



# Rights-Based Fishing

## Transition to a New Industry

North Atlantic fisheries off New England and maritime Canada have collapsed, and throughout the world yields from many ocean fishing grounds are declining precipitously. Reversing the process may require abandoning the tradition of free and open access to the ocean's resources in exchange for a "closed-access" system based on property rights.

The story is certainly not news: many of the world's ocean fisheries are being pushed toward possibly ruinous declines. True, we have yet to see skyrocketing prices or long lines at the seafood counter. Long-established fishing communities, however, are threatened, as are some traditional, often centuries-old ways of life. Sporadic armed conflict has even broken out in some territorial waters. And the equilibrium of coastal marine ecosystems, already taxed by pollution and other development pressures, is further threatened by progressive decimations of many marine species and populations.

Many Americans may be aware of the collapsed North Atlantic fisheries off New England and maritime Canada. The problem, though, is global and growing, and we know why: overfishing. The practice results from the tradition of free and open access to fishery resources that itself stems from the traditional principle of freedom of the seas. As a result of overfishing, too many fishermen and manufacturers now pursue and process fewer and fewer—and generally smaller—specimens. (See the sidebars for some details on the extent of overfishing and overcapacity of fishing fleets.) Can anything be done to turn this situation around?

### Property Rights As a New Paradigm

Broad command-and-control regulatory approaches, typically based on some version of open access, clearly are not working. Management areas, for instance, seem to be too large to reflect accurately the local conditions and interests of the fishermen themselves. Even when

control has been regionalized, as in the United States with its nine regional fisheries management councils, the decisionmaking powers tend to reside in those with vested interests in short-term gains rather than the long-term health of the fisheries. Ocean fisheries management needs the cooperation of those who work the seas, much as the preservation of terrestrial biodiversity and ecosystem management require the willing assistance of private landowners.

Would creating and using property rights among fishermen work to control both open access and overcapacity—and, thereby, overfishing? Systems could be designed to set quotas on catches permitted or limit the number of licenses issued. Such systems have in fact been used around the globe with increasing frequency since the 1970s, but mostly at local and regional levels. Such *rights-based fishing* assumes that fishermen, if allowed exclusive use rights and thus included more directly in fisheries management decisions, will clearly see the benefits of managing for the long-term health and productivity of their fisheries.

A leading proponent of this approach is economist Francis T. Christy, a founding researcher at RFF who coauthored *The Common Wealth in Ocean Fisheries* for RFF in 1965. The book foresaw conditions worsening through depletion of stocks, decreased economic returns, and increases in local conflicts.

Now an independent consultant in fisheries management and economics to such clients as the Food and Agriculture Organization of the United Nations and the International Institute for Fisheries Economics

and Trade, Christy sees rights-based fishing rapidly becoming the dominant paradigm throughout the industry. Such an approach can best reflect local and regional conditions and user needs. In his view, extending the use of these property-rights approaches throughout all fisheries is the most efficient way to control the entwined problems of open access and overcapacity (see the sidebar on the latter).

### Comparing Open and Closed Access

Managing fisheries based on open access, Christy contends, removes fishermen from the center of the stage where they belong. Public officials tend to encourage decisions that create and preserve jobs. Often these jobs are in the processing industries, whose owners have a vested interest in keeping the fishermen from having property rights, and thus some control over supply and pricing. Highly publicized “fishing derbies”—intensive, frenzied “seasons” of a few days or even less—have been a traditional management response to some collapsing fish stocks, but they do not give fishermen much leverage in the market with the processors.

Traditional fisheries management is further hindered by incomplete and imprecise biological information about the fish, as well as by the often prevailing notions that what’s good for the fish is good for humankind and that governments, given correct information, will make the correct decisions. Conservation controls, even when improving fish stocks, can damage economic interests and still not ultimately remedy overfishing. The status of the scientific information is such that management decisions tend to be risky and short term, based on a hope that a fishery’s condition might really be better than available information indicates. The need for impartial analysis, economic appraisals in particular, is too often ignored. Further, in some countries basic economic and social information—numbers of boats, or data on labor, wages, and prices—is sketchy or absent.

Existing management can, though, sometimes open itself to the input of fishermen to good effect. The North Pacific Management Council, one of the U.S. regional councils, has created with participating fishermen a quota system for several of the region’s fisheries. Where customers once could purchase only frozen fish from this region—the result of previously

constrained seasons—truly fresh Alaskan halibut, pulled from the water only 36 hours earlier, is now available in most cities. The fishermen share the benefit, since such a product is worth more on the market than the frozen version. Once the fishermen have greater involvement in fisheries management, notes Christy, they will have greater incentive to invest in and heed scientific advice.

Isolated instances to the contrary, however, problems are seemingly intractable—especially in the longest-used fisheries such as in the Northeast Atlantic. Some industry watchers contend that only by reaching the breaking point will certain fisheries be opened to new management solutions.

The fishing industry is characterized by its diverse groups of stakeholders, with few common, nonconflicting interests to be discerned even locally, and any management consensus is difficult to achieve. “The greater the reduction of the players, the greater the likelihood of common interests,” Christy observes. “So: narrow the field.” Creating property rights in fisheries is one way to do this.

### Controlling Access through Property Rights

The new paradigm of property rights for fisheries has as its core the relatively old-fashioned concept of exclusive use rights. Two basic approaches are available for creating some form of property rights for, and thus controlling access to, a given fishery. One is the use of *individual quotas* and especially individual transferable quotas; these seem to be the most widely used, and generally most successful, approaches. Simply put, the total allowable catch is estimated by management and divided into shares. Since one’s catch is fixed, so are one’s total revenues—hence a motivation to reduce harvesting costs. Alternatively, a *licensing limit* system could limit the means of access—generally, fishing vessels. This approach is best suited to a fishery with many ports or offshore opportunities to offload catch (such as New England’s), which make any quota system difficult to enforce.

Locally controlled user rights can help fine-tune these systems to ensure maximum sustainable net revenues or a certain level of employment. Exclusive user rights have long been used by small-scale local fishermen with fishery resources adjacent to their own community, especially for relatively sedentary animals

like shellfish. Expanding this to larger fisheries and more mobile sealife remains a challenge (although tuna companies in the Philippines have successfully controlled local access by limiting the type of fishing gear used). The goal in all cases, though, is to convey more authority for the use of a fishery, including monitoring and surveillance, to its primary users.

“The track record for individual quotas and individual transferable quotas is fairly good,” according to Christy. “They have led to increased rents and the removal of excess capital.” New Zealand has become the leader in ITQs, with thirty-two species-specific agreements. Australia is a close second: its division with Japan of much of the southern bluefin tuna fishery is illustrative. Using relatively low quota allocations, many in the Australian part of the fishery had to decide whether to buy more quota or sell out. In the two years following the start of the ITQ system for that fishery, the number of boats in use dropped by 50 percent. Researchers estimated that the capital so employed in the boats was \$10 to \$12 million less

than under other management schemes. The system also focused catches on larger, more valuable specimens, with the value of the catches increased three- to fourfold. (Highly esteemed by sushi diners, a premium bluefin can sell for between \$6,500 and \$11,000 at auctions in Tokyo.)

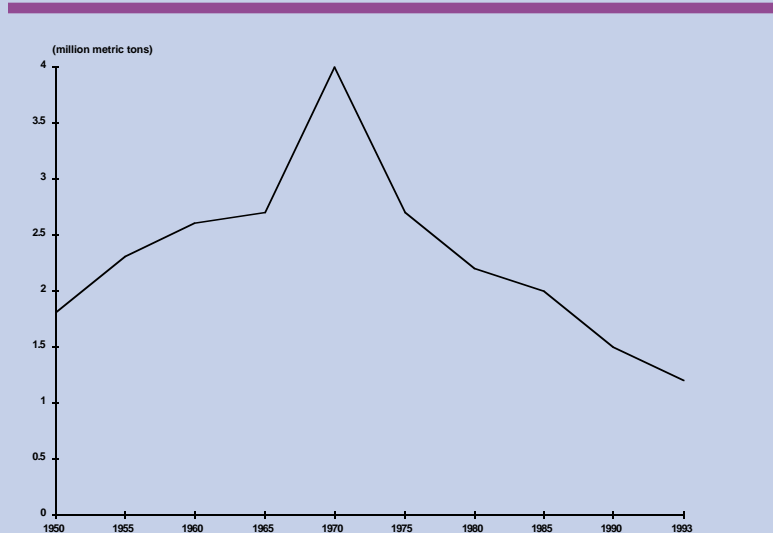
Although seemingly the simpler system, licensing limits require more prolonged government presence in management than quota systems. The Northern Australia prawn fishery has used license limits to good effect. Some government buy-backs of vessels along with other measures helped quickly trim the size of the fleet. Cooperative efforts, including research, between management and the fishermen succeeded in restraining the catch of smaller, lower-priced prawns, focusing instead on the larger ones. The result: enhancing the value of catches and allowing the biological renewal of the fishery.

### Some Problems

Unfortunately, bycatch—the inadvertent capture of unsought species—is not necessarily reduced substantially by either approach, though quotas could be set for bycatch to encourage fishermen to work other areas of the fishery with less bycatch potential or (in some fisheries) to invest in equipment that would minimize bycatch. Also, the introduction of a property-rights regime does not immediately, or even necessarily, result in a leveling out of the rate of fishery stock depletion. And those fish that move between the biologically arbitrary 200-mile-wide territorial waters and the high seas present another challenge to property-rights regimes, much as they do to the present system.

Enforcement also remains a problem, with the intrusions of foreign boats and fleets especially vexing. Poaching may always be with us, and assigning surveillance and monitoring to property owners seems unlikely to change that. Even more damaging and difficult to resolve can be legal fishing at the very edges of the 200-mile limit. Small-scale fishermen looking ever-farther afield can so intrude, as can “pirate” trawlers using illegal equipment such as fine-meshed nets. Usually however, the legal industrial fleets of huge trawlers present the greatest challenge. Designed to catch and process a ton or more per hour, these giants can effectively clean out much of any fishery. Negotiating and enforcing international agreements may prolong the full transition to a rights-based industry.

## Effects of Overfishing: Changes in Catches of Atlantic Cod, 1950–1993



One result of over four decades of intensive fishing shows up clearly in the status of this single species. During this same period, global harvests increased nearly fivefold: by 1993, more than two-thirds of the total global fish stocks were being fished at or beyond their maximum productivity levels. In six of the eleven major Atlantic and Pacific regions, over 60 percent of all commercial stocks have been depleted or fished to their limits. In the northwestern Pacific, all of the assessed fish stocks are in that state.

Sources: World Resources Institute, Food and Agriculture Organization of the United Nations (FAO).

Perhaps of greatest concern, instituting exclusive user rights creates winners and losers. Especially vulnerable are those who run smaller, more traditional fishing operations. Locally controlled use rights, though, can provide an alternative for smaller operations. In Argentina, for instance, competition among the some 200 families engaged in fishing for the domestic market was leading to lower prices. So, the families negotiated among themselves—first prices, then limits on landings, then other controls to make their market more effective. Some smaller Japanese fisheries have improved their management in a similar manner. Conflicts with foreign fleets, however, especially those with large factory ships, unfortunately can overshadow such efforts.

Would a “millionaire’s club” of megafleets, foreign or otherwise, be likely to take over commercial fishing under a property-rights scheme? Thus far, this seems not to have occurred. When such concentrations appear likely, governments could make use of antitrust powers, impose taxes and user fees on windfall profits, and also decide who gets retired user rights. Government can employ some fairly simple measures to prevent concentration. For instance, a one percent limit on quota transfers, combined with other limitations, has kept the rights to the northern Pacific halibut fishery well-distributed.

### Necessary Roles for Governments

While the role of governments would in time be substantially reduced in rights-based fisheries, the transition to a new system requires significant government involvement. Short-term actions will no doubt be needed to ease the disrupted lives of many through this transition even while encouraging the creation of property-rights systems for the long term. Reducing the size of management areas and bringing groups of fishermen into management decisions would be helpful. In particularly hard-hit fisheries, imposing moratoria on further investments and freezing fleets at existing capacity will be required to start the transition—as is being done for some of the devastated North Atlantic fisheries. Research into economic and biological alternatives for a fishery, as well as negotiating the redistribution of wealth and overlapping international interests, are other forms of government help.

## Overcapacity: How Much and Why?

*Overcapacity* in the fishing industry can be translated as too many boats chasing too few fish. More precisely: in 1993, FAO determined the total costs of the world’s fishing fleets as being \$54 billion greater than all the 1989 revenues from marine resources. That global fishing fleet is now estimated to be at least 30 percent (and perhaps as much as 100 percent) larger, according to Francis Christy, than is required to fully and efficiently harvest available ocean fishery resources.

The large-scale industrial fleets have expanded in the past twenty years at twice the rate as the increase in total catch. Much of this increase occurred after the extension to 200 miles of territorial waters in the 1970s; many nations thereafter began subsidizing the construction of new vessels and processing facilities. Small-scale fleets and subsistence fishers (many in developing nations) who generally fish in coastal waters, however, make nearly half of the total catch, most of which is used as a local food source. In addition, population growth and declining economic conditions in these coastal areas can increase the number of boats in a declining fishery.

*Sources:* Food and Agricultural Organization of the United Nations (FAO), World Resources Institute

Government subsidies will be required, but for disinvestment this time, not for the shipbuilding booms that have contributed to fleet overcapacity. Buying back quotas and even vessels is one way to go, and can work quickly: Australia and New Zealand have had success doing so to help clear the field as a prelude to establishing rights-based systems.

Applying property rights to fisheries management involves making difficult decisions and changes. Devolving centralized power to a more local level seldom goes smoothly. Creating property rights where none existed before inevitably becomes an issue of redistributing wealth that in turn could result in monopolization, hardly a politically profitable outcome. The alternative, however, of continuing the traditional (however unintentional) destruction of fisheries resources is ultimately unacceptable. While many realize that the industry must change to save itself, rights-based proponents describe a way that those within the industry—and predominantly those who do the fishing—can effect the needed changes, and not have them imposed from without. 🏞️