March 2005

INDIVIDUAL FISHING QUOTAS

Management Costs Varied and Were Not Recovered as Required
Fiscal year 2003 management costs varied considerably among IFQ programs. According to fishery managers, halibut and sablefish program costs were higher and surfclam/ocean quahog program costs were lower, when compared with pre-IFQ management costs. Although complete cost information was not available, GAO aggregated cost estimates from information provided by NMFS and other organizations involved in IFQ-related activities and estimated that fiscal year 2003 IFQ management costs were at least $3.2 million for the Alaska halibut and sablefish program, $274,000 for the surfclam/ocean quahog program, and $7,600 for the wreckfish program. While NMFS does not systematically track the costs of managing IFQ programs and does not have complete information on pre-IFQ management costs, fishery managers said management costs were greater under the halibut and sablefish IFQ program than under pre-IFQ management, in part, because of the IFQ program's complex rules. In contrast, fishery managers said costs were less under the surfclam/ocean quahog IFQ program than under pre-IFQ management, in part, because the simplicity of the program's design made it easier to monitor compliance. Moreover, according to fishery managers, NMFS incurred additional costs for the development and initial implementation of both programs.

NMFS is not recovering management costs as required by the Magnuson-Stevens Act for two of the three IFQ programs. Under the act, as amended by the 1996 Sustainable Fisheries Act, NMFS is required to recover the "actual costs directly related to the management and enforcement" of all IFQ programs. NMFS has implemented cost recovery for the halibut and sablefish program, but it has not done so for the surfclam/ocean quahog or wreckfish programs. NMFS officials said that cost recovery for the surfclam/ocean quahog program has been a low priority and very few people were fishing wreckfish. Also, the Magnuson-Stevens Act does not define "actual costs directly related to the management and enforcement" of an IFQ program. NMFS has interpreted the term to mean those costs that would not have been incurred but for the IFQ program (i.e., the incremental costs). However, another way to interpret the term "actual costs directly related to" is full costs. Under a "full cost" approach, NMFS could have recovered more costs of managing the IFQ program.

Several methods are used for sharing IFQ management costs between government and industry. These methods principally fall into three categories: user fees, quota set-asides, and devolution of services. Under user fees, government recovers costs by collecting a fee from the quota holder or fisherman. Under a quota set-aside, certain amount of quota each year, lease the set-aside quota to fishermen, and use the revenue to pay for program management costs. Finally, under devolution of services, management services previously performed by government, such as monitoring compliance with individual catch limits, are transferred to industry.
Abbreviations

IFQ       individual fishing quota
NMFS      National Marine Fisheries Service
NOAA      National Oceanic and Atmospheric Administration
March 11, 2005

The Honorable Olympia J. Snowe
United States Senate

The Honorable John F. Kerry
United States Senate

Overfishing is a problem with significant environmental and economic consequences. When a fishery—one or more fish stocks within a geographic area—cannot be sustained because of overfishing, the marine ecosystem in which those stocks live can be harmed, and fishermen and their communities can experience economic hardship. Yet, about one-third of the U.S. fish stocks assessed by the National Marine Fisheries Service (NMFS), within the Department of Commerce’s National Oceanic and Atmospheric Administration (NOAA), are overfished or approaching an overfished condition. Greater competition for fewer fish increases the likelihood that stocks will decline further and catches will decrease.

One of the causes of overfishing is the excessive investment in fishing capacity, such as when there are more boats than the fishery can support. An individual fishing quota (IFQ) is one of the management tools available to help reduce overcapacity and promote conservation. Today, several countries, including the United States, use IFQ programs to manage fisheries within their 200-mile exclusive economic zone (see apps. II and III). In the United States, IFQ programs are developed primarily by regional fishery management councils established by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) in 1976 and implemented by NMFS. Under an IFQ program, fishery managers set a total allowable catch in a particular fishery on the basis of fish stock assessments and other indicators of biological productivity, and the managers then allocate quota—the privilege to harvest a certain portion of the catch—to eligible boats, fishermen, or other recipients. IFQ program rules often allow a quota holder to transfer quota by sale, lease, or other methods. Such transfers are expected to reduce the number of fishermen and boats and consolidate the quota among the more efficient fishermen.

At the time of our review, NMFS had implemented three IFQ programs: the Mid-Atlantic surfclam/ocean quahog program in 1990, the South Atlantic wreckfish (snapper-grouper complex) program in 1992, and the Alaskan halibut and sablefish (black cod) program in 1995. In addition, at the time of our review, an IFQ program had been approved but not yet implemented for the Bering Sea crab; an IFQ program was being developed for the Gulf
of Mexico red snapper; and IFQ programs were being considered for other commercial fisheries, such as the Gulf of Alaska groundfish (e.g., pollock, cod, and sole).

IFQ programs have achieved many of the desired conservation and management benefits, such as helping to stabilize fisheries and reducing excessive investment in fishing capacity. However, these programs have also raised concerns, such as the costs of IFQ management and the equity of gifting a public trust resource to a select group of beneficiaries.

This is the third in a series of reports you requested on IFQ programs as Chairman and Ranking Minority Member of the former Subcommittee on Oceans, Fisheries, and Coast Guard, Senate Committee on Commerce, Science, and Transportation. In December 2002, we reported on the extent of consolidation of quota holdings, the extent of foreign holdings of quota, and the economic effect of IFQ programs on seafood processors.¹ In February 2004, we reported on methods available for protecting the economic viability of fishing communities and facilitating new entry into IFQ fisheries, key issues facing fishery managers in protecting communities and facilitating new entry, and the comparative advantages and disadvantages of the IFQ system and the fishery cooperative approach.² For this report, you asked us to (1) determine the costs of managing (i.e., administering, monitoring, and enforcing) IFQ programs and how these costs differ from pre-IFQ management costs; (2) determine what, if any, IFQ management costs are currently being recovered by NMFS; and (3) assess ways to share the costs of IFQ programs between government and industry.

To conduct this review, we visited locations in Alaska, Florida, Massachusetts, New Jersey, and South Carolina. We selected these sites to obtain broad geographic coverage for the three domestic IFQ programs. In these locations and elsewhere, we interviewed fishery participants; officials at NMFS, the U.S. Coast Guard, and state enforcement agencies; representatives of the International Pacific Halibut Commission; and fishery council staff. In Alaska and New Jersey, we visited ports where we observed offloads of IFQ fish. In addition, we obtained information from


government officials from Australia, Canada, and New Zealand because these countries share fishery management costs with the fishing industry. Because NMFS does not systematically track IFQ management costs, we estimated these costs from information that we gathered for fiscal year 2003 from NMFS and other organizations involved in IFQ-related activities. Since the data we received appeared reasonable, given differences among the programs, and were consistent with explanations of program operations and costs provided by agency officials, we concluded that these data were sufficiently reliable for purposes of this report. See appendix I for additional details on our scope and methodology. We conducted our review from February through December 2004 in accordance with generally accepted government auditing standards.

**Results in Brief**

IFQ management costs for fiscal year 2003 varied by program and, according to fishery managers, when compared with pre-IFQ management costs, were higher for the halibut and sablefish program and lower for the surfclam/ocean quahog program. Although complete cost information was not available, we aggregated cost estimates from information provided by NMFS and other organizations involved in IFQ-related activities and estimated that the fiscal year 2003 management costs of (1) the Alaskan halibut and sablefish IFQ program amounted to at least $3.2 million, or 1.4 percent of the dockside (known as ex-vessel) value of the catch, and (2) the surfclam/ocean quahog program amounted to at least $274,000, or less than 0.5 percent of the ex-vessel value. Wreckfish program cost estimates amounted to $7,600, in part, because only two boats were fishing wreckfish in 2003. Because NMFS does not systematically track the costs of managing IFQ programs and does not have complete information on pre-IFQ management costs, we could not evaluate the difference between IFQ and pre-IFQ management costs. However, fishery managers told us that halibut and sablefish management costs were greater under the IFQ program than under pre-IFQ management, in part, because of the program's complexity and longer fishing season. In contrast, fishery managers said surfclam/ocean quahog management costs were less under the IFQ program when compared with pre-IFQ management, in part, because the simplicity of the program's design made it easier to monitor compliance. Information on how wreckfish management costs changed with the introduction of the IFQ program was not available. In addition to the annual costs of managing IFQ programs, according to fishery managers, NMFS and the fishery management councils incurred additional costs to develop the halibut and sablefish and the surfclam/ocean quahog IFQ programs and implement them during the initial years. For example,
according to Mid-Atlantic Fishery Management Council staff, during each year of development of the surfclam/ocean quahog IFQ program, council staff spent more than twice as much time as they spent during fiscal year 2003 to manage the IFQ program. According to a NMFS official, by the end of the second year of the halibut and sablefish IFQ program, NMFS’s Alaska Region was dedicating the equivalent of five or six full-time staff to manage the 170 appeals regarding halibut and sablefish quota allocations, whereas the region currently receives only 1 or 2 appeals each year.

NMFS is not recovering management costs for two of the three IFQ programs as required by the Magnuson-Stevens Act. Under the act, as amended by the 1996 Sustainable Fisheries Act, NMFS is required to collect a fee, not to exceed 3 percent of the ex-vessel value of the fish harvested, to recover the “actual costs directly related to the management and enforcement” of all IFQ programs. While NMFS has implemented cost recovery for the halibut and sablefish program, it has not implemented cost recovery for the surfclam/ocean quahog or wreckfish programs. NMFS officials told us that (1) they considered cost recovery for the surfclam/ocean quahog program to be a low priority and (2) very few people were fishing wreckfish. We are recommending that NMFS implement cost recovery for all programs as required. Also, the Magnuson-Stevens Act does not define “actual costs directly related to the management and enforcement” of an IFQ program. NMFS has interpreted the term to mean those costs that would not have been incurred but for the IFQ program (i.e., the incremental costs). Under this interpretation, NMFS does not include, for example, the cost of performing the sablefish stock assessments because these assessments would be done regardless of whether or not the fishery was managed under an IFQ program. Applying the “incremental costs” approach, NMFS identified and recovered about $3.2 million in halibut and sablefish program costs for fiscal year 2003. However, another way to interpret the term “actual costs directly related to” is full costs. Under a “full cost” approach, NMFS could have recovered more costs of managing the IFQ program. If the Congress would like NMFS to recover other than incremental costs, it may wish to clarify the IFQ cost recovery fee provision of the act.

Several methods are used for sharing the costs of IFQ management between government and industry, each of which has advantages and disadvantages. These methods principally fall into three categories: user fees, quota set-asides, and devolution of services. Under the user fee method, government recovers costs by collecting a fee from the quota holder or fisherman. While user fees distribute management costs to the
immediate beneficiaries of the program, they directly affect a fishing firm’s profitability. Several countries, including the United States, recover IFQ management costs through user fees, but the features of each user fee program vary. Under the quota set-aside method, government can set aside (i.e., not allocate) a certain amount of quota each year and lease the set-aside quota to fishermen, using the resulting revenue to pay for program management costs. A set-aside program does not necessitate the collection of fees from each quota holder. However, if the value of the quota is too low, the government may not raise enough funds to cover the IFQ management costs. Finally, under the devolution of services method, management services previously performed by government, such as monitoring compliance with individual quota limits, are transferred to industry. Giving industry responsibility for such management services could reduce concerns about potential government inefficiencies. However, by devolving services to industry, government may be further removed from enforcement, making it a greater challenge to ensure that industry is complying with the program rules.

In commenting on a draft of this report, NOAA said that the report was well researched and presented, and was responsive to the specific requests made by the Congress. NOAA generally agreed with our findings and recommendations. NOAA agreed to work with the Mid-Atlantic and South Atlantic Fishery Management Councils to implement cost recovery for the surfclam/ocean quahog and wreckfish IFQ programs. NOAA also agreed to develop guidance regarding which costs are to be recovered, because it will ensure the appropriate costs will be measured in a consistent manner in all fisheries. NOAA’s comments appear in appendix IV.

Background
The Magnuson-Stevens Fishery Conservation and Management Act provides for the conservation and management of fishery resources in the United States.³ Under the act, eight regional fishery management councils—the New England, Mid-Atlantic, South Atlantic, Gulf of Mexico, Caribbean, Pacific, North Pacific, and Western Pacific councils—are responsible for developing plans for managing fisheries in federal waters.⁴ To develop their plans, the councils each use a collaborative process that


⁴“Federal waters” refers to those fishing areas covered by the Magnuson-Stevens Act in which the United States claims exclusive fishery management authority.
involves advisory committees, public hearings, and other means to ensure that interested parties have an opportunity to provide input. Council staff then analyze the information for use in plan development. Once a council adopts a plan, NMFS drafts regulations to implement the plan. The council then submits the plan and regulations to the Secretary of Commerce for approval. The Secretary reviews the plan and proposed regulations for consistency with U.S. law and with each other. The plan and proposed regulations may then be published for public comment. Plans may be fully or partially approved, or disapproved and returned to the council for revision. If approved, regulations must be issued for implementation.

Once a fishery management plan is approved, NMFS is responsible for implementing it. In the case of an IFQ program, NMFS must set up the systems for collecting annual permit, logbook, and fish dealer data; obtain records of qualifying catches and other information to determine eligibility to hold quota share; process initial requests for quota; and issue the initial quota share. The quota share represents a percentage of the total allowable catch for the fishery, which a fishery management council sets—typically each year—subject to NMFS’s confirmation. To set the total allowable catch, the council relies on stock assessments performed by one of the NMFS regional fisheries science centers. In the case of the halibut fishery, the International Pacific Halibut Commission performs the stock assessment and sets the total allowable catch.

Once a fishery management plan becomes operational, NMFS is responsible for administering it. Administrative activities unique to an IFQ program include, among others, calculating and distributing the annual quota allocations, approving and processing quota transfers, and monitoring compliance with program requirements. In addition, administrative activities in early IFQ program years may include adjudicating appeals of the initial allocation. Both NMFS and the councils have responsibility for monitoring existing plans and proposing any changes for approval and implementation by NMFS.

NMFS shares responsibility with the U.S. Coast Guard and state agencies for enforcing the rules of a fishery management plan. For an IFQ program, the Coast Guard generally conducts at-sea and aerial surveillance of fishing activities, and NMFS contracts with state agencies to assist its Office for Law Enforcement with inshore activities, such as monitoring the landings for compliance with individual catch limits. NMFS also audits the paper trail (consisting of logbook, landings, and buyer records) created by the IFQ program.
The 1996 Sustainable Fisheries Act amended the Magnuson-Stevens Act to require the Secretary of Commerce to recover “actual costs directly related to the management and enforcement” of IFQ programs.\(^5\) The act limits cost recovery fees to 3 percent of the ex-vessel value of fish harvested under any IFQ program and further requires that the fees be collected at the time of landing, at the time of filing a landing report, at the time of sale during a fishing season, or during the final quarter of the year when the fish is harvested. In addition, the Secretary is authorized to reserve up to 25 percent of the fees collected for use in an IFQ loan program to help finance the purchase of quota share by entry-level fishermen and fishermen who fish from small boats.

### Depending upon the IFQ Program, Management Costs Were Higher or Lower Than Pre-IFQ Costs

Estimated IFQ management costs for fiscal year 2003 varied by program and, according to fishery managers, when compared with pre-IFQ management costs, were higher for the halibut and sablefish program and lower for the surfclam/ocean quahog program. Whether management costs were higher or lower than under the previous fishery management system depended, in part, on the characteristics of the fishery, as well as program complexity. Also, according to fishery managers, both the fishery management councils and NMFS incurred additional costs associated with the development and implementation of the halibut and sablefish and surfclam/ocean quahog IFQ programs.

### IFQ Management Costs Varied by Program

We aggregated cost estimates for each IFQ program on the basis of information provided by various organizations and estimated that the management costs for fiscal year 2003 ranged from a high of at least $3.2 million for the halibut and sablefish program to a low of $7,600 for the wreckfish program. Since NMFS does not systematically track the costs of IFQ programs or the time spent on IFQ activities, we requested cost information from NMFS and other organizations that performed IFQ-related activities during fiscal year 2003. However, these organizations did not or could not provide cost information for all of their IFQ-related activities. (See app. I for information on the organizations that provided data.) The estimated management costs shown in table 1 varied significantly by program, in part, because of differences in the number of program participants and program design. For example, the halibut and

The sablefish program had the largest number of quota holders—about 4,300—and a complex set of rules designed, in part, to protect the owner-operator character of the fleet, such as limits on the amount of quota an individual could hold and restrictions on who could receive quota transfers. In contrast, the surfclam/ocean quahog program had no more than 120 quota holders and a simpler set of rules designed, in part, to minimize government regulation.6

Table 1: Estimates of IFQ Management Costs by Program and Organization, Fiscal Year 2003

<table>
<thead>
<tr>
<th>IFQ program</th>
<th>Halibut and sablefish (4,311 quota holders)a</th>
<th>Surfclam/ocean quahog (120 quota holders)</th>
<th>Wreckfish (25 quota holders)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Amount Percent</td>
<td>Amount Percent</td>
<td>Amount Percent</td>
</tr>
<tr>
<td>NMFS administration and review</td>
<td>$1,379,100 42.7</td>
<td>$196,000 71.5</td>
<td>$7,600 100.0</td>
</tr>
<tr>
<td>NOAA legal</td>
<td>b</td>
<td>b</td>
<td>b</td>
</tr>
<tr>
<td>NMFS enforcement</td>
<td>1,665,700 51.6</td>
<td>14,400 5.3</td>
<td>b</td>
</tr>
<tr>
<td>International Pacific Halibut Commission</td>
<td>167,100 5.2</td>
<td>c</td>
<td>c</td>
</tr>
<tr>
<td>Fishery management councilsd</td>
<td>19,100 0.6</td>
<td>54,400 19.8</td>
<td>b</td>
</tr>
<tr>
<td>Total</td>
<td>$3,231,000 100.1</td>
<td>$274,200 100.0</td>
<td>$7,600 100.0</td>
</tr>
</tbody>
</table>

Source: GAO compilation of cost information provided by NMFS, NOAA, the International Pacific Halibut Commission, and the North Pacific and Mid-Atlantic Fishery Management Councils.

Note: Dollar amounts have been rounded to the nearest $100, and percentages may not total 100 because of rounding.

aAccording to NMFS data, there were 3,435 halibut quota holders and 876 sablefish quota holders as of December 31, 2003. Persons holding both halibut and sablefish quota are counted twice in the total.

bNo cost information was provided.

cThe International Pacific Halibut Commission conducts no activities related to the surfclam/ocean quahog and wreckfish IFQ programs.

dCouncil costs for IFQ-related activities can vary by year. During fiscal year 2003, for example, the North Pacific Council spent less time on the halibut and sablefish IFQ program, so its IFQ costs were lower than usual, whereas the Mid-Atlantic Council spent time setting multiyear catch limits for the surfclam/ocean quahog fisheries, so its IFQ costs were higher than usual.

According to NMFS data, there were a total of 120 quota holders in the two fisheries. However, we reported in 2002 that there were fewer quota holders than NMFS data indicated, because different quota holders of record are often part of a single corporation or family business that, in effect, controlled many holdings. See GAO-03-159.
On the basis of information provided to us by NMFS and other organizations involved in IFQ-related activities, we determined that the $3.2 million spent in fiscal year 2003 to manage the halibut and sablefish program represented about 1.4 percent of the $236.5 million ex-vessel value of the halibut and sablefish catch. Of the total spent to manage the program, about 51.6 percent, or $1.7 million, was spent on NMFS enforcement activities, such as dockside monitoring, and 42.7 percent, or $1.4 million, was spent on NMFS administrative activities, such as managing IFQ permits and quota share transfers. The remaining 5.8 percent, or $186,100, was spent by the International Pacific Halibut Commission to conduct halibut stock assessments, among other things, and the North Pacific Fishery Management Council to perform IFQ-related management activities, such as reviewing and revising the program.\(^7\)

The reported fiscal year 2003 management costs for the surfclam/ocean quahog IFQ program totaled about $274,000 and represented about 0.45 percent of the $60 million ex-vessel value of the surfclam and ocean quahog catch. NMFS administrative and review activities constituted about 71.5 percent, or $196,000, of the cost, whereas NMFS enforcement activities amounted to about 5.3 percent, or $14,400. The remaining 23.2 percent, or $64,800, consisted of costs incurred by the Mid-Atlantic Fishery Management Council to review and amend the program and by NOAA's Northeast Regional Counsel to provide legal advice on measures considered by NMFS and the Mid-Atlantic Council.\(^8\)

The wreckfish IFQ program cost estimates totaled about $7,600 for fiscal year 2003. Only two boats fished wreckfish during the 2003 fishing season. However, since NMFS cannot disclose ex-vessel value for fewer than three participants for confidentiality reasons, estimated wreckfish costs as a percentage of ex-vessel value were not available. The estimated costs comprised NMFS administrative activities associated with managing IFQ permits and quota shares for the wreckfish IFQ program. According to

\(^7\)The halibut and sablefish estimates exclude the cost of the sablefish stock assessment performed by the NMFS Alaska Fisheries Science Center; enforcement activities performed by the U.S. Coast Guard and by the Alaska State Troopers under a joint enforcement agreement with NMFS; and legal work performed by NOAA's Alaska Regional Counsel and General Counsel for Enforcement and Litigation.

\(^8\)The surfclam/ocean quahog estimates exclude the cost of the surfclam and ocean quahog stock assessments performed by the NMFS Northeast Fisheries Science Center and enforcement activities performed by the U.S. Coast Guard and state agencies that have entered into joint enforcement agreements with NMFS.
NMFS officials, NMFS incurred no other costs associated with the program's management during fiscal year 2003, and cost information from the South Atlantic Fishery Management Council was not available.

Whether IFQ Management Costs Were Higher or Lower Than Pre-IFQ Costs Depend on Fishery and Program Characteristics

IFQ management costs were higher than pre-IFQ costs for the halibut and sablefish program but lower for the surfclam/ocean quahog program, according to fishery managers. Since information on how wreckfish management costs changed with the introduction of the IFQ program was not available, we did not include wreckfish in our analysis of comparative costs. While NMFS does not systematically track IFQ management costs and cost data on fishery management activities prior to the IFQ program are incomplete, fishery managers said the overall costs of managing the halibut and sablefish fisheries were higher under the IFQ program than under the previous management system. Before implementation of the IFQ program, both the halibut and sablefish fisheries were managed by setting an annual catch limit for the entire fishery by fishing area, as well as restricting the times when fishing could occur and the type of gear that could be used—for example, hooks, pots, and nets. However, there were no restrictions on the number of people that could fish. Over time, as more boats entered the fishery and the catch limits were reached sooner, the fishing seasons became shorter; in some areas, fishing was limited to less than 48 hours a year, resulting in so-called fishing derbies—that is, fishermen trying to catch as much fish as they could within the time allotted. With the implementation of the IFQ program, the fisheries were managed under a complex set of rules designed, in part, to protect the owner-operator character of the fleet. For example, the rules limited the amount of quota an individual could hold, restricted who could receive quota transfers, and required that quota be issued by vessel categories with quota transfers prohibited across vessel categories—for example, larger boats could not buy quota from smaller boats. In addition, the IFQ program allowed fishery managers to extend the fishing season to 8 months.

The IFQ program's complexity and longer fishing season required NMFS to devote more staff time to administrative, monitoring, and enforcement activities than previously needed. More specifically,

- NMFS created a Restricted Access Management division to handle the administrative activities of the IFQ program, such as issuing annual quota allocations, handling quota transfers, and maintaining the IFQ landings database;
NMFS created an Office of Administrative Appeals to handle appeals related to the IFQ program, such as appeals of the initial quota allocation determinations and subsequent decisions regarding quota transfers;

NMFS hired 20 additional staff (16 enforcement officers and 4 agents) to monitor the individual catch limits of the more than 3,000 halibut fishermen who now, with an 8-month fishing season, could land their catch at any 1 of more than 35 ports along the coasts of Alaska, Oregon, and Washington; and

the International Pacific Halibut Commission, which conducts halibut stock assessments and annually establishes halibut catch limits, by geographic area, determined that the IFQ program’s extended season increased the resources needed for the U.S. portion of its halibut sampling program.

In contrast to the halibut and sablefish program, fishery managers reported that overall management costs for the surfclam and ocean quahog fisheries were lower following the implementation of the IFQ program. Fishery managers primarily attributed the lower costs to the simplicity of the IFQ program as compared with the previous management system. Before the IFQ program, the fisheries were managed through a combination of tools, such as minimum size limits for harvested clams; annual and quarterly quotas; and, in the case of surfclams, fishing time restrictions. Fishery managers said that the pre-IFQ time management system, which required NMFS to set and monitor an allowable fishing time for each vessel in the fishery, was very labor-intensive for the Mid-Atlantic Council and the following offices: NMFS Sustainable Fisheries, NMFS Enforcement, NOAA Northeast Regional Counsel, and NOAA Northeast General Counsel for Enforcement and Litigation. Further, as overfishing continued, the length of time each vessel was allowed to fish continued to be reduced until it had decreased to six 6-hour trips per fishing quarter in the mid-1980s. According to NMFS officials, the continual changes in policy required NMFS to spend significant staff time monitoring the status of the fishery, as well as drafting revisions to fishery regulations.

After implementation of the surfclam/ocean quahog IFQ program, fishery managers reported that the amount of management time the council and NMFS spent on the surfclam and ocean quahog fisheries decreased dramatically. For example, council staff estimated that the IFQ program reduced the amount of time they spent on surfclam/ocean quahog activities
from 3 or 4 staff-years annually to less than 1/2 a staff-year during fiscal year 2003. This decrease occurred because the surfclam/ocean quahog population had stabilized, and fishery managers no longer had to micromanage the fisheries.

In addition, NMFS officials also reported that enforcement costs were substantially lower after implementation of the surfclam/ocean quahog IFQ program. Before IFQ implementation, enforcement under the time management system required the use of Coast Guard boats and helicopters to monitor boats for compliance with their fishing time restrictions. Enforcement also required monitoring offloads to ensure that minimum clam sizes were being met. With the implementation of the IFQ program and its reliance on individual catch limits, NMFS changed its enforcement efforts from the costly at-sea monitoring of boats to monitoring the amount of clams coming ashore and making sure all landings were reported accurately. The council and NMFS generally believe that the surfclam/ocean quahog fisheries are ideally suited to dockside enforcement because the fisheries have a small number of vessels that can offload their clam cages only at docks with cranes and sell their product to one of a few processors with a canning facility. For this reason, fishery managers said that the surfclam and ocean quahog fisheries required substantially less enforcement effort than before the IFQ program was implemented.

**Fishery Councils and NMFS Incurred Additional Costs Associated with Development and Implementation of Two IFQ Programs**

According to fishery managers, the fishery councils and NMFS incurred additional costs associated with developing and implementing the halibut and sablefish and surfclam/ocean quahog IFQ programs. IFQ program development, which includes developing the fishery management plan and the regulations and infrastructure to implement it, was time-consuming and costly for fishery management councils and NMFS because of the complexity and controversy of designing a fishery program based on individual quota shares and the need to develop infrastructures to manage the program. In addition to development costs, NMFS reported that it also incurred additional implementation costs during the initial years of the halibut and sablefish and surfclam/ocean quahog IFQ programs, as fishery managers and participants adjusted to a new management system.

**IFQ Development Costs**

Both the fishery management councils and NMFS incurred additional costs during the development phase of the halibut and sablefish and surfclam/ocean quahog IFQ programs, according to fishery managers. As shown below, staff from the North Pacific and Mid-Atlantic Councils—the councils responsible for the halibut and sablefish and surfclam/ocean
quahog fisheries, respectively—said that the costs the councils incurred annually to develop the IFQ programs were much higher than the annual costs they now incur to monitor and review the programs.

- North Pacific Council staff estimated that the council devoted 25 percent of its staff time and 20 percent of its budget to the development of the halibut and sablefish IFQ program for 3 years until the program was adopted in 1991. In contrast, they said the council spent less than 10 percent of 1 staff-year on management activities related to the halibut and sablefish program during fiscal year 2003.

- Mid-Atlantic Council staff said that it took the equivalent of about one full-time council staff between 2 and 3 years to develop the fishery plan amendment that created the surfclam/ocean quahog IFQ program. In contrast, they estimated that they spent about 40 percent of 1 staff-year on the program during fiscal year 2003.

Similarly, NMFS reported incurring the following additional costs during the development phase of both IFQ programs.

- NMFS Sustainable Fisheries staff estimated that it took the equivalent of two and one-half staff almost 2 years to write the regulations for the halibut and sablefish IFQ program, which is significantly higher in comparison with the time it now spends annually to write program regulations.

- A NOAA Northeast Regional Counsel attorney estimated that providing legal input on the development of the surfclam/ocean quahog program required 30 to 50 percent of one attorney’s time, in contrast to the 5 percent of one attorney’s time spent on the IFQ program during fiscal year 2003, because the surfclam/ocean quahog IFQ program raised legal issues that NMFS had not previously addressed.

- NMFS Restricted Access Management officials estimated that over a 6-month period, they devoted the equivalent of four full-time staff, in addition to supervisory and clerical staff, to the halibut and sablefish quota application and allocation process.

- NMFS Restricted Access Management officials also said the Alaska Region spent over $1.2 million on personnel, contractual services related to the establishment of computer technology, and the
computerized transaction terminals used to record halibut and sablefish IFQ landings.

- NMFS Law Enforcement officials estimated that NMFS spent about $2 million during fiscal year 1994 to hire and train 16 new enforcement officers and four agents for the halibut and sablefish program and to establish an enforcement presence in a variety of ports around the state of Alaska and the Pacific Northwest.

IFQ Implementation Costs

In addition to development costs, NMFS also reported incurring additional implementation costs during the initial years of the halibut and sablefish and surfclam/ocean quahog IFQ programs. According to fishery managers, management costs for the halibut and sablefish IFQ program were higher during its first years as NMFS and industry adjusted to the new program. For example, as shown below, NMFS incurred additional costs in the area of adjudicating appeals, learning and enforcing new program rules, and handling many minor legal issues related to the halibut and sablefish IFQ program.

- A NMFS official from the Alaska Region’s Office of Administrative Appeals said the costs associated with appeals from industry related to quota were much higher during the initial years of the halibut and sablefish program than they are today. By the end of the program’s second year, for example, NMFS had received 170 appeals, requiring the equivalent of five or six full-time staff, whereas the region currently receives just 1 or 2 appeals each year.

- According to NMFS enforcement data, staff in the Alaska Division of NMFS’s Office for Law Enforcement spent almost twice as much time on IFQ activities during the first year of the IFQ program than during the program’s second year. NMFS officials said that in addition to their customary enforcement activities, agents and officers spent a significant amount of time learning new policies and procedures for enforcing IFQ program rules. In addition, the number of written warnings and summary settlements increased from 192 in 1994 to 404 in 1995, the first year of the IFQ program, and then dropped to 260 in 1996 as industry adjusted to the new program rules.

- Attorneys from NOAA’s Alaska General Counsel for Enforcement and Litigation reported that they received many minor cases resulting from participant misunderstandings about program rules. Also, attorneys needed time to develop their knowledge and familiarity with IFQ case
management. As the program matured, however, the number of violations declined, and attorneys became more skilled at handling IFQ violations. Over time, enforcement attorneys have also been able to reduce their workload by handing over clear-cut violations to NMFS enforcement officers for resolution by summary settlement. As a result, the amount of enforcement attorney time spent on the IFQ program has decreased.

The surfclam/ocean quahog IFQ program incurred additional costs in several management areas during implementation but also experienced some cost reductions in others. For example, program managers reported that learning to manage transfers and leases of quota shares was very time-consuming for NMFS staff, particularly because the program was the first one with transferable quotas in the country. In addition, management of quota allocations and annual distribution of cage tags was time-consuming until NMFS officials developed a more efficient procedure for producing and distributing tags. A NMFS official estimated that during the program’s first years, these activities required the time of two Sustainable Fisheries’ staff during the first month of each year and 25 percent of their time for the remainder of the year. While some offices incurred additional costs during initial program implementation, NOAA Regional Counsel staff said that they spent considerably less time on the surfclam/ocean quahog fisheries once the IFQ program was implemented. Also, in contrast to the halibut and sablefish IFQ program, there were very few appeals of the initial quota allocation, because the allocation was based on landings and vessel ownership data that already had been recorded. For this reason, according to NOAA Northeast Regional Counsel, it was difficult for fishermen to contest the validity of these data.

### NMFS Has Not Recovered IFQ Management Costs as Required

In 1996, the Magnuson-Stevens Act was amended by the Sustainable Fisheries Act, requiring NMFS to collect a fee to recover the “actual costs directly related to the management and enforcement of any individual fishing quota program” and limiting the fee to 3 percent of the ex-vessel value of the fish harvested.\(^9\) Further, the amendment prohibited NMFS from collecting such fees in the surfclam/ocean quahog and wreckfish fisheries until after January 1, 2000.\(^10\) NMFS implemented cost recovery for

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the halibut and sablefish program in 2000, 5 years after the IFQ program became operational. However, at the time of our review, NMFS had not implemented cost recovery for the surfclam/ocean quahog and wreckfish IFQ programs. According to NMFS officials, they had not recovered surfclam/ocean quahog or wreckfish management costs as required under the act, because (1) cost recovery has not been a priority for the surfclam/ocean quahog program and (2) very few people were fishing wreckfish, and they believe that recovering program management costs would be an economic burden for these fishermen.

Although NMFS is recovering some costs for the halibut and sablefish program, it may not be recovering full costs associated with the program. The Magnuson-Stevens Act does not define “actual costs directly related to the management and enforcement” of an IFQ program, and the legislative history is also silent as to the meaning of this term. However, NMFS has interpreted the term to be limited to the costs that would not have been incurred but for the IFQ program (i.e., the incremental costs). Under this interpretation, at the end of each fiscal year, offices in NMFS’s Alaska Region, including Restricted Access Management, Sustainable Fisheries, and Law Enforcement, as well as the International Pacific Halibut Commission, submit their incremental cost estimates to the Restricted Access Management office. The Restricted Access Management office uses these estimates and the total ex-vessel value of the two fisheries to calculate an annual fee to be levied on halibut and sablefish program participants. NMFS relies on cost estimates provided by these various offices because it does not systematically track the costs of IFQ programs or the time spent on IFQ activities. NMFS officials told us that developing the cost estimates is challenging because most staff work on more than one program at a time, and it is difficult to isolate the costs attributable to the IFQ program.

While NMFS requests cost estimates for nine budget categories—personnel compensation, personnel benefits, travel, transportation, rent, printing, other contractual services, supplies, and equipment—NMFS does not have a standard procedure for estimating these costs. Instead, each organization
develops its cost estimates independently using its own methodology.11 For example, the Restricted Access Management office prepares year-end estimates of the amount of time each staff person spent on IFQ work, an average percentage of all staff time spent on IFQ work, and a percentage of its overhead costs to be charged to the IFQ program. In contrast, the International Pacific Halibut Commission prepares its incremental cost estimates by adjusting the U.S. portion of its pre-IFQ (1994) costs upward by 5 percent per year and then subtracts that amount from the U.S. portion of the commission’s total annual costs. Nonetheless, NMFS officials believe that their cost estimates represent the best available information on the incremental costs of the IFQ program.

Applying the “incremental costs” definition and using the cost estimates submitted by the various offices, NMFS reported recovering about $3.2 million in halibut and sablefish IFQ program costs for fiscal year 2003. However, there is another way to interpret “actual costs directly related to” an IFQ program, that is, full costs.12 Under a “full cost” approach, NMFS could have recovered more than the $3.2 million recovered for fiscal year 2003. For example, NMFS could have recovered the costs associated with the sablefish stock assessment, which would be done regardless of whether or not the fishery was managed under an IFQ program. It also could have recovered the IFQ-related costs of the North Pacific Fishery Management Council and the U.S. Coast Guard, which perform activities needed to manage the halibut and sablefish IFQ program.

11The Federal Financial Management Improvement Act reflects a need for agencies to have systems that can generate reliable, useful, and timely information with which to make fully informed decisions and to ensure accountability on an ongoing basis (GAO, Financial Management: Improved Financial Systems Are Key to FFMIA Compliance, GAO-05-20 (Washington, D.C.: Oct. 1, 2004)), and the Statement of Federal Financial Accounting Standards No. 4, Managerial Cost Accounting Standards (SFFAS No. 4), provides good guidance for capturing costs of activities.

12As described in SFFAS No. 4, full cost includes (1) the costs of resources consumed directly or indirectly and (2) the costs of identifiable supporting services provided by other components within the entity and by other entities.
Several methods are used for sharing IFQ management costs between government and industry; each method has advantages and disadvantages. These methods principally fall into three categories—user fees, quota set-asides, and devolution of services from government to industry. Sharing costs between government and industry can help alleviate concerns about fishery management costs and the equity of giving away a public resource in the form of individual fishing quota to a select group of beneficiaries.

Table 2 shows the types of cost-sharing methods used in selected countries that manage fisheries under individual fishing quotas.

### Table 2: IFQ Cost-Sharing Methods Used in Selected Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>User fees</th>
<th>Quota set-asides</th>
<th>Devolution of services</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Australia</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Yes</td>
<td>Yes(^a)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: GAO analysis of information provided by NMFS and foreign government agencies.

\(^a\) Canada uses a type of quota set-aside, which it calls quota reallocation. Under this method, the government allocates a portion of the annual quota to industry associations, which, in turn, lease the quota to fishermen.

### User Fees

Under the user fee method, government recovers costs by collecting a fee from those who benefit from using the resource. In the case of an IFQ program, the beneficiary is generally the quota holder or fisherman. Among the advantages, user fees promote equity, because they distribute management costs to those who benefit from having exclusive access to a public resource. Further, government can select the method for collecting fees that best reflects the extent to which program participants have benefited. For example, in the Alaskan halibut and sablefish IFQ program, fishermen pay their fees after the fishing season closes on the basis of the

\(^b\) In the United States, the sole approach provided in the Magnuson-Stevens Act is user fees. According to NMFS, quota set-asides and devolution of services are not authorized by existing law.
amount of fish caught. Fishermen who have not caught any fish do not pay a fee. By collecting fees after the end of the season, government also has better cost information for the program. Charging fees also creates an incentive for users to evaluate which management services have benefits that exceed their costs and communicate this information to government.

Among the disadvantages, user fees directly affect a fishing firm’s profitability and its ability to compete. In cases where participants pay a flat fee regardless of the extent to which they benefit from using the resource, user fees could be disproportionately borne by the smaller fishing firms. Also, user fees have administrative costs to government for determining the total amount of recoverable costs, as well as for billing, tracking, collecting, and enforcing the fee payments of each individual quota holder or fisherman. User fee programs that base their fees on ex-vessel value may require additional recordkeeping. In the United States, for example, NMFS must keep records on IFQ fish prices and IFQ landings by species, month, and port in order to calculate the annual fee charged for halibut and sablefish IFQ management costs.

Several countries recover IFQ management costs through user fees. However, the features of each user fee program vary by which costs are recovered and how fees are assessed. As previously discussed, in the United States, NMFS collects fees to recover the incremental costs of the Alaskan halibut and sablefish IFQ program, and it does not recover stock assessment costs. In contrast, other countries, such as Australia and New Zealand, do not limit recovery to incremental costs. Australia recovers all domestic commercial fisheries’ licensing, data management, and logbook management costs; 50 percent of monitoring and enforcement costs; and 80 percent of research and data collection costs, which include stock assessment research. New Zealand recovers all research, compliance, and administrative costs. Moreover, both Australia and New Zealand, unlike the United States, base their fees on the amount of quota shares an individual holds, with no limit on the amount of the fee charged.

**Quota Set-Asides**

Under the quota set-aside method, the government sets aside (i.e., does not allocate) a certain amount of quota each year, leases it to fishermen, and then uses the revenue to pay for IFQ program management costs. An advantage of the quota set-aside method is that it does not necessitate the collection of fees from each quota holder, thus avoiding late or nonpayment concerns and reducing collection costs to government. Another advantage of quota set-asides is that government eliminates the possibility that those
who do not pay their fees might continue to benefit from the public resource.

A disadvantage of the set-aside method is that if the value of the quota is too low, the government may not raise enough funds to cover the IFQ program’s management costs. Therefore, government needs to accurately estimate the value of the quota for the upcoming season and the cost of managing the fishery when determining the amount of quota to withhold.

Canada uses a method similar to a quota set-aside (known as quota reallocation) to collect costs of its halibut IFQ fishery. In that fishery, a portion of each quota holder's annual quota—not to exceed 15 percent of the total allowable catch—is allocated to an industry association for redistribution. The original quota holder has the right to lease back his or her shares. If he or she declines, the industry association makes the shares available for purchase by other quota holders. In either case, the representative industry association uses the revenue raised from the quota reallocation to defray the costs of the halibut IFQ program.

Devolution of Services

Under the devolution of services method, responsibility for providing selected fishery management services is transferred to the fishing industry. Since government is no longer responsible for providing some fisheries management services, industry must obtain these services and pay for them itself. Even though responsibility for making some fishery management decisions is devolved to industry, government must ensure that industry acts in accordance with government standards and specifications and complies with program rules. This approach could also reduce concerns about potential government inefficiencies in providing such services. Also, devolving services to industry means that the government can avoid future investments in fisheries management infrastructure, such as computer systems to track individual catch amounts.

Regarding disadvantages of devolving services to industry, government may be further removed from enforcement, making it a greater challenge to ensure that industry is complying with the program rules. Also, devolving services may raise legal concerns regarding who is ultimately responsible should a service fail to be provided. Another disadvantage is that government could face some resistance from industry when it wants to change program rules.
Both New Zealand and Canada have devolved some of their IFQ management responsibilities to industry. In New Zealand, the government has devolved responsibility for certain services to industry, including maintaining the quota share database, registering quota shares, monitoring landings data for compliance with quota limits, and issuing permits, while retaining responsibility for developing standards, specifications, and regulatory proposals. In Canada, the government provides a baseline of fishery management services, but it has devolved to industry the responsibility for hiring and paying for government-certified at-sea and dockside observers to monitor fishing activities. Canada also gives industry associations the option to select and pay the government for additional fishery management services through service contracts. Canada currently has 15 service contracts with industry, including several involving IFQ programs.

Conclusions

IFQ programs bring special benefits to quota holders, who receive exclusive access to a public trust resource. With the enactment of the Sustainable Fisheries Act, NMFS is required to recover actual costs directly related to the management and enforcement of all IFQ programs. While NMFS recovers some costs for the halibut and sablefish IFQ program, it does not recover any management costs for the surfclam/ocean quahog and wreckfish IFQ programs. Such a situation not only raises concerns regarding noncompliance with the law, but it also raises concerns about fairness because a select group of beneficiaries is receiving exclusive access to a public resource without compensation to the public. Also, quota holders in the halibut and sablefish fisheries are paying fees, while quota holders in the surfclam/ocean quahog and wreckfish fisheries are not.

Moreover, because NMFS does not provide guidance on how to estimate costs for IFQ programs, each organizational unit with IFQ-related costs uses its own methodology to estimate recoverable costs. Without a standard cost estimation process, NMFS has no credible basis for knowing whether it is charging the appropriate fees and whether it is recovering all required costs. Finally, since the Magnuson-Stevens Act does not define “actual costs directly related to the management and enforcement” of an IFQ program and NMFS has interpreted the term to mean incremental costs, NMFS may be recovering fewer costs than the Congress intended. Another interpretation, that is, a “full cost” approach, could result in greater cost recovery by NMFS.
If the Congress would like NMFS to recover other than incremental costs, it may wish to clarify the IFQ cost recovery fee provision of the Magnuson-Stevens Act.

To comply with the cost recovery requirements of the Magnuson-Stevens Act, we recommend that the Secretary of Commerce direct the Director of NMFS to take the following two actions:

- implement cost recovery for all IFQ programs and
- develop guidance regarding which costs are to be recovered and, when actual cost information is unavailable, how to estimate these costs.

We provided a draft copy of this report to the Department of Commerce for review and comment. We received a written response from the Under Secretary of Commerce for Oceans and Atmosphere that includes comments from the National Oceanic and Atmospheric Administration (NOAA). Overall, NOAA stated that our report was well researched and presented, and was responsive to the specific request made by the Congress.

NOAA agreed with our recommendation to implement cost recovery for all IFQ programs. NOAA agreed that the IFQ cost recovery provision of the Magnuson-Stevens Act applies to all IFQ programs. NOAA said that it would work with the Mid-Atlantic and South Atlantic Fishery Management Councils on adding cost recovery to the surfclam/ocean quahog and wreckfish IFQ plans. It also said that the costs of collecting these fees should be taken into account when determining whether cost recovery is required in a particular IFQ fishery. To that end, NOAA suggested that we may want to recommend that the Congress consider adding a rule exempting IFQ programs from the cost recovery requirement if those costs fall below some reasonable threshold. Since the scope of our work did not include an evaluation of the cost recovery provisions of the Magnuson-Stevens Act, we believe that it would be premature to make a recommendation to the Congress at this time.
NOAA also agreed with our recommendation to develop guidance regarding which costs are to be recovered and, when actual cost information is unavailable, how to estimate these costs. Specifically, it said that NOAA will develop guidance on how to identify activities directly attributable to an IFQ program and on how the costs associated with these activities can be measured.

NOAA also raised some questions about specific issues covered in the report. For example, NOAA suggested that we should have looked at the net benefits of IFQ programs and the circumstances and general cost recovery policies in selected foreign countries, but doing so was beyond the scope of our work. Also, NOAA believes that the recovery of incremental costs is more consistent with the requirements of the Magnuson-Stevens Act than an interpretation requiring the recovery of full costs. Because the act does not define “actual costs directly related to the management and enforcement” of an IFQ program, which we believe can be interpreted in more than one way, our report suggests that the Congress may wish to clarify this provision if it would like NMFS to recover other than incremental costs. NOAA’s specific comments and our detailed responses are presented in appendix IV of this report.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to interested congressional committees, the Secretary of Commerce, and the Director of the National Marine Fisheries Service. We will also provide copies to others upon request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staff have any questions about this report, please call me at (202) 512-3841 or Stephen Secrist at (415) 904-2236. Key contributors to this report are listed in appendix V.

Anu K. Mittal
Director, Natural Resources and Environment
This is the third in a series of reports on individual fishing quota (IFQ) programs requested by the Chairman and Ranking Minority Member of the former Subcommittee on Oceans, Fisheries, and Coast Guard, Senate Committee on Commerce, Science, and Transportation. For this report, we reviewed domestic quota programs to (1) determine the costs of managing (i.e., administering, monitoring, and enforcing) IFQ programs and how these costs differ from pre-IFQ management costs; (2) determine what, if any, IFQ management costs are currently being recovered by the Department of Commerce’s National Marine Fisheries Service (NMFS); and (3) assess ways to share the costs of IFQ programs between government and industry. The term “individual fishing quota” as used in this appendix includes individual transferable quota and individual vessel quota.

For all three objectives, we visited locations in Alaska, Florida, Massachusetts, New Jersey, and South Carolina. We selected these sites to obtain broad geographic coverage for the three domestic IFQ programs. In these locations and elsewhere, we interviewed agency officials at the headquarters office of NMFS as well as its Northeast, Southeast, and Alaska regional offices; representatives of the Gulf of Mexico, Mid-Atlantic, North Pacific, and South Atlantic Fishery Management Councils; representatives of the International Pacific Halibut Commission; officials at the headquarters office of the U.S. Coast Guard and the 1st, 7th, and 17th Districts; officers from the Alaska State Troopers and the New Jersey Division of Fish and Wildlife; and others. We also visited ports in Juneau, Homer, and Seward, Alaska, and Point Pleasant and Wildwood, New Jersey, where we observed offloads of IFQ fish.

To determine the costs of managing IFQ programs, because NMFS does not systematically track this information, we developed a data collection instrument and asked organizations that perform IFQ-related activities to provide information on their IFQ-related costs for fiscal year 2003. For the halibut and sablefish IFQ program, the following organizations provided cost information: the Restricted Access Management Program and the Sustainable Fisheries Division of NMFS’s Alaska Region, the Alaska Division of NMFS’s Office for Law Enforcement, the International Pacific Halibut Commission, and the North Pacific Fishery Management Council. The following organizations did not provide cost information although we requested it: the National Oceanic and Atmospheric Administration’s (NOAA) Office of the Alaska Regional Counsel (information regarding IFQ-related legal activities) and NMFS’s Alaska Fisheries Science Center (information regarding the sablefish stock assessment). Although NOAA’s Office of General Counsel for Enforcement and Litigation, Alaska Region,
provided estimates of staff hours spent on IFQ work, it could not provide
the associated costs. For the surfclam/ocean quahog IFQ program, the
following organizations provided cost information: the Sustainable
Fisheries Division, the Fishery Statistics Office, and the Information
Resource Management of NMFS's Northeast Region; NOAA's Northeast
Regional Counsel; the Northeast Division of NMFS's Office for Law
Enforcement; and the Mid-Atlantic Fishery Management Council. NMFS's
Northeast Fisheries Science Center did not provide cost information
regarding the surfclam and ocean quahog stock assessments, although we
asked it to do so. For the wreckfish IFQ program, the Constituency
Services Branch of the Management, Budget and Operations Division of
NMFS's Southeast Region provided cost information, but the Southeast
Division of NMFS's Office for Law Enforcement (information regarding
IFQ-related enforcement activities) and the South Atlantic Fishery
Management Council (information regarding wreckfish management) did
not. For all three IFQ programs, the U.S. Coast Guard could not provide any
cost information because it does not track the costs associated with IFQ-
related enforcement activities.

Using the cost information received, we prepared estimates of the
management costs incurred in fiscal year 2003 for each IFQ program. We
obtained the views of fishery managers on how halibut and sablefish and
surfclam and ocean quahog management costs changed after the two IFQ
programs were implemented. We also obtained views and supporting
information, where possible, on the costs incurred during the development
and implementation of each IFQ program. To assess the reliability of the
data we received, we interviewed officials most knowledgeable about each
IFQ program and its probable costs. On reviewing the data, they appeared
reasonable, given differences among the programs. Consequently, we
concluded that the reported data were sufficiently reliable for purposes of
this report.

To determine what costs, if any, are currently being recovered by NMFS, we
reviewed laws and regulations, including the Magnuson-Stevens Act and
the Sustainable Fisheries Act and their legislative histories, which set out
the cost recovery requirements for IFQ programs. We also interviewed
NMFS officials and fishery council representatives to determine which IFQ
programs are recovering management costs; what costs they are
recovering; and, if costs are not being recovered, the reasons why.

To assess ways to share the costs of IFQ programs between government
and industry, we identified domestic and foreign programs that share IFQ
costs between government and the fishing industry. We interviewed and obtained the views of government officials from the United States, Australia, Canada, and New Zealand and academicians on cost-sharing methods that are being used or could be used to share costs and their advantages and disadvantages. We also reviewed studies related to existing and potential cost-sharing methods. For purposes of this report, we did not examine foreign laws and regulations, relying instead on foreign fishery managers for the legal requirements of their programs and how they operated.

We conducted our review from February through December 2004 in accordance with generally accepted government auditing standards.
Appendix II

Descriptions of Individual Fishing Quota Programs in the United States

This appendix describes the three IFQ programs in the United States. The term “individual fishing quota” as used in this appendix includes individual transferable quota.

### Surfclam/Ocean Quahog IFQ Program (1990)

Surfclams and ocean quahogs are mollusks found along the East Coast, primarily from Maine to Virginia, with commercial concentrations off the Mid-Atlantic Coast. While ocean quahogs are found farther offshore than surfclams, the same vessels are largely used in each fishery. These vessels tow hydraulic clam dredges that extract clams from the ocean floor. The catch is emptied into metal cages holding roughly 32 bushels, off-loaded at one of a small number of landing sites, and sold to processing facilities. Surfclams are used in strip form for fried clams and in chopped or ground form for soups and chowders. Ocean quahogs are used in soups, chowders, and white sauces. The fishery consists of a few large, vertically integrated firms, small processors, and independent fishermen.

The surfclam fishery developed after World War II. When the surfclam fishery declined in the mid-1970s, the ocean quahog fishery arose as a substitute. Disease and industry overfishing led the Mid-Atlantic Fishery Management Council to develop a management plan for surfclams and ocean quahogs, the first such plan in the United States. Between 1977 and 1990, the council and NMFS used a variety of effort controls to limit the harvest to sustainable levels, such as restrictions on fishing times, areas fished, clam sizes, gear, vessels, who fished, and how fishing occurred.

IFQs were established for the surfclam/ocean quahog fishery in 1990—the first IFQ program approved under the Magnuson-Stevens Act. The program was designed to help stabilize the fishery, reduce excessive investment in fishing capacity, and simplify the regulatory requirements of the fishery to minimize the government and industry cost of administering and complying with program requirements.

### Wreckfish IFQ Program (1992)

Wreckfish are found in the deep waters far off the South Atlantic coast, primarily from Florida to South Carolina. They were first discovered in the southern Atlantic in the 1980s by a fisherman recovering lost gear. Wreckfish are fished by vessels over 50 feet in length using specialized gear. These vessels are used primarily in other fisheries.
Within 3 years of the discovery of wreckfish, wreckfish landings increased to more than 3 million pounds, and the number of vessels used for wreckfish increased from 2 to 40. Because of concerns that the resource could not support unlimited expansion, the South Atlantic Fishery Management Council added wreckfish to the snapper-grouper fishery management plan and set the catch limit at 2 million pounds per year. The council developed an IFQ program for wreckfish in 1991. After the IFQ program was implemented in 1992, wreckfish landings declined rapidly, in part because of the difficulty and costs associated with fishing wreckfish in relation to their market value, and quota holders started participating in easier, less costly fisheries with higher market values. Today, the wreckfish fishing fleet is small, with only 2 vessels reporting wreckfish landings in 2003. Wreckfish are sold fresh or frozen as a market substitute for snapper and grouper.

### Halibut and Sablefish IFQ Program (1995)

Pacific halibut and sablefish (black cod) are found off the coast of Alaska, among other areas. The fishing fleets are primarily owner-operated vessels of various lengths that use hook-and-line gear for halibut and hook-and-line or pot (fish trap) gear for sablefish. Some vessels catch both halibut and sablefish.

The International Pacific Halibut Commission manages the halibut fishery under a treaty between the United States and Canada. The Halibut Commission adopts conservation regulations, such as seasons and area catch limits, which it forwards to the United States and Canada for approval. NMFS, in consultation with the North Pacific Fishery Management Council, has the authority to develop other regulations that do not conflict with the Halibut Commission’s regulations.

Historically, there was no limit on the number of people who could participate in the halibut and sablefish fisheries, and, starting in the mid-1970s, the number of boats in these fisheries began to increase rapidly. By the late 1980s, overcapitalization of the halibut and sablefish fleets led to seasons that lasted less than 2 days in some areas and a race for fish that put boats and fishermen at risk and resulted in gear loss, excessive bycatch of nontarget species, and poor product quality, among other things. In response to these conditions, the North Pacific Council developed an IFQ program that was implemented by NMFS in 1995. The program was designed, in part, to help improve safety for fishermen, enhance efficiency, reduce excessive investment in fishing capacity, and protect the owner-operator character of the fleet. The program set caps on the amount of
quota that any one person may hold, limited transfers to bona fide fishermen, issued quota in four vessel categories, and prohibited quota transfers across vessel categories.
This appendix describes IFQ cost-sharing programs in Australia, Canada, and New Zealand. The term “individual fishing quota” as used in this appendix includes individual transferable quota and individual vessel quota.

Australia

Australia’s fishing zone,\(^1\) the third largest in the world, supports many high-value fisheries. The gross value of Australia’s commercial fisheries production was an estimated AU$2.3 billion in fiscal year 2003. Australia introduced IFQs in the early 1980s and currently has at least 20 federal and state fisheries under IFQ management. These fisheries account for about 22 percent of the total value of Australia’s commercial fisheries.

Australia began recovering fishery management costs in the mid-1980s as part of a governmentwide initiative to introduce user charges for government services. The fishing industry (i.e., fishing permit holders) pays for services that directly benefit fishermen, while the government pays for management activities that may benefit the general public. According to an Australian government official, in commercial fisheries managed by the federal government, Australia recovers 50 percent of compliance costs, 80 percent of research and data collection costs, and 100 percent of all other management costs. The recoverable costs are collected through levies, license fees, and observer fees. The amount of the levy for each quota holder is generally based on the amount of quota held and the fishery’s budgeted costs for the year, with an adjustment made the following year if actual costs differ from the budgeted costs.

In fiscal year 2003, the Australia Fisheries Management Authority, the government group that manages commercial fisheries, received AU$11.3 million from levies and license fees and AU$609,000 from observer and other fees. These fees are paid to the general treasury but are then transferred to the Australia Fisheries Management Authority to finance fisheries management costs.

Canada

Canada, the fifth largest exporter of fish and seafood products in the world, exported CA$4.7 billion worth of fish and seafood products in 2002. In the

\(^1\)The Australian fishing zone stretches from the coast to 200 miles offshore and includes both federal and state waters.
early 1990s, Canada started using IFQs to manage several of its commercial fisheries, including western Canadian sablefish, Pacific halibut, and groundfish.

In an effort to eliminate its budget deficit and promote government efficiency, the Canadian government cut spending and made cost sharing with industry a priority in 1994. Under Canada’s system, as follows, fishermen pay an access fee to the government, a cost-sharing fee to industry associations, and observer fees to private companies.

- The access fee, paid to the Canadian government’s general treasury, is considered a form of rent to the government and Canadian people for the right to use a public resource. Canada’s Department of Fisheries and Oceans does not receive funding to support program delivery from this fee.

- Canada provides a baseline level of fishery management services at no cost to industry. However, if fishermen want additional services, they must pay for them. Examples of additional services include adding enforcement officers, adding stock assessment reports, and running an IFQ program. Industry associations representing fishermen negotiate with the Department of Fisheries and Oceans on the costs to be shared to provide for the additional services. The associations then collect payments from the fishermen through various methods. For example, in the groundfish fishery, the association asks individual license holders to voluntarily contribute funds. For the halibut fishery, the industry association raises funds by setting aside a portion of the total commercial quota, not to exceed 15 percent, and leases it back to individual fishermen. The association then uses these funds to share IFQ program costs with the government.

- In addition to user fees and cost-sharing fees, fishermen pay observer fees. Canada requires fishermen to hire government-certified at-sea and dockside observers from the private sector to monitor fishing activities.

New Zealand

Seafood is New Zealand’s fourth largest export, after dairy, meat, and forest products. In 2000, seafood exports were worth about NZ$1.43 billion and accounted for 90 percent of industry revenue. New Zealand introduced IFQs in 1986, and about 50 species are now managed under the IFQ system. New Zealand’s IFQ fish accounted for about 95 percent of the fishing industry’s value in 2003.
A provision for cost recovery for fisheries and conservation services was added into fishing legislation in 1994 to enable the government to recover costs associated with the commercial fishing industry. Recoverable costs include conservation costs and costs that can be attributed to a beneficiary of the resource. Costs of services that also benefit the general public are not recoverable.

The 1996 Fisheries Act encouraged government to give industry a greater role in the quota management system. As a result, since 2001, New Zealand has transferred, or devolved, responsibility to industry for specified services, while retaining responsibility for developing standards and specifications for industry to follow. Currently, New Zealand has devolved to industry responsibility for the quota registry system and collecting fishing activity information.
Note: GAO comments supplementing those in the report text appear at the end of this appendix.

Ms. Anu K. Mittal  
Director, Natural Resources  
and Environment  
United States Government Accountability Office  
Washington, D.C. 20548

Dear Ms. Mittal:

Thank you for the opportunity to review and comment on the Government Accountability Office’s draft report entitled Individual Fishing Quotas: Management Costs Varied and Were Not Recovered As Required (GAO-05-241). Enclosed is the National Oceanic and Atmospheric Administration’s comments to this draft report.

Sincerely,

Conrad C. Lautenbacher, Jr.  
Vice Admiral, U.S. Navy (Ret.)  
Under Secretary of Commerce for Oceans and Atmosphere

Enclosure
NOAA Comments on the Draft GAO Report Entitled
“Individual Fishing Quotas: Management Costs Varied and Were Not Recovered As Required”
(GAO-05-241/March 2005)

General Comments

NOAA finds the draft GAO report was well researched and presented, and responsive to the specific requests made by the Congress. However, we also believe these issues could have been placed in a more meaningful context of “net benefits,” making it an even more useful report. While NOAA understands GAO was asked to do a report on “costs” of individual fishing quota (IFQ) programs, the analysis would have been strengthened if GAO looked at benefits as well as costs. Such a net benefits approach would have provided a more accurate and comprehensive picture of the full economic effects of IFQ programs. This broader analytical framework could have been proposed and explained even in the absence of adequate economic data.

This study responds to three questions relating to the costs of IFQ programs. First, it provides information on the FY 2003 costs associated with managing current IFQ programs and how they compared with pre-IFQ management costs. Second, it determines what IFQ management costs are recovered by NOAA’s National Marine Fisheries Service (NMFS). Finally, it reviews various ways of sharing the costs of IFQ programs between government and industry.

The first question (costs before and after IFQ programs) is designed to provide additional information to fishery management councils considering the adoption of an IFQ program. NOAA’s view is that the critical issue is how management costs will change. For example, the GAO report repeatedly notes costs in the halibut/sablefish program increased, but decreased in the surf clam/ocean quahog program. This point would be more meaningful if the GAO report had placed more emphasis on the differences between the two fisheries and in the degree of complexity of the two IFQ programs.

The purpose of the second question (recovery of management and enforcement costs) is to determine how the mandated cost recovery program is being implemented. While NOAA agrees compliance with this provision has presented challenges, we also believe the report tends to exaggerate the problems. First, GAO notes NMFS does not systematically track IFQ costs, but these costs are in fact compiled annually by the NMFS Alaska Regional Office for the halibut and sablefish IFQ program. This annual exercise may not qualify as “systematic tracking,” but it does account for the majority of total recoverable costs in all IFQ programs. Second, the title of the report Management Costs... Were Not Recovered As Required may suggest to some readers non-compliance is a general problem, while the facts do not support that conclusion. In fact, with cost recovery in place in the halibut and sablefish IFQ program (which is the largest IFQ program), cost recovery applies effectively to over 95 percent of all IFQ permit holders, and 90 percent of all management and enforcement costs. Third, in the case of wreckfish, management and enforcement costs only amounted to $7,600, a negligible amount, and it would cost more to collect these fees. In fact, the non-compliance problem centers on one IFQ program (surf clam and ocean quahogs), with recoverable costs of only $274,000 in FY 2003.
See comment 4.

Another point NOAA believes could have been treated more equitably is what IFQ costs are recoverable under the law. NOAA's interpretation is recoverable costs are those directly attributable to the IFQ program. Although it is true the Magnuson-Stevens Act is not explicit in defining what costs are recoverable, NOAA maintains its interpretation is more consistent with the Magnuson-Stevens Act than GAO’s suggestion that all IFQ management and enforcement costs should be recovered. NOAA’s view that Congress intended to limit recoverable costs in IFQ programs as opposed to recovering all these costs is supported by several other provisions dealing with fees, including the following:

- a provision generally limiting fishing fees to the administrative costs in issuing the permits,
- a cap of three percent of ex-vessel revenue applying to IFQ fees, and
- a provision setting aside up to 25 percent of IFQ fees to fund a loan program for small-boat and entry-level fishermen resulting in only 75 percent of fees recovered, because the remainder is ploughed back into the IFQ fishery.

This question could be clarified if Congress, when it reauthorizes the Magnuson-Stevens Act, adds a definition or a more explicit explanation of recoverable costs in IFQ programs.

In summary, NOAA stresses the distinction between (1) changes in pre- and post-IFQ costs and (2) recoverable costs, and points to the surf clam and ocean quahog program as an excellent example. As GAO reports, management costs in this fishery have decreased after 1990, and NOAA believes this reduction in costs should be an important consideration when fishery management councils are debating the adoption of an IFQ program. At the same time, the attributable costs of the surf clam and ocean quahog program, that under law must be recovered, are positive ($274,000 in FY 2003).

The third question addressed in this report is how to improve the recovery of IFQ costs. GAO provides an interesting discussion of various means, including user fees, quota set-asides, and devolution of services. NOAA notes, however, “user fees” is the sole approach currently mandated in the Magnuson-Stevens Act and believes “quota set-asides” and “devolution of services,” while interesting in theory, are not available instruments under existing law. In addition, NOAA suggests GAO should also have considered “auctions” as a means of recovering IFQ costs. Finally, NOAA also finds some of the material in Appendix III on foreign IFQ cost sharing programs is of limited value and potentially misleading since the GAO report did not explain the different circumstances and general cost recovery policies in these other countries. NOAA would be interested in an exchange of views with Congress on these other means of recovering costs in federally managed fisheries.

**Recommended Changes for Factual/Technical Information**

NOAA suggests no factual/technical changes to the draft report.
Appendix IV
Comments from the Department of Commerce

Editorial Comments

NOAA offers no editorial comments to the draft report.

NOAA Response to GAO Recommendations

The draft GAO report states, "To comply with the cost recovery requirements of the Magnuson-Stevens Act, we recommend that the Secretary of Commerce direct the Director of NMFS to take the following two actions:"

Recommendation 1: “Implement cost recovery for all IFQ programs.”

NOAA Response: NOAA agrees with this recommendation. The IFQ cost recovery provisions in section 304(d)(2) of the 1996 Sustainable Fisheries Act amendments to the Magnuson-Stevens Act apply to all IFQ programs, even though Congress delayed its application to the surf clam/ocean quahog and wreckfish IFQ programs until after January 1, 2000. Further, in its Magnuson-Stevens Act reauthorization proposals the Administration transmitted to Congress in June 2003, cost recovery for all IFQ programs is specifically provided. NOAA and the Administration agree all future IFQ programs should include the recovery of directly attributable costs. With respect to the two existing East Coast IFQ programs not implementing this provision thus far, NOAA will work with the Mid-Atlantic and South Atlantic Fishery Management Councils on adding cost recovery to the surf clam/ocean quahog and wreckfish IFQ plans, respectively. At the same time, as noted in the GAO report, the costs associated with the two East Coast programs are modest, totaling just over $280,000 in FY 2003, and NOAA notes the costs of collecting these fees should be taken into account, especially in the wreckfish program in which management and enforcement costs amounted to only $7,600. With this in mind, NOAA is willing to consider a recommendation to Congress to add a de minimis rule exempting IFQ programs from the cost recovery requirement if those costs fall below some reasonable threshold. To that end, NOAA suggests GAO may want to introduce this issue as a “Matter for Congressional Consideration” so Congress, NMFS, and fishery management councils can explore it in the context of a broader discussion of cost recovery in federally managed fisheries.

Recommendation 2: “Develop guidance as to which costs are to be recovered and, when actual cost information is unavailable, how to estimate these costs.”

NOAA Response: NOAA agrees with this recommendation, because it will ensure the appropriate costs will be measured in a consistent manner in all fisheries. However, NOAA believes the current general methodology of defining recoverable costs as those that are directly attributable to the implementation of an IFQ program to be a correct interpretation of the Magnuson-Stevens Act. NOAA will develop guidance on how to identify activities directly attributable to an IFQ program. The guidelines will discuss how the costs associated with these activities can be measured using the product/service computation schedule in OMB Circular A-25 and Department of Commerce and NOAA Finance Handbooks.

See comment 8.
The following are GAO's comments on NOAA's written comments provided by the Under Secretary of Commerce for Oceans and Atmosphere in a letter dated February 11, 2005.

**GAO Comments**

1. As NOAA acknowledged, we were asked to report on the costs of IFQ programs. An analysis of the net benefits of IFQ programs was beyond the scope of our work.

2. We noted several times in the report that management costs changed with IFQ implementation, in part, due to the characteristics of the fishery and the complexity of the program. We believe that we have given this point sufficient emphasis and, for this reason, we made no changes to the report.

3. We disagree with NOAA's comments that the report exaggerates the problems of NMFS's noncompliance with the cost recovery requirements of the Magnuson-Stevens Act. NOAA does not believe that noncompliance is a general problem because NMFS is recovering costs for the largest and costliest IFQ program. However, the act requires NMFS to recover the costs of all IFQ programs, regardless of their size and cost. Our report title reflects our finding that NMFS is only recovering costs for one of the three programs. Not only does such a situation raise concerns regarding compliance with the law, it also raises concerns about fairness because halibut and sablefish quota holders are paying fees, while surfclam/ocean quahog and wreckfish quota holders are not. For these reasons, we made no changes to the report.

4. We disagree with NOAA's comment that our report suggests that all IFQ management and enforcement costs should be recovered. We said that the Magnuson-Stevens Act does not define “actual costs directly related to the management and enforcement” of an IFQ program. We also said that NMFS has defined the term to mean incremental costs and noted that there is another way to interpret costs, that is, full costs. We did not suggest that all IFQ management and enforcement costs should be recovered. Rather, we said that if the Congress would like NMFS to recover other than incremental costs, it may wish to clarify the IFQ cost recovery fee provision of the act. For this reason, we made no changes to the report.
5. Our report reviews different methods for sharing IFQ costs between government and industry in the United States as well as in other countries. We clarified that under U.S. law, the sole approach provided in the Magnuson-Stevens Act is user fees.

6. In our review of cost-sharing methods, we found that auctions were seen as an option for distributing quota shares and for other uses; they were not viewed as one of the principal methods for sharing IFQ costs. For this reason, we did not include auctions in our discussion.

7. The purpose of appendix III is to provide additional background information about cost-sharing programs for fisheries management in Australia, Canada, and New Zealand. We did not review the legal circumstances and options available to each country because an audit of each country’s cost-sharing program was beyond the scope of this report.

8. The scope of our work did not include an evaluation of the IFQ cost recovery provision of the Magnuson-Stevens Act. Therefore, we think that it would be premature to make a recommendation to Congress at this time.
### GAO Contact and Staff Acknowledgments

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#### Staff Acknowledgments
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