments Against Limited Entry

Fishing is a way of life. A great part of its value to the individual is frequently in the enjoyment, the sport (even for commercial fishermen) and the independence it provides. Fishermen enjoy their work and the water; it's rare to find one who views his work as a grind and easy to find many who could increase their earnings in fewer hours in other occupations. There is a large element of sport in commercial fishing--outwitting the fish, learning when to go after one and not the other, making the big set, enduring the rigors of the water, encountering and dealing with the unexpected. These are all an important part of fishing.

Finally, fishing is one of the few occupations a person can enter today which has no formal educational and few substantial financial requirements. If a person learns quickly and works hard fishing can provide a comfortable or even substantial income. With no limits on entry the rewards to fishing are primarily a function of man's merit or productivity; and if a man chooses not to be highly productive, to subsist or to work only to the extent he finds necessary, he can fish. The fact that the full economic potential of fishing is realized by only a few, does not deny the fact that the opportunity is there. What is important is the opportunity.

Limited entry is sometimes perceived by fishermen as a threat. Efficiency and higher incomes are important to fishermen, but they fear that the other values that draw them to fishing may be sacrificed for greater efficiency and higher incomes. They fear the creation of arbitrary bureaucratic or financial barriers to entry which may deny them, their sons or another prospective fisherman of the right to a particular way of life and of the opportunity to secure a potentially lucrative economic opportunity. They fear that limited entry will be a way of regulating their independence. Many also question the real efficiency gains which can be achieved through limited entry, especially when such programs restrict or prohibit inter-fishery movement. Essentially, though, this argument against limited entry is philosophical. It is a defense of a way of life against what is perceived as an externally imposed threat. The extent to which limited entry, in fact, will threaten or destroy this way of life is, perhaps, one of the most important issues which must be weighed in the decision to implement and design limited entry programs.

One may note that the "way of life" thesis is a standard shibboleth to erect in the face of change. There is for example a whole literature on the Luddites in Great Britain. Within the U.S. the family farm still receives periodic homage, a century after its apparent demise. This continuing viability of the concept stems in part from the elasticity of our perceptions. The family farm of today bears little resemblance to the family farm circa 1940. The same could be said of the family fishing enterprise and it is doubtful that either would want to return to the "good old days". Is it then conceivable that under LE we might learn to eat our cake and like it?



There are other issues, however which also need to be considered in connection with LE. From this broad philosophical opposition a set of more narrowly based objections arise. Very early in the debate over LE questions were raised as to whether the concept itself would pass the test of constitutionality. Additionally there were doubts about whether the specific aspects of implementation, particularly with regard to the criteria used for entry, against discrimination. Another legal issue which has been raised concerns the incidence of windfall gains. In general, an LE program will confer "once and for all" or "wind-fall" gains which will be incident on a particular group of citizens. The magnitude and incidence of these windfall gains depend on the specifics of the LE scheme selected but in general they will be substantial. This issue of incidence of benefits and costs is more than a strictly legal one; it is also a potential political issue. The fact is that many citizens often regard with distaste any public policy measure which knowingly and deliberately confers windfall gains on a special subset of the population. The fact that such gains are reaped every day in our economy as a consequence of public decisions may establish precedence but it probably will not alleviate the distaste for it.

It is true that any aspirant can enter the fishery, even under (most) LE schemes simply by purchasing access rights from an existing holder. LE schemes are not necessarily discriminatory therefore if financial markets and access to capital are reasonably good. However, since financial sources will probably consider experience and past performance as indices of expected future performance, access will probably be difficult for a young, inexperienced man especially if he has no immediate relatives who are experienced fishermen. Another aspect of financial barriers to entry is that even if the financial market were objective it would automatically exclude those who chose to enter

fishing, not for its financial rewards, but for the opportunity it offered to pursue an occupation that offered personal freedom and the ability to subsist or to work for low secondary rewards.

If, as a practical matter, it is found that the basis for determining new possible entrants to the fishery, whether financial or bureaucratic, is not closely correlated with the potential productivity of entrants, then the efficiency gains expected from LE will not be as large as otherwise.

Another argument against LE has arisen in those cases where implemented (or proposed) programs have restricted the fisherman's ability to move from fishery to fishery. There are few fisheries which lack a natural season and are, therefore, capable of supporting a commercial fishing operation on a year around basis. If the designers of LE programs do not take into account the fact that mobility between fisheries is frequently an absolute necessity and do in fact eliminate that mobility the result will be the elimination of the full time fisherman. Commercial fishing will become the province of the part-timer. Our current system of biological regulations has gone a long way towards making this a fact of life already by significantly shortening the effective fishing season in many instances. Ill designed limited entry programs could accelerate the trend.

Another argument against limited entry arises in those cases where limited entry programs seek a reduction in the numbers of fishermen. If such reductions are not carried out very carefully and with full attention paid to the fate of those denied access to the fishery (even though such denial may be fully legal) the costs of unemployment and other forms of social dislocation, will tend to offset apparent gains within the fishery. The net result from the point of view of national efficiency will depend, of course,

the particular circumstances of each fishery and each limited entry program. In those programs instituted or proposed to date particular attention has been paid to this problem, for reasons of efficiency and also because it is so closely related to the incidence issue of who retains access to the program and why.

A final argument against LE concerns doubts about the logic of the conservation argument for limit entry. This argument states that only under limited entry do individual fishermen's economic interests and the interests of all in conservation coincide and that, therefore, the probability of enacting more reasonable conservation measures is enhanced. It is pointed out that for this to be the case fishermen would have to be well informed about the possibilities of conservation and would have to take a long term view of their industry and business. It is sometimes claimed they are not currently well informed and tend to be rather shortsighted. This may well be the case simply because under our current system of management there is no reason for fishermen to behave otherwise. Farmers, who by virtue of their ownership of land do receive the benefits of soil conservation, do appear to act in a way which makes soil conservation a relatively minor problem - a problem the government can deal with through encouragement and education rather than direct regulation. It is perhaps a matter of individual opinion whether or not such results could be obtained in fisheries through LE.

#### Summary

There appear to be strong arguments for and against LE. Both sets of arguments apply with different weights according to the particular fishery in question and the specific LE measures adopted. For example, the strongest

arguments against LE stress the possible loss of employment opportunities and possible injustices involved in the determination of who gets fishing rights. In over-crowded fisheries such as lobster and salmon where a reduction in effort is necessary these arguments should carry great weight in any discussion of LE and especially the timing and means by which effort reduction is to be achieved. On the other hand, in fisheries where expansion is possible (e.g. New England groundfish) and where as a practical matter limited entry merely means placing a ceiling on future capacity, these arguments are of very little or no importance. Similarly the value of the efficiency and conservation benefits from limited entry vary from fishery to fishery.

It is tempting to argue that the benefits of limited entry are likely to be greater, in general, in those fisheries which are seriously overfished - that is where the problem is most apparent. However, the realities of implementing limited entry in these situations suggests that the long time involved (to slowly and fairly reduce numbers) may considerably reduce the value of limited entry benefits. It is also important to recognize that effort reduction may mean merely the re-deployment of effort into less exploited fisheries. This of course would reduce the dislocative effect. Consequently, it may well be the case that limited entry is a more reasonable (beneficial) management approach in developing fisheries where the off-setting costs and problems with implementation are minimal.

A particularly thorny problem appears to concern the conditions under which initial assignment of fishing rights is determined by any program. In cases where the nature of the overfishing problem requires a reduction in the number of participants in the fishery, the manner in which rights are assigned (or not assigned) must be as fair and reasonable as possible. It would appear, however, on the basis of discussions with lawyers that as long as the fishing right itself accorded no rights to the individual greater than those associated with the normal holding of property (e.g. farm land) that the test of the law would be met. Generally it would be fair to conclude that limited entry programs can be designed which meet the tests of the constitution and the law. In fact, PL 94-265 requires that any L.E. scheme include measures to avoid excessive concentration in ownership of access right.

The desirability of LE depends on facts and circumstances as well as on the particular variant of LE to be considered. It has been argued by several authors that most if not all of the issues raised by LE can be resolved for a particular fishery by careful attention to detail and selection of complementary measures.

The validity of this argument remains to be tested by experience. It is reasonable to conclude that LE does offer substantial benefits to fishermen and to the nation if ways can be found to make it work. In this connection, it should be noted that since the desirability and design of limited entry programs is so very dependent on the particular circumstances

of each fishery, that initiation or planning for any limited entry program must only be undertaken with strong and on-going representation of those people most affected - the fishermen.

- Agnello, Richard J. and Lawrence P. Donnelly, "Property Rights and Efficiency in the United States Oyster Industry", Journal of Law and Economics, October 1975.
- Bell, Frederick W., "Technological Externalities and Common Property Resources: An Empirical Study of the United States Lobster Industry", Journal of Political Economy, January 1972.
- Bishop, Richard C., "Limitation of Entry in the United States Fishing Industry: An Economic Appraisal of a Proposed Policy", Land Economics, November 1973.
- Christy, Francis T. Jr., Alternative Arrangements for Marine Fisheries: An Overview, Resources for the Future, Inc., Washington 1973.
- Crutchfield, J.A. and G. Pontecorvo, "The Pacific Salmon Fisheries: A Study of Irrational Conservation", Johns Hopkins Press, Baltimore, 1969.
- Davis, Jackson, et al "Alternative Management Schemes for the Surf Clam Fishery" Special Report in Applied Marine Science No. 713, Virginia Institute of Marine Science, Gloucester Point, Va. (Manuscript in preparation)
- Dow, Robert L. et al "Bioeconomic Relationships for the Maine Lobster Fishery with Consideration of Alternative Management Schemes" NOAA Technical Report NMFS SSRF-683, National Marine Fisheries Service, U.S. Dept. Commerce, Seattle, Washington 1975.
- Gates, John M. and Virgil J. Norton, "The Benefits of Fisheries Regulation: A Case Study of the New England Yellowtail Flounder Fishery", Sea Grant/Resource Economics, Marine Technical Report No. 21, University of Rhode Island, Kingston, 1974.
- Gordon, H.S., "The Economic Theory of a Common Property Resource: The Fishery", Journal of Political Economy, April 1954.
- Mundt, J. Carl (ed.) Limited Entry Into Commercial Fisheries, Institute for Marine Studies, University of Washington Press, Seattle 1975.
- Scott, A., "The Fishery: The Objectives of Sole Ownership", The Journal of Political Economy, April 1955
- Wilson, James and Fred Olson, "Limitation of Entry in the United States Fishing Industry: A Comment", Land Economics, May 1975.

