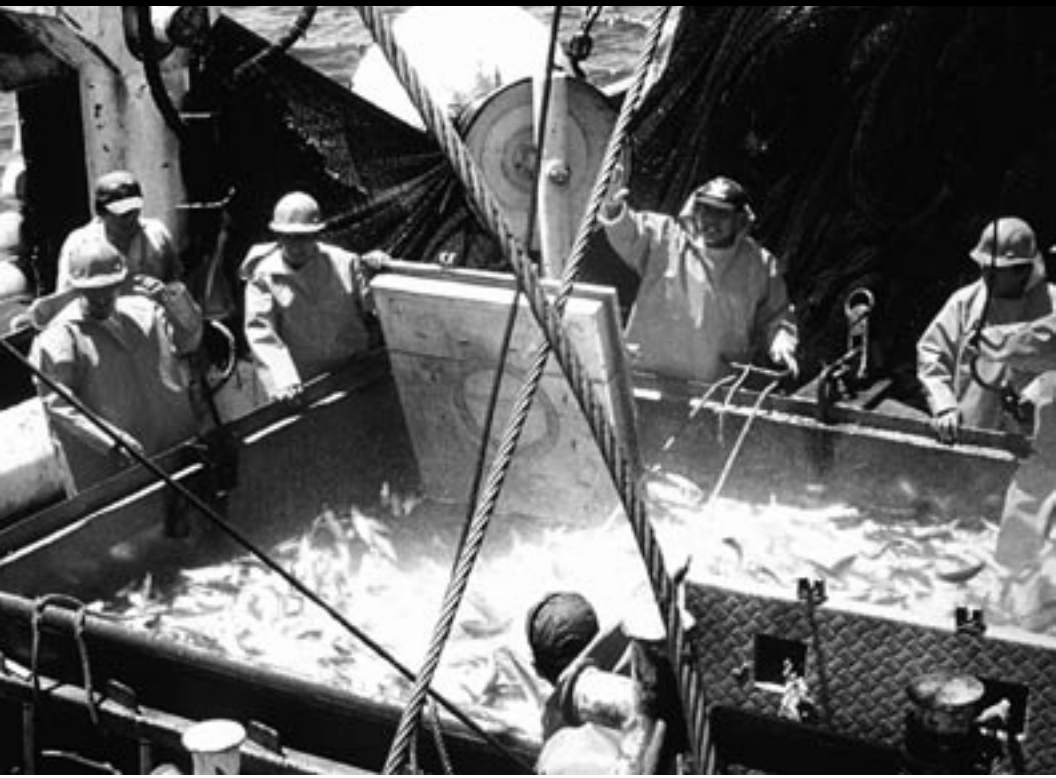
BUILDING A COALITION FOR IFQS



# Governing U.S. Fisheries with IFQs

By
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*A Guide for Federal Policy Makers*

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# IFQs

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## Building a Coalition for IFQs

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## To the Reader

Finally! A management tool that benefits fish and fishermen! Individual fishing quotas (IFQs) allow conservation goals to be met without strangling fishing operations with overly restrictive regulations. With IFQs, fishermen share management's goal of sustaining fish stocks.

Although their use may require additional managerial effort, IFQs have typically led to stronger monitoring and enforcement, better control of catches, and more reliable stock assessments. Moreover, as quota holders, fishermen are contributing their own resources to such improvements. IFQs are part of a category of arrangements currently called "limited access privileges."

Despite their benefits, IFQs have raised a number of concerns in the U.S. political arena. To address these concerns as well as provide information on how IFQs impact fishery participants, fisheries management, and marine resources, PERC, the Reason Public Policy Institute, and Environmental Defense's Gulf of Mexico Oceans Program have held a series of briefings for federal policy makers and their staffs. This booklet, *Governing the Fishery with IFQs*, is based on the third briefing.

The first briefing and the subsequent booklet, *Overcoming Hurdles to IFQs in U.S. Fisheries*, addressed three issues surrounding IFQs. These were: whether processor quotas are needed in an IFQ program; what restrictions, if any, should be placed on transferability of IFQs; and whether IFQs should be perpetual or of limited duration. The second briefing and the subsequent booklet, *The Ecological Role of IFQs in U.S. Fisheries*, showed how IFQs can improve the health of fish stocks and the marine environment.

The third briefing, held on Capitol Hill on April 19, 2005, featured three experts who discussed ways in which IFQs can improve fishery governance. This essay, *Governing the Fishery with IFQs*, stems from that seminar.

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# Governing the Fishery with IFQs

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United States fisheries off the East and West coasts, the Gulf of Mexico, and Alaska are managed by a complex structure that involves several governing bodies and spends considerable resources—some $600 million in direct federal expenditures annually. Sustainable fisheries and a healthy marine environment are two important goals of fishery governance. Unfortunately, the governing structure often operates under rules that interfere with a fisherman's ability to earn a living. The result is conflict rather than cooperation and, ultimately, failure to achieve these goals.

The governing structure includes the National Marine Fisheries Service (NMFS); eight regional councils, which are quasi-government bodies composed of representatives from commercial and recreational fishing sectors as well as federal, state, and coastal interests; fish and wildlife agencies of coastal states; and the U.S. Coast Guard, which shares responsibility with NMFS and the state agencies for monitoring and enforcing rules governing fishing. Two recent commission reports on U.S. ocean policy have proposed additional elements to improve fishery governance.[1] While neither agreeing nor disagreeing with these proposals, the authors of this essay believe that it is essential to end economic hardship for fishermen as well as improve the protection of the resources. Individual fishing quotas (IFQs) are one important means.

## Background

For years, fisheries management in the United States has relied on direct regulations to prevent overfishing. Restrictions have been placed on the size and power of fishing vessels, the types of fishing gear, the areas open to fishing, the times during which fishing is allowed, the amount of fish a vessel can land per fishing trip, and the catch characteristics for legally landing fish (e.g., minimum size). A modification of this regulatory approach has appeared in many fisheries in recent years. Called limited entry, it is a licensing system overlaid on existing fishing restrictions that limits the number of participants in the fishery.

The myriad of fishing restrictions has not eliminated overfishing. For 2004, the National Marine Fisheries Service reports that 48 major U.S. fish stocks, or 27 percent of the total, are either overfished, being fished unsustainably, or both (Office of Sustainable Fisheries 2005).[2]

One reason for these failures is that such controls have not eliminated the incentive that each fisherman faces to catch as many fish as

possible as quickly as possible (Leal 2002, 2–3). Fishermen continually search for ways that increase their ability to catch more fish quickly. Eventually they succeed, and the fishing power of the fleet overwhelms the regulatory controls in place.

Then a new round of tighter fishing restrictions is put in place to prevent overfishing. These controls eventually have to be replaced by even tighter controls because fishermen inevitably find new ways to catch more fish faster, effectively neutralizing the restrictions. And so the story goes. Each round of restrictions only sets the stage for another round of tighter ones.[3]

This process makes fishing less and less viable, as illustrated by the Alaska halibut fishery until the mid-1990s. Between 1970 and 1994, fishery managers shrank the fishing season. A season that at one time was spread over five to six months became just two or three 24-hour periods a year. With massive amounts of halibut landed in such a short time, prices sank, reducing fishermen's income and leaving consumers with mostly frozen halibut for the year. Fishing became perilous as fishermen were forced to go out in bad weather on the few days open to fishing. And despite the compressed season, the actual overall catch exceeded the target level in most years (Hartley and Fina 2001).

This deplorable situation changed when individual fishing quotas (IFQs) were implemented in the fishery in 1995. Under IFQs, a quota holder is entitled to catch a specified percentage of the total allowable catch (TAC), which fishery managers set each season. Thus, a fisherman who holds a 0.1 percentage share in the Alaska halibut fishery is entitled to catch 50,000 pounds of halibut if the total allowable catch is 50 million pounds. Because the quotas are transferable, current quota holders can adjust the size of their operations by buying and selling quotas, and those wishing to enter an IFQ fishery can buy or lease quotas from current quota holders. Those wishing to leave the fishery can sell their quota to other fishermen.

One of the many advantages of IFQs is that managers can prevent overfishing without resorting to increasingly tighter and

counterproductive restrictions. Indeed, once IFQs were adopted in the Alaska halibut fishery, the actual overall catch no longer exceeded the total allowable catch (Dinneford et al. 1999). Moreover, IFQs allowed managers to extend the halibut season from a few days a year to eight months a year. Fishermen could fish when market conditions were favorable and weather conditions good, and consumers could buy fresh halibut most of the year. These changes resulted in higher incomes for fishermen and safer fishing (General Accounting Office 2002; Hartley and Fina 2001).

## Compatible and Robust Governance

"With IFQs, fishermen are not forced to go against their self-interests."

*—David Austin McKinney**
*Deputy Special Agent-in-Charge*
*National Oceanic and Atmospheric Administration (NOAA)*
*Office of Law Enforcement, Southeast Enforcement Division*

Before the advent of IFQs, the emphasis in fishery governance was on biological goals, with little attention given to the economic factors influencing fishermen. The total allowable catch was set based on biological assessment of the exploited resource, and regulations were designed to constrain fishermen from exceeding the TAC. Often, as the regulations became stricter, fishermen found it more difficult to operate and maintain or enhance profits if they followed the regulations.

The result of tightening regulations was a growing incentive to cheat, says fisheries enforcement specialist Dave McKinney, who has served as an enforcement agent in fisheries with and without IFQs, including the Alaska halibut and sablefish fisheries. He offers the Gulf of Mexico red snapper fishery as an illustration.

Several years ago each vessel was required to adhere to a 2,000-pound catch limit of snapper per fishing trip (called a trip limit). It wasn't long before fishermen began breaking the trip-limit rule through various schemes. For example, a fisherman with more than the legal weight of snapper on board would off-load the legal 2000-pound portion dockside, then go back out for a short trip and return dockside to off-load the remainder (McKinney 2004, 7). The fisherman would find a buyer who was willing to purchase the remainder and either misreport the landing (assign it to another vessel) or not report it at all. Alternatively, the fisherman could sell the overage to restaurants, which are numerous along the Gulf and hard to track. Fishermen justify this violation of the rules on the grounds of economic hardship; the rules may prevent them from being able to generate enough revenues from a fishing trip to offset the expenses of fuel and crew.

The dramatic shrinkage of allowable fishing days per month in this fishery increases the incentive to violate the rules. A fisherman may want to work another job on certain days but cannot because those days are the only ones available to fish for snapper. This prevents the fisherman from achieving a desired level of income and enhances his or her willingness to cheat by fishing out of season.

McKinney sees IFQs as a way of giving fishermen more flexibility while still achieving a sustainable catch. For example, if stock assessments indicate that next season's catch must be reduced, the TAC is reduced and each fisherman's share of the TAC is reduced proportionally under IFQs. The length of the fishing season remains as long as it was before, however. The fishermen in the snapper fishery have the same time to fish as before, so they have the same chance to enhance their income by freely pursuing other income activities. Fishery governance in this case is in synch with the interests of fishermen, and the chances for a high level of compliance improve markedly, says McKinney.

Another benefit McKinney sees from IFQs is that they strengthen monitoring and enforcement in fisheries. For example, without IFQs,

U.S. fisheries management relies on handwritten "fish tickets" filled out by fishermen to record catches and other data during the season. The fish ticket system is fraught with problems, says McKinney. More often than not, the tickets are not filled out correctly or they get lost over time. The huge number of buyers around the Gulf creates numerous opportunities for selling illegally landed fish. McKinney estimates that 1 million pounds of illegally landed snapper escapes detection because under the "fish ticket" reporting system it is impossible to correlate landings with sold fish products.

According to McKinney, Alaska's halibut and sablefish fisheries under IFQs have adopted a more timely and accurate electronic data recording system. To be sure, operation and maintenance of the system contribute to higher overall management costs in the two fisheries under IFQs.[4] But the additional expense has resulted in more precise control of the TACs as well as more effective enforcement of violations in the two fisheries, says McKinney.

In 2007, the Gulf of Mexico red snapper fishery will operate under IFQs. It will be more difficult to sell products from illegally caught snapper. The system will require an approval code to identify any snapper product displayed in a retail counter as being derived from a legally landed fish, that is, from a fish that was caught and debited from a fisherman's quota. The approval code is carried through all stages of product development.

Governing fisheries with IFQs will not automatically end cheating, of course. Some critics charge that because IFQs increase profit levels, fishermen will have a greater interest in quota busting, poaching, and high grading. But these problems do not appear widespread in practice, and where they have been found, they seem to have been due to weak monitoring and enforcement, which can be corrected (Arnason 1994; Grafton 1996; National Research Council 1999, 351; and Jones 2003, 19). In New Zealand's rock lobster and abalone fisheries, stiffer penalties for violations, including loss of quota share, vessels, and equipment, substantially reduced illegal catches (National

Research Council 1991, 351).

Perhaps most important, cheating in traditionally regulated U.S. fisheries is linked to the economic hardship imposed on fishermen by regulations that have become overly restrictive.[5] IFQs are a way to eliminate or reduce this economic hardship.

## Sharing Management's Goal

"[With IFQs], fishers and fishery managers share the objective to ensure the resource is properly managed; we are all cats."

*—Bruce R. Turris**

*President, Pacific Fisheries Management Inc.*

*New Westminster, British Columbia*

As Canadian fisheries specialist Bruce Turris sees it, relying strictly on traditional tools (e.g., limits on vessels, gear, time, and area) to manage a fishery is like a game of cat and mouse between fishery managers and fishermen. Managers restrict fishing and fishermen respond by finding new ways of catching more fish. Fishery managers are always trying to build a better "mouse trap" to prevent overfishing, but in the long run the approach falls short of achieving effective fishery governance and sustainable fisheries.

A case in point, says Turris, is British Columbia's groundfish trawl fishery, where catches consist of more than 50 different groundfish species—primarily rockfish, flatfish, cods, elasmobranches, lingcod, and sablefish. Throughout the 1980s and early 1990s, managers tightened fishing restrictions in an attempt to offset increases in vessel horsepower, more lethal gear, and more sophisticated fish-finding equipment. In addition to vessel and gear restrictions, limits were placed on the number of fishing trips a vessel could take each month as well as the amount of each groundfish species a vessel could land per fishing trip.

With this approach, management of the fishery was beset with problems. Fishermen discarded fish whenever they exceeded their trip limits, and often these discards would go unreported due to inadequate monitoring. In other instances fishermen would simply not report their true catch when they exceeded the limits. As the fleet's ability to catch large amounts of fish in record time increased, managers reduced vessel catch limits per trip, but the smaller limits resulted in higher levels of unreported discards and misreported catches. The resulting poor quality of information on discards and catches, coupled with fewer fishery-independent surveys of stocks and shrinking government resources for stock research, made stock assessments quite unreliable.

Fishermen were finding it increasingly difficult to operate at a profit. Fishing costs continued to escalate as fishermen were forced to make more fishing trips to achieve desired catches with smaller vessel catch limits per trip. Revenues fell as fishermen under the smaller limits found it next to impossible to serve the market with consistent supplies of high quality fish. They were losing market share and profits were plummeting. And despite tighter restrictions, managers were finding it impossible to control the harvest. Coast-wide and stock-specific annual catch targets were being exceeded by more and more each year, says Turris.

In September 1995, the groundfish trawl fishery was closed for the first time due to significant harvest overages. The closure lasted five months and when it reopened in early 1996, the Canadian federal government's Department of Fisheries and Oceans (DFO) issued new requirements. These included mandatory on-board observers for all fishing trips (to assess fish discard levels) and mandatory dockside monitoring of all landed catches. These and other changes increased monitoring costs by an average of $21,000 per vessel, which the industry was required to pay. In addition, the government increased license fees from $10 per vessel to over $7,000 per vessel.

These costs forced the industry, already struggling with poor eco-

nomic returns, to consider a management change to regain economic viability. In 1997, the Department of Fisheries and Oceans and the industry agreed to implement IFQs in the fishery.

IFQs resulted in a dramatic turnaround. IFQs allowed managers to get rid of trip limits and other measures that hampered timely delivery of high quality fish. Prices paid to fishermen for their catch rose—substantially for some species, such as Pacific Ocean perch. Fishing costs declined as fishermen were no longer forced to take more than the minimum fishing trips needed to land their quotas. Catch targets for each species were no longer being exceeded. Discards dropped substantially as fishermen found new ways to fish more selectively under new incentives to record and deduct discards tied to IFQs.[6]

In addition, the quantity and quality of information on catches and stocks increased substantially, thanks to 100 percent monitoring of vessels at sea and dockside, which was funded by the industry at $3 million per year. More high-quality data on stocks and catches plus industry-funded research and stock assessments costing $1 million per year put fishery managers in a much better position to set sustainable catch levels.

Similar success stories are found in a host of other Pacific Coast Canadian fisheries under IFQs.[7] For example, before IFQs, fishermen in the British Columbia sablefish fishery had a 14-day season. The hectic pace of fishing and short season resulted in market gluts and poor product quality, which meant low prices paid to fishermen. These, coupled with rising fishing costs, caused profits to sink. In addition, management and research suffered from a lack of resources. Dockside monitoring of landings was practically nonexistent.

With IFQs, however, the sablefish season was extended to twelve months and fishing was no longer hectic. Gluts disappeared, product quality rose, and fishing costs stabilized. Dockside monitoring of landings is now conducted by a private company funded by fishermen. Fishermen also fund a comprehensive research and stock assessment program (Jones 2003, 36–7).

## Taking Up the Challenge

"In New Zealand, where government provides the flexibility and opportunity to the rights [IFQ] holders, they are quick to take up the management responsibility."

*—Michael Arbuckle*[*]
*General Manager, Fisheries Management Group*
*New Zealand Ministry of Fisheries*

Besides IFQs, another global trend in fisheries is the move by governments to devolve certain key managerial functions to the users themselves, referred to as "co-management." Devolution is occurring because the traditional, top-down approach to fisheries management has not worked well, says economist Jon Sutinen (2001). Moreover, such management has become too costly for many governments to carry out. Co-management is taking place in New Zealand, the Netherlands, Sweden, Denmark, Norway, Canada, and the United Kingdom.[8]

In New Zealand, a combination of IFQs and co-management has revolutionized fishery governance. At this time of writing, more than 93 species (550 fish stocks) are managed with IFQs, and co-management is occurring through the activities of commercial stakeholder organizations (CSOs). These are organizations formed and funded by IFQ holders primarily to carry out fisheries management and research. Michael Arbuckle, general manager at New Zealand's Ministry of Fishery, says there are now about 33 such organizations in New Zealand.[9]

One of these is the Orange Roughy Management Company (ORMC). The company was established in 1991 by quota holders with an initial focus on developing the orange roughy fishery located off New Zealand's South Island and improving its management.[10] The mission of ORMC has since been expanded to include other orange roughy management areas as well as three other deepwater species—smooth, black, and spiky oreo. Thanks to IFQs and co-management, New Zealand's deepwater fisheries

yield sustainable catches worth $67 million annually (Clement 2003).

The Ministry of Fisheries sets an annual total allowable catch for each targeted species in each management area. However, many areas are large and encompass many individual stocks and geographic features. An area-wide TAC is therefore not sufficient to ensure that fishing is sustainable within stocks or on particular features such as seamounts, where fish tend to congregate. So, instead of the government setting, administering, and enforcing catch limits for an individual stock or particular location, ORMC carries out these responsibilities. When local stock levels are found to be too low, civil contracts between ORMC, quota owners, and the government reduce these sub-area catch limits, sometimes to zero (Clement 2003).

ORMC also funds considerable research on the fish stocks and their habitat through self-imposed levies on quota holders. For example, the company financed acoustic side-scan sonar mapping of the sea floor to identify new fishing areas and to understand the geographic features that may establish new local stocks. The company currently funds research to estimate age and growth more precisely and contracts for stock assessments from scientific sources that are independent of the government and that use acoustic stock surveys, trawl surveys, egg surveys, and catch sampling data (Townsend 2005, 139).

IFQs reinforce the commitment of the commercial stakeholder organizations because enhancing fish stocks increases the value of IFQs held by company shareholders. Challenger Scallop Enhancement Company Ltd. (Challenger), for example, is composed of the 32 owners of IFQs in the southern scallop fishery located in New Zealand's Golden Bay, Tasman Bay, and Marlborough areas. Challenger's stated purpose is to maximize and sustain the value of IFQs through fisheries management and research. The company is funded through a self-imposed levy on quota holders of up to 20 percent of annual earnings (Arbuckle and Metzger 2000).

From a platform of secure IFQs, Challenger has been able to operate a highly successful scallop enhancement and rotational fishing program

aimed at achieving maximum economic yield.[11] Under this program, there are no normal catch targets based on maximum sustainable yield. Instead, subject to approval by the Minister of Fisheries and shareholder consent, Challenger administers catch limits within areas of the fishery, enhances the scallop stock through scallop reseeding, decides which areas will be harvested and which will be closed, decides the timing of the catch, imposes penalties for rule violations, and carries out research (Sharp 2005, 205–8).

Notably, the closer IFQs are to being both secure and durable the stronger the incentive is for fishermen to invest their time and money in improving fish stocks through co-management. Such is the case in New Zealand, where IFQs are considered property rights. Fishery policy there has been quite supportive of co-management. In the area of research, for example, the 1996 Fisheries Act requires decision makers to take into account the "best available information," whether collected by the government or some other approved party. This provision ensures that IFQ-holder-led initiatives, such as privately funded research, cannot be ignored.

A common thread running through studies of co-management and IFQs in New Zealand is the strong desire among fishermen to improve the fishery through better management and research. Such cooperation and support are often missing in the traditional, top-down managed fishery where the government assumes the entire role for fisheries management and research. Fishermen frequently are suspicious of the science as well as the measures that are used to control fishing because they have provided little input to either (Sutinen 2001).

## Conclusion

IFQs have much to offer when it comes to fishery governance. When fishermen are being squeezed by overly restrictive regulations they are more likely to cheat, which reduces the effectiveness of

the regulations. IFQs address this problem by allowing conservation goals to be met without forcing fishermen onto a treadmill of ever tightening restrictions.

A well designed system for tracking individual catches and quotas is a necessity for IFQ programs to work. Developing such a system has immediate payoffs in terms of stronger monitoring and enforcement, better control of catches, and more reliable stock assessments when compared to traditionally regulated fisheries. Furthermore, because their quota values depend on effective governance, fishermen have a direct stake in improving all three of these areas, and have done so directly in New Zealand and Canada.

As three experts in fishery governance have shown in this essay, IFQs offer significant improvement in governance of U.S. fisheries as well as in New Zealand and Canada.

## Notes

* *Speaker at luncheon seminar, "The Role of IFQs in Improving Fishery Governance," Tuesday, April 19, 2005, the Longworth House Office Building, Washington DC.*

1. These reports are the Pew Oceans Commission Report, released in 2003, and the U.S. Commission on Ocean Policy, issued in 2004.
2. A major fish stock is one that has annual landings of 100,000 pounds or more.
3. For a classic example of how limited entry along with other fishing restrictions failed to curtail fleet investment, see Grafton, Squires, and Fox (2000).
4. In 2003, $3.2 million, or about 1.4 percent of the $236.5 million dockside value of the combined catch of halibut and sablefish was spent managing IFQs in the two fisheries. Of the total

spent on management, 51.6 percent was spent on enforcement and 42.7 percent was spent tracking who held what quotas. See Government Accountability Office (2005, 8–9).

5. For example, over the past several years law enforcement officers have seen a rise in egregious violations in the Gulf of Mexico red snapper fishery, an indication that cheating is on the rise. See McKinney (2004, 6).
6. All discarded fish considered marketable are recorded by onboard observers and deducted from the quota owned or leased by fishermen. This policy of counting discards against quota allocations has given fishermen added incentive to fish more selectively.
7. Other Canadian cases of improved governance under IFQs can be found in Jones (2003).
8. U.S. federal fisheries are not noted for co-management. One exception is the North Pacific pollock fishery. Participants in the Pollock Conservation Cooperative (a private harvest agreement that works very much like an IFQ) have collaborated with the National Marine Fisheries Service to develop bycatch exclusion devices, fund research to understand the Bering Sea ecosystem, improve stock assessment models, and examine factors involved in the decline of Stellar sea lion populations. The cooperative has also implemented an innovative privately administered strategy for reducing salmon bycatch.
9. A list of other CSOs, along with descriptions, can be found at www.seafood.co.nz/industry/.
10. Orange roughy is a deepwater species caught at depths between 800 and 1,200 meters. Such species are believed to be slow growing, with low reproductive rates, so they are vulnerable to overfishing.
11. It is estimated that up to 90 percent of all scallops taken from the fishery are from seeded stock. Spat (young scallops) seeded within the nine area sectors are left by the commercial fleet for up to three years before harvest. See Sharp (2005).

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# Governing U.S. Fisheries with IFQs

Coastal fisheries are managed through a complex structure that involves several governing bodies and spends considerable resources—some $600 million in direct federal expenditures annually. Two goals of this governance are sustainable fisheries and a healthy marine environment. Unfortunately, the rules of governance have often become so restrictive that fishermen's lives and livelihoods are in jeopardy. The result is hostility rather than cooperation and in many cases failure to achieve these long-term goals.

This booklet discusses how governing the fishery with individual fishing quotas, or IFQs, can make governance sensible and fishing sustainable. Written by Donald R. Leal, Michael De Alessi, and Pamela Baker, it is based on a 2005 congressional briefing sponsored by the Property and Environment Research Center (PERC), the Reason Public Policy Institute, and Environmental Defense. The briefing featured three experts in fisheries management, David Austin McKinney, Bruce R. Turris, and Michael Arbuckle, each of whom has had pivotal roles in the transition to IFQs. Their observations and insights are reflected in this essay.

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