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Co-Management of Commercial Fisheries:
Concerns and Issues*

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Abstract:

Co-management has been suggested as a solution to many of the problems associated with modern commercial fisheries. Proponents of the concept, including the author, have suggested that co-management provides fishermen with a personal stake in the future of their fishery or fisheries, provides for active participation in conservation and management of fisheries by users, and provides a normative context for acceptance and enforcement of regulations. However, it is also obvious that co-management is not a panacea for all that ails modern fisheries. A review of three social structures for managing fisheries (Florida spiny lobster; Newport Beach dory fishery; and the Regional Fishery Management Council system) described in the literature as co-management systems indicates that there are critical gaps between the theory and practice of applied co-management. First, co-management does not appear to work in fisheries with diverse user groups and diverse socio-cultural norms; second, the economic self-interest of fishermen appears to have greater weight than self-interest in the conserving of fish stocks; and third, the lack of a "public" voice in co-management programs results in an emphasis on harvest goals rather than on conservation goals.

* Opinions expressed in this paper are those of the author, and not of NOAA/National Fisheries Marine Service.

Introduction:

The sharing of responsibility for conservation and/or management of natural resources between the owner of, or trustee for, the resources and the user of the resources is termed co-management. In the case of marine fisheries in the United States, the owner or trustee is government acting on behalf of a state or the entire nation. For co-management with user groups to occur, government must empower the groups with responsibilities which normally accrue only to an owner or trustee. In this paper three cases in which responsibility has been divested to user groups will be discussed briefly. Each case is quite different but each also shows that co-management arrangements do not adapt well to the dialectic of change. This is seen to be a fundamental dilemma for resource managers and participants in co-management programs.

Co-management is the sharing of power between owners and users of a resource. Government, for example, may decide that the greatest public good is to conserve a fishery (or any other renewable natural resource) so that maximum sustainable yield is achieved and maintained for the benefit of future generations. Setting and enforcing biological goals (harvest limits) by government is a relatively simple task. Development and allocation of limited harvest goals among users is not a simple or easy task without the active participation and consent of users. Thus, in the majority of co-management programs described in the literature, it is allocation of harvests among participants which is the task undertaken most often by the users, with restoration of habitats and the re-planting/stocking of the resource as the second most common activity. The empowerment of user groups ranges from joint setting of biological goals, implementation and enforcement of programs to simple allocation and monitoring of harvests.

Pinkerton and Berkes, among others, have shown that co-management programs which are tied to community norms and cultural patterns are successful in that users have an existing social structure to support their management structure. The examples of the British Columbia Haida and other Native American fisheries of the Pacific Northwest and of the Eskimo hunters and fishers of James Bay are powerful, but relate to homogenous communities and/or single resources, such as salmon. The test, then, of the utility of co-management as a fishery management tool in modern commercial fisheries is whether it is capable of being applied to multi-species fisheries with diverse "communities" of users.

The Newport Beach (CA) Dory Fishery

The Newport Beach dory fishery is a small scale artisanal fishery in the Channel Islands off southern California. The fishermen usually fish alone in dories between 17 and 20 feet in length (< 6 metres). The dories are motor-powered and

designed to operate in the near-shore waters and on off-shore banks in which surf conditions prevail. It is unusual for the fishermen to operate more than 15 miles (24 kilometres) from shore. Customary gear is hook and line fished either as bottom long-line, with both ends anchored to the sea-bed, or as vertical longline, with only one end anchored. Target species are California halibut and species of groundfish, and species composition varies seasonally. Fishing trips are normally of twelve hours or less, and catches are typically 500-600 pounds of fish. Catches are sold by fishermen or their relatives on the pier in Newport Beach, although occasionally fishermen will deliver catches to Long Beach or Los Angeles buyers when the prices are high. The fishery is a limited entry fishery regulated by the State of California in order to achieve conservation goals for halibut. Most of the 32 fishermen (1994) belong to the Newport Beach Dory Fishermen's Association, which manages boat storage and the boat "lockers". The four dory fishermen not members of the Association fished in the exclusive economic zone (EEZ or "Federal waters") beyond the territorial sea in which State of California regulations applied.

The Pacific Coast Groundfish Fishery Management Plan also provides for limited entry, but in the exclusive economic zone off the Pacific Coast. Limited entry small boat fleets which harvest groundfish were included (grandfathered) under the Plan, but those dory fishermen who did not belong to the Association were not automatically granted licenses. In the individual applications for long-line permits but not in the fleet application, all fishermen had to show that their boats fished during a "window" period (1984-1988) and made at least six landings each in excess of 500 pounds of groundfish, excluding halibut, during the window. The catches had to be taken on bottom long-line gear.

It soon became apparent to fishery managers and the author that membership of the Dory Fishermen's Association was granted and withdrawn based on the personal and collective relationships of fishermen, and it shifted with the internal politics of the Association. One current non-member, for example, had been a member until 1992 when a dispute over a locker had led to his removal from membership. Two other non-members preferred to fish and operate outside group membership.

For all the dory fishermen documentation of landings and species composition was "irregular". Payment of California sales-taxes was required with submission of each landing ticket and many fishermen selling their own catches had not submitted either tickets or sales tax; similarly fish dealers buying from fishermen had not submitted landings tickets with sales tax payments. The exception to this lack of documentation were the landings of California halibut. Few records were kept of gear type used by fishermen, and the Association was not interested in maintaining landing or gear records.

While the license limitation program under the Pacific Coast Groundfish Fishery Management Plan is not a "co-management" plan per se, the inclusion of state-recognized limited entry fleets was seen as a step towards recognizing traditional fisheries and permitting local control of harvesting of groundfish species, not including halibut. The Newport Beach Dory Fishermen's Association was however, organized for other purposes -- allocation of scarce dock space and storage lockers -- and recognized by the State of California for the purpose of controlling effort in the halibut fishery. The Association was not interested in taking on any fishery conservation or management tasks.

The Spiny Lobster Fishery of Florida

This fishery has been admirably documented by Orbach, Johnson and Griffiths (1987, 1989, 1992) and the research team won the National Association for the Practice of Anthropology (NAPA) Praxis Award in 1991 for their work on the fishery. Briefly, Orbach and his team undertook interactive research with the fishermen for a period of nearly four years. They jointly developed, with the fishermen, a fishery management plan that called for a voluntary reduction in the number of traps fished, a trap "buy-back" program for fishermen who wished to leave the industry, and set up a stock re-building schedule. A fisherman-group was established to assist and monitor the implementation of the plan. The program was adopted by the Florida legislature for the territorial sea fishery and incorporated into the Federal Spiny Lobster Fishery Management Plan.

The participants in the fishery are diverse; "Cuban" fishermen throughout Dade County and the Keys; "Anglo" fishermen in the Keys and on the West Coast; Black fishermen; recreational fishermen; and commercial fishermen using skin-diving equipment. All these groups were competing for dock and market space and for an increasingly scarce resource. The conservation and management agreements brokered by Orbach and his colleagues were, and are, impressive given the social, economic, and cultural divisions among the fishermen.

This effort at co-management has not, however, succeeded to date. Fishermen have not voluntarily reduced the number of traps in the fishery, and fishing effort has not been reduced. The buy-back fund, a lump-sum set aside by the State of Florida to be matched by a voluntary levy on catches, is not in operation because fishermen are not making their contributions to it. In short, the program is not working because there is no collective impetus on the fishermen to make it work. At this time a further amendment to the Federal fishery management plan is being developed which will place mandatory controls on fishing effort and the number of traps, and will replace the co-management controls on effort.

The Regional Fishery Management Councils

The Regional Fishery Management Councils (Councils) were created in 1976 by the Fishery Conservation and Management Act (Magnuson Act), later renamed in honor of one of its authors, Senator Warren G. Magnuson. Eight councils, composed of fishermen and persons "knowledgeable concerning fisheries and the fishing industry", were established for the principal fishing regions of the United States. The primary functions of each Council are to develop, monitor and evaluate fishery management plans, and plan amendments, for each fishery in need of conservation and/or management within their area of responsibility. The Magnuson Act can be said to vest a portion of the Federal Government's authority to manage fishery resources [16 USC 1852(a)], and for this reason Councils have been cited by the author and others as examples of co-management systems.

Members of the Councils are nominated by the Governors of the States within a Council's area of responsibility, and, after a selection process, appointed by the U.S. Secretary of Commerce. In addition to the appointed members, the senior state fisheries official for each state in the region has a seat on the Council, as does the senior National Marine Fisheries Service official for the region. Normally a state will have three representatives on the Council; the choice of nominees by a governor should reflect the fisheries and their importance to the state and the region. The North Pacific Council, which includes representatives from Alaska, Washington and Oregon, is responsible for the fisheries off Alaska, and nominees and members generally reflect the importance of the commercial fisheries in that area. Conversely, the Gulf of Mexico Council is responsible for an area with an important marine recreational fishery, and Council membership reflects recreational fishing interests.

In general it can be said that the Councils have reflected the primary interests in the fisheries within their area of responsibility in developing fishery management plans. The New England Council, for example, has presided over the demise of the cod, haddock, and yellow-tailed flounder fisheries while protecting the open-access harvest rights of New England fishermen. The political clout of fishermen and their ability to influence Congressional and Federal Government actions for more than a century was well documented by Margaret Dewar (1983) in her economic history of the New England fishery. M.E. Smith (1979, 1981) and C. Foreman (1980) in their discussions of the Council also concluded that it truly represented the beliefs and priorities of New England fishermen and that the Federal Government's stated goals of conserving the fish stocks and preventing overfishing were dismissed as inconsequential and irrelevant to the management of the New England fishery. More recent studies of the collapse of the fishery in New England have only confirmed how powerless the

Federal agency concerned, the National Marine Fisheries Service, had become in the face of fishing industry and Congressional opposition to unpopular conservation and management measures.

The effort to provide balance in the representation of diverse user groups on Councils did ensure that groups were heard from; however, the dominance of industry sectors and the use of industry lobbyists, typically lawyers, to debate the issues served to remove fishermen, particularly smaller operators and crew, from the debates and compromises achieved. While it can be said that the Councils did reflect industry positions and were co-management bodies, as a whole they did not arrive at positions which had the consensus of many of those participants who were not, for example, using major gear types or who depended on a seasonal round of fisheries rather than single species. The politicization of Councils came about because the Council members and senior staff perceived that they had been empowered to manage the fisheries, and that the Federal government, the public trustee, had a lesser role and little power.

Discussion

Co-management is based on the concept that user groups will prefer to regulate themselves and, if permitted to do so, government can share authority and delegate some portion of it to the user group in order to achieve mutual goals. Each of the cases discussed above raises a different issue which needs to be considered in the design of a co-management system.

The Newport Beach Dory Fishermen's Association was a cooperative of fishermen whose task was to manage and allocate dock space and storage lockers among members. It had been given the ability to do this by the state as a way of controlling effort in the fishery. However, membership in the Association was not a pre-requisite to access to the fishery until the limited license program for Pacific Coast groundfish was implemented, and even then individual fishermen with a history in the fishery could still gain access rights. While the Association was eager to manage scarce harbor resources, it and its membership were not eager to monitor catches and landings, and individual records were only kept for the halibut fishery which had relatively strict state supervision. The issue here is that fishery management concerns may not be the concerns of fishermen and their representative organization. In the case of Pacific Coast groundfish, the Association had no expressed interest in resource management other than continuation of access to the resource. The scale of the Newport Beach dory fishery is such that it does not affect stocks in any meaningful way, and its inclusion in the limited entry program and potential quota management will be of

marginal interest to coast-wide fishery managers and to Association members.

In the second case, that of the Florida spiny lobster fishery, Orbach and his research/facilitation team achieved agreement among diverse groups of fishermen about problems and their solution in the fishery. The fishermen's representatives presented their solutions to fishery managers and the Florida state legislature, and their proposals became the new regulatory regime for the fishery. The proposals have not, however, stemmed fishing effort for spiny lobster because apparently they relied on voluntary actions by a large and diverse body of fishermen who were not fully convinced that joint action was for the best of the individual. In this case it can be argued that government was ready to empower fishermen with an active role in the fishery but that individual interests prevailed in spite of an active and engaged group of leaders. Thus it would appear that a pre-requisite to successful co-management for a fishery with diverse user groups would be to tackle an issue that all can see clearly to be in their interest before moving on to overarching conservation and management issues.

In the case of the Councils, the debate about power sharing and the perceptions that Councils are "in charge" of fishery conservation and management has left the stocks vulnerable to over fishing. The Councils do represent major industry groups, and do have political support for this, but the interests of industry groups are economic and do not necessarily look for long-term maintenance of stocks. At issue here is the interest of the public and the long term social and economic benefits of managing for sustainable yields. For co-management to work, there has to be a clear understanding of the long goals of power sharing by both government and user group. Moreover, government agencies must be shielded from short-term political pressures to change or dilute goals if the power-sharing bargain is to be maintained.

Summary

Co-management is a viable fishery management tool for some fisheries. This author believes that these fisheries are those with homogenous groups of users sharing common value and social systems and depending on a single species of fish. Multi-species and multi-user group fisheries are viewed as less amenable to co-management simply because the number of variables in the power-sharing equation becomes unwieldy. This does not mean that co-management should not be tried; it does mean that there has to be a willingness by fishermen and their associations to tackle the tasks of managing fish-stocks and to share goals of sustainable development with government. It also requires that fishermen and government understand what power-sharing entails and the mutual benefits that can accrue

over time. Finally, it requires that government define its goals for fisheries and adhere to them through the political tests that will inevitably occur.