SEA OF TROUBLES

Managing New England's Fisheries

Christopher H. Foreman

When President Gerald Ford reluctantly signed the Fishery Conservation and Management Act of 1976, our coastal fishermen, conservationists, and fishery scientists rejoiced. At last, they said, America's offshore fishing grounds would be rescued from the rapacity of Soviet, Japanese, and other foreign fleets that had been systematically scooping up cod, haddock, salmon, and other valuable species since the early 1960s. The new fishery act, which asserted U.S. jurisdiction over all fish stocks (except tuna) within a fishery conservation zone extending two hundred miles from our coast, would put a stop to all that.

The foreign fleets, it was charged, enjoyed unfair advantages. Because they were either heavily subsidized or owned outright by their governments, they could afford state-of-the-art equipment: large, efficient stern trawlers and processing vessels that could easily outwork the smaller, older side trawlers the Americans used. Also, they often engaged in "pulse fishing"—focusing on a particularly inviting patch of ocean and hauling up almost anything harboring usable protein. Americans who used fixed gear (shellfish traps or gill nets deployed for later retrieval) frequently returned to find their gear in shreds and pointed accusing fingers at "the foreigners." Some fishermen even related tales of face-to-face intimidation.

Between 1960 and 1970 the Americans' share of the harvest on New England's fertile Georges Bank had declined from 88 percent to 10 percent. In the same period, the Americans watched their 100 percent share of the catch off southern New England slide to a mere 12 percent. And while the United States had imported only 23 percent of its seafood in 1950, the proportion had swelled to over 60 percent by 1972. In 1974, Dr. William J. Hargis of the Virginia Institute of Marine Science told a House committee that the American offshore fishery "cannot long survive if conditions are not improved." In 1975 a Commerce Department report blamed the overfishing of Atlantic mackerel, haddock, and yellowtail flounder primarily on foreign fleets. It is no wonder that by the mid-1970s, coastal fishermen were crying loudly for relief.

Such warnings and concerns helped spur passage of the fishery act, the first comprehensive program of fisheries regulation ever attempted by the federal government. In many respects, the act did improve matters. Certainly, it reduced offshore fishing by foreign fleets. By June 1978, the Commerce Department's National Oceanic and Atmospheric Administration (NOAA) could report to Congress that there were only 570 foreign fishing vessels operating within 200 miles of our shores, compared with 2,700 in 1975. And by 1980 the total foreign catch in the conservation zone had fallen to a little over 1.6 million metric tons, some 22 percent below the 1974–78 average.

In New England, the act allowed us to shut out all except Canadian competition for species that are of particular interest to American fishermen (such as cod, haddock, and yellowtail flounder), and to control the foreigners' take of

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less-favored species (such as hake or squid). As a result, total New England commercial landings grew from about 230,000 metric tons valued at $150 million in 1975 to 360,000 tons valued at $326 million in 1980.

Nevertheless, serious difficulties abound, particularly in New England. After five years of operation, the fishery act's creaky regulatory apparatus satisfies no one. The reason is that it not only subjects foreigners to controls, but regulates domestic harvesters as well—and so badly as to leave serious doubt that it can safeguard our long-term supply of fish. Let us see why.

Fisheries and Fishermen

In explaining why fisheries pose such a difficult problem, economists emphasize their "common property" nature. Because the fish are unowned, individual harvesters have an incentive to enter the fishery and grab all they can as swiftly as possible, as long as there is any profit in doing so. Thus, in the absence of appropriate regulatory measures, depletion is inevitable. The same principle applies to public grazing land or pools of oil. In effect, the exploitation of a common property resource is a "war of all against all" that can destroy long-term productivity and profitability.

Another real headache for policy makers arises from the simple fact of resource diversity. The basic distinction between finfish and shellfish is just the beginning. Over 200 species are harvested by U.S. fishermen and each has its special character. Of course, most of the fishing effort is taken up by a relative handful of these—shrimp, salmon, tuna, flounder, crabs, lobsters, clams, oysters, and scallops. A single species, however, is often composed of several geographically distinct stocks, each of which fishery managers must analyze and regulate separately. What is more, any given stock may display significant, but inexplicable, changes over time in its growth rates, reproduction, mortality, habitats, and feeding habits. Moreover, fish are the most mobile of the world's commonly owned creatures. Trees are stationary, and even cattle can only wander off in two dimensions. But fish, aside from salmon and a few other species, are extremely difficult to count or track. In these circumstances, fishery scientists can ordinarily make only educated guesses about what stocks (and how many of each) will be available for harvesting at any given point in the future.

Predicting future stocks of fish would be difficult enough if there were only the fish to think about. But out there in the relative isolation of the vast ocean there are humans as well. Nobody knows exactly how many American commercial fishermen there are, but government estimates put the number at about 180,000, half of them fishing full-time. These fishermen are almost as varied as the fish. Some ply their trade a mile or so from the coast (within state waters), others at a considerable distance from land. Some pursue demersal (bottom-dwelling) species like cod or flounder, others try for mid-water species such as herring or mackerel. Some fish with trawls, others with fixed gear, methods that are incompatible when used in the same area. One thing most fishermen share, however, is deep resentment of any outside meddling with their livelihood. Many New Englanders, for example, strongly resisted a recent attempt by the National Marine Fisheries Service (a part of NOAA) to impose a logbook system for collecting catch data. Indeed, for a lot of fishermen, it is now the government regulator, rather than the foreigner, who is the major nuisance.

Regulatory Tools

Section 303 of the fishery act provides that a "fishery management plan" (of which, more later) may use any or all of the following devices to control catch rates.

Closed areas and closed seasons. At certain places or times, fishing is banned in order to protect either spawning or juvenile stocks in areas where the population is lagging. Such closures have the advantages of being easy to enforce—a vessel's mere presence in the forbidden zone renders it suspect—and being comprehensible to fishermen. But, say some economists, closures are costly, compared with less drastic methods of restricting the take, since fishermen will have to go greater distances or concentrate their effort during the open seasons when the stocks are dispersed. As long as demand is sufficient to render a fishery profitable, a closure will simply increase the fishing

pressure on whatever tract of ocean or period of time is not closed. The area or duration of the closure can, of course, be increased to compensate for this—a poor solution at best since it only intensifies the pressure on the rest.

Gear regulation. For the trawl fisheries of the northwest Atlantic, this generally means imposing a minimum permissible mesh size for the nets. Here, again, the purpose is to protect future yields by allowing undersized fish to escape. A major problem with mesh regulations is enforcement: although each vessel's equipment may be inspected, the determined violator can hide an illegal mesh from even the most energetic inspector. In a "mixed trawl" fishery (an area inhabited by different species), gear regulation problems are compounded. If New England fishermen are required to use a larger mesh so as to avoid taking juvenile cod or haddock, they will not be able to catch adult hake —a smaller fish that, far from being overfished, is considered "underutilized." Moreover, like closures, mesh regulations promote inefficiency by encouraging more intense fishing effort to compensate for the restriction.

Size and sex limits. These are aimed at protecting undersized fish and egg-bearing females. Size limits are particularly difficult to enforce in the case of finfish. Determining the proportion of a vessel's catch that is undersized can be impossible given the thousands of pounds of fish involved.

Catch limits. This approach, which normally means putting a limit on the overall harvest that can be taken from a fishery in a given period (say, a year), is also inefficient. Fishermen will simply race with one another to get a larger part of the limit. Thus, like the tools mentioned above, a catch limit directs too much money into the fishery, leaving it overcapitalized in slack periods.

In addition, catch limits, like size and sex limits and gear regulation, require that enforcement personnel inspect catches. The more places there are for fishermen to bring their catch, the more expensive and difficult this becomes. Moreover, fishermen can evade all restrictions of this sort by pretending that conservation zone catches are taken in state waters.

Limited effort. By far the most controversial regulatory device is a direct limit on the amount of fishing effort. One way to attempt this is to limit the number of vessels permitted to enter a given fishery. But this, like the earlier measures noted, and for the same reasons, is unlikely to ensure economic efficiency. A program of tradeable catch quotas for individual fishermen, on the other hand, addresses the common property problem more directly—which is why the economists prefer it. By creating what are in effect property rights in the fishery and by giving out "ownership portions" in the form of entry permits, it encourages harvesters to adopt a more "future-oriented" posture and thus encourages conservation. They need no longer worry about cut-throat competition; nor must they forgo the efficiency achievable through technological innovation (a major drawback of gear-regulation schemes).

Limited effort has been used successfully both in the United States and elsewhere. Alaska, for example, has operated a very popular tradeable permit program for its salmon fisheries since 1974. (In the Alaska case, the rights traded are not to a given quantity of fish but to a given tract of water, subject to the use of certain types of gear.) But the idea is hard to sell to fishermen because some will be left out. Is it right, they ask, for government to guarantee a living to some persons and bar others from the field?

The Creaky Regulatory Process

The foregoing discussion makes it plain that fishery management brings problematic tools to a complex and uncertain task. Unfortunately, the regulatory process through which fisheries are managed only makes matters worse.

The problems begin with the statute. It strikes many persons as an effort to safeguard the resource, and indeed is largely that. But it also incorporates a desire to enhance the incomes of coastal fishermen. These interests *may* be coincident, as they are when both the fishermen and the resource are threatened by foreign predation or, more recently, offshore oil drilling. But more often there is a struggle between those claiming to speak for the fish and those claiming to speak for the fishermen.

What got fishery legislation on the congressional agenda was the economic malaise afflicting coastal fishermen. With the campaign originally led by members of Congress from coastal states, the early drafts of the bill were explicitly

protectionist, calling for little more than an offshore fence to keep foreigners out. Soon, however, the proponents began talking in more broadly "conservationist" terms. Whether this was mostly a matter of strategy or of conviction, it added a new set of interests to the debate. Other persons, those with an intellectual or professional interest in fishery management, supported the bill mainly out of a desire to prevent overfishing. The National Marine Fisheries Service, which had long insisted that kicking the foreigners out was not an adequate response to the problem, fell into this group.

These differing perspectives were only superficially reconciled in the substantive and procedural requirements of the fishery act. The act required that management plans for fisheries in the conservation zone be designed to produce "optimum yield"—in this context a term of truly colossal vagueness. Thus, a plan must seek, first, to prevent "overfishing" and, then, to provide "the greatest overall benefit to the Nation," taking into account the food production, recreational opportunities, and "maximum sustainable yield" of the fishery, "as modified by any relevant economic, social, or ecological factor." In short, optimum yield can be virtually anything so long as the regulators consider a variety of values.

Other, and in some respects greater, problems arose from Congress's misplaced confidence in its ability to create regulatory machinery that could both handle that difficult assignment and, at the same time, reconcile the economic interests involved. To this end, Congress tried to "democratize" the regulatory process, while giving the federal bureaucracy a preeminent role in standard setting. The act established seven regional fishery management councils, each made up of representatives of the fishing industry, state fishery officials, and the regional director of the NMFS, plus some nonvoting members. Each council monitors the fisheries in its region and, subject to NMFS approval every step of the way, initiates and prepares management plans for any stocks it thinks need them. Such a plan specifies the optimal catch, based on "stock assessments" made by NMFS, and proposes a scheme of regulation. Once a plan is completed, NMFS drafts, promulgates, and (along with the Coast Guard) enforces the implementing regulations. The process involves publication of plans and environmental impact statements (draft and "preliminary final"), public hearings, public comment periods, regulatory analyses, repeated intradepartmental reviews, and so on—far more than is required under ordinary informal rulemaking.

On paper, the process takes 250 days from start to finish. But inevitably there are delays due to misunderstandings and miscalculations when theory translates into practice. In the meantime, the fishery may be changing dramatically, rendering the optimum yield figures unrealistic. And even though NMFS has asked the councils to write multi-year plans broad enough to permit easy adjustments, anything significant enough to rate the term "amendment" merely sends the entire process back to square one.

More basic difficulties stem from the political sensitivity of the councils. Congress created the council system largely to make the new regulatory scheme palatable to the industry. But industry in this case consists of not one but many interests—trawlers versus fixed-gear vessels, small boats versus large ones, and so on. When these conflicts are added to a host of others—state against state, "feds" against "locals," conservation versus profit—a council's deliberations can degenerate into combat. And the result can be contentious, ineffective management.

The New England Case

In this respect, the New England council is recognized as by far the most troubled of the councils. Its management of herring, for example, has been bedeviled by conflicts between those who fish for juvenile herring (sardines) and those who go after the grownups. The latter naturally want the sardine catch kept small enough to ensure a robust "adult" herring fishery, and spokesmen from individual states vie with one another on behalf of their constituents. Perhaps the worst example, however, has been its management of groundfish—cod, haddock, and yellowtail flounder.

A bit more background is in order here. Soon after the fishery act was passed, NMFS prepared a full-scale management plan and prevailed on the New England council to adopt it so as to preclude unregulated fishing while

the council was getting on its feet. This emergency plan became effective in March 1977. The plan (which, with myriad amendments, remained the basis of groundfish management until early this year) included catch limits, size restrictions, closed areas, mesh restrictions, and limits on "incidental catches"—in short, a serving of everything from the menu of traditional regulatory devices, except limits on effort. In mid-June, NMFS published final regulations implementing the plan. Just three weeks later, nonetheless, NMFS was compelled to close the cod fishery in the Gulf of Maine for the rest of the year. The reason: fishermen had already reached the 5,000 ton annual overall catch limit. In August NMFS extended that closure to all of New England, and in December to the entire groundfish fishery north of Cape May, New Jersey.

The next year brought more troubles. Having determined that the cod limit was about to be exceeded, NMFS closed the New England cod fishery on March 1, 1978, and a few days later, it closed all commercial fishing for both cod and haddock for the rest of the month. This forced some 1,700 vessels to shift to less desirable species.

In April, under pressure from small-vessel operators, the council and NMFS shifted to a system of "vessel class allocations," again by emergency regulation. Four classes were created: vessels under 61 gross registered tons, those between 61 and 125 tons, those over 125 tons, and those operating with fixed gear. Each class was given a separate quarterly limit (based on "historical landing data") for the Gulf of Maine and Georges Bank areas. This did not work either: by August 1978, NMFS had to close down the Gulf of Maine cod fishery again because all four classes had exhausted their allocations.

Nor have other groundfish species escaped problems. In February of 1979, over 300 angry fishermen, mostly from New Bedford, converged on a council meeting in Peabody, Massachusetts, to protest the closure of the western segment of the yellowtail flounder fishery.

In all these cases, the fishermen argued that there were plenty of fish and that the limits NMFS had insisted on were so unrealistically low as to guarantee economic hardship for the industry. NMFS, on the other hand, claimed its stock assessments were accurate, but that the council, pressured by its fishing constituencies, was simply unable to take adequate measures to hold effort to the requisite level. As one NMFS bureaucrat put it, "The council can agree about the size of the pie but has yet to say how many people can come to dinner."

The problems appear to have eased a bit, but the future is murky. On March 31, the New England council began trying out (once again under emergency regulations) a different way of managing groundfish, one that relies on spawning area closures and mesh regulations, rather than vessel classes and species catch limits. Moreover, having concluded that separate consideration of individual groundfish species is probably foolish because of the "mixed" nature of the fishery, the council and NMFS are hard at work on a plan embracing all groundfish. This is laudable. But whether the problems of the last five years can be overcome is anybody's guess. Mine is that considerable difficulties will remain, as conflicting interests jockey for position with one another, to the detriment of policy effectiveness.

Biting the Bullet

So long as those who make policy for our coastal fisheries understand less than they need to about the resource they are trying to manage, fishery regulation will remain a messy, uncertain business at best. It must be admitted, however, that Congress has not been much help. It's approach seems to be "when in doubt, duck." Last May the House Committee on Merchant Marine and Fisheries reported out H.R. 5002, a bill that only tinkers with the real, if secondary, problem of the fishery act's cumbersome process. At least in New England, a much more serious problem than "process" has been that the council has failed to state its goals clearly, and as a result has allowed itself to be overpowered by the voices crying out for immediate relief. Unless Congress changes its approach, it will be up to NMFS to do what the act does not: face squarely the trade-off between adequate income for the industry and appropriate safeguarding of the long-term supply of fish. Unless the council begins drawing on *all* the tools at its disposal, including limiting effort, the fishery act is a poor substitute indeed for the uncontrolled rapacity of the foreigners. ■