Renewable Resources in the Pacific

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The Economic Future of Alaska Groundfish under Extended Jurisdiction

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The groundfish resources of Alaska make a significant contribution to U.S. and world economic well-being. However, they are not likely to be the basis for an economically viable U.S. fishing industry, at least in the near or intermediate future. Fortunately, the capture of economic value from a natural resource does not necessarily require extensive participation by the owner (national or individual) in the extraction. At present, U.S. policymakers have to decide the most effective way of ensuring adequate compensation for access to the resource.

L'abondance des lieux de pêche de l'Alaska constitue une ressource susceptible d'apporter une contribution importante à la santé économique des États-Unis et du monde entier. Cependant, ces zones ne peuvent constituer, à court et à moyen terme la base d'une industrie de pêche rentable pour les Américains. Heureusement, la récupération des profits d'une ressource naturelle donnée ne dépend pas nécessairement de l'extension de la participation du propriétaire (particulier ou État) à l'exploitation de cette ressource. Les autorités américaines étudient actuellement les moyens de fixer une compensation équitable pour la concession de l'accès à ces lieux de pêche.

The groundfish resources of Alaska consist of several demersal species that together sustained a 1980 harvest of 1,558 Mt (Table 1). The term groundfish reflects economic rather than biologic similarities within the species group. Virtually all the harvest is taken by trawlers that process their catch on board. Groundfish destined for U.S. or European markets are normally filleted and frozen individually or in blocks. Those in blocks are subsequently converted into fish sticks and other convenience foods. Oriental markets use groundfish in a variety of other forms, the quantitatively most significant being fish paste.

Until the extension of U.S. national jurisdiction in 1977, the groundfish resources of the Gulf of Alaska and Bering Sea were one of the world's largest international common-property fisheries, even though the U.S. fishing industry was almost totally unrepresented. The major players were Japan and the USSR.

Like those in most other coastal states, U.S. fisheries policymakers saw the new control as the first step in converting the international fishery into local industry. The Fisheries Conservation and Management Act of 1976 (FCMA) set the development of domestic fisheries, particularly for Alaska groundfish, as a national policy objective. However, the extension of jurisdiction, alone, does not imply development of a domestic groundfish industry. The U.S. industry took no interest in Alaska groundfish resources when it had equal access to undepleted stocks during the 1950s and the early 1960s, although the country was rapidly becoming the world's largest consumer of frozen groundfish. But the extension of jurisdiction and other economic signals in 1977 apparently were interpreted as evidence that rapid development of the U.S. groundfish industry was imminent. The first signal was a substantial increase in the real (inflation-adjusted) prices of groundfish blocks and fillets on the world market, even though an examination of longer-term price trends would have raised the possibility that this was just an upswing in one of the industry's periodic price cycles. Second, 1977 was a boom year for fishing-vessel construction in the U.S., particularly the construction of large (>100-t) vessels, capable of groundfish trawling but primarily designed to exploit Alaska's king and tanner crab resources. Some purchasers of
vessels did require special features for groundfish trawling on the premise that these would be expensive to install later.

An abrupt change occurred in mid-1979. Prices of king crab, and eventually of most Pacific-coast species, declined sharply. The immediate result was a halt in new orders for the large trawlers upon which hopes for domestic groundfish development had hinged. As early as mid-1977, the prices of frozen groundfish fillets and blocks had, in real terms, already begun the decline from which they have yet to recover. At the same time, fuel and investment capital became more expensive. The result has been modest growth in the domestic Alaska groundfish industry. Alaskan processors tried, with limited success, to fillet groundfish when their plants were not being used to process higher valued species. Similarly, groundfish catches were made by idle U.S. fishing vessels. However, the largest U.S. catches were, and continue to be, made as part of joint-venture arrangements with foreign-fishing interests. Of the total 1.558 Mt of Alaska groundfish harvested in 1980, 1.512 Mt (97%) were taken by foreign fishing vessels. Furthermore, 34,000 t of the 47,000 t U.S. harvest (72%) was processed on foreign factory ships participating in joint ventures.

Although one may regard 3 years as too short a time to conclude that early enthusiasm about a U.S. groundfish industry was unwarranted, other factors support this conclusion. One is the failure of several early groundfish processing ventures and subsequent withdrawal of their sponsoring firms. Also, there has been virtually no new investment in groundfish-dedicated plants or vessels. The furthest the industry has ventured has been to refit existing vessels and processing plants with mechanisms for groundfish production during the off-seasons for higher valued species. Although such an approach makes economic sense as a low-risk way of testing economic conditions, it cannot be seen as the basis for a large-scale industry.

Thus, the market has spoken at least for the near future. But it has only said what will not happen. What will happen still requires speculation. In my view, there are four possibilities: two of them include development of a domestic groundfish industry, whereas the other two involve allocation of the resources among primarily foreign participants.

### Market-Induced Development

The possibility that market forces will eventually lead to development of a U.S. groundfish industry in Alaska cannot be completely dismissed. Presumably, world groundfish demand will grow at least in proportion to population increases in the major consuming regions — the U.S., Europe, and Japan. Demand for frozen fish blocks will likely grow even faster, as the convenience foods produced from them exhibit a greater income elasticity than is typical of other fisheries products.

Supply may or may not keep pace at current prices. Most of the world's major groundfish
resources are already fully exploited, or overexploited, although some opportunities exist for new groundfish-resource development, particularly in the economic-resource zones of southern hemisphere nations like Argentina and South Africa. Also, if and when north Atlantic nations restrict their current catches to levels that permit the rebuilding of stocks, they will set in motion a process that should also lead to long-run supply increases.

If the demand outstrips both these possible sources of new supply, then the real price of frozen groundfish products could rise on the world market and, with it, the financial promise of an American groundfish industry in Alaska. Another factor that may lead to the same end is the recent rise in world petroleum prices. Much of the effect of post-1974 fuel-price increases on the world groundfish market may still be masked by the existence of a distant-water fishing fleet built under earlier economic conditions. The opportunity cost of deploying the fleet for the remainder of its economic life is low compared with that for rebuilding and operating subsequent generations of distant-water fishing vessels. The fleet can economically exploit world groundfish resources at real prices not significantly higher than those prevailing during the 1960s and early 1970s until new capital investments are required for replacement vessels. The world groundfish supply curve will then shift upward to reflect more fully the long-term effect of higher fuel costs, resulting presumably in higher real prices for frozen groundfish products.

Numerous groundfish feasibility studies (Scott 1980; Stokes and Offord 1981) have suggested the shape the industry would take if it were developed, beginning as a part-time operation providing off-season employment for personnel whose primary economic motive would be the harvest and processing of higher valued species. Eventually, the industry would shift to year-round operation to provide continuity of supply and to meet quality standards required for competition in U.S. and world groundfish markets.

One sector would comprise shore-based plants in Gulf of Alaska communities, processing the catch from medium-sized trawlers. Alongside this industry one might also find a limited hook-and-line fishery concentrating on higher valued species such as Pacific cod and rockfish; although its output would be small, it might become an important source of local employment.

The State of Alaska understandably favours development of such a shore-based groundfish industry. In fact, the state, and particularly the several communities bordering on the central and southeast Gulf, regard groundfish as one of the most promising renewable resources in their economic base. However, the fact that the majority of Alaska groundfish are located well to the west of these communities along the Aleutian Islands and in the Bering Sea means that much of the resource will have to be harvested and processed offshore.

Immediate processing and freezing of products at sea offers economic advantages as well as independence from shoreside facilities. At present, there is one U.S. vessel with processing capacity operating in Alaska waters — the Arctic Trawler. Formerly, the Arctic Trawler was government owned. It was purchased and refitted by a Seattle-based group, now harvesting Pacific cod and pollack with apparent technical and economic success. However, this venture's economic performance cannot be easily duplicated, the reason being that no other such vessel is available in the U.S.-built fleet and to construct such a vessel at current U.S. shipbuilding costs is not now considered to be a sound investment.

**Policy-Induced Development**

It is possible that a domestic Alaska groundfish industry will develop as a result of policies adopted by the U.S. federal government or the State of Alaska. Both the federal government and the State of Alaska (Scott 1980) currently subsidize fisheries development. However, there have not been any significant new federal subsidy programs instituted since extension of jurisdiction, nor in the present fiscal climate are any expected. In contrast, the State of Alaska, with considerable revenues from the taxation of oil production, is able to embark on major economic-development programs independently of the federal government and has elected to use a significant share of its coffers to develop renewable-resource-based industries including a shore-based groundfish industry (Scott 1980).

American international trade policy could have a major effect on the rate of Alaska groundfish development. Restriction of groundfish imports could raise prices; pressure on foreign nations to reduce trade barriers could open foreign markets; and relaxation of restraints imposed by the U.S. on fishing-industry inputs could reduce costs.

On both U.S. coasts, people have long advocated tariff protection for the groundfish industry. The most recent effort was a 1979 petition to the International Trade Commission filed on behalf of Pacific-coast groundfish trawlers. However, the tariffs remain 0–2.5¢/lb.
(0-5.5c/kg) (U.S. International Trade Commission 1980), whereas wholesale prices range from 75c to well over $1/lb. ($1.50-$2.20/kg).

Groundfish imports continue to enter the U.S. market free of significant trade restraints, and in 1980 U.S. groundfish demand was largely met by foreign sources (100% of groundfish blocks and 77% of fillets and steaks).

At the most recent groundfish-tariff hearings, fishing personnel argued that protection from foreign imports was essential if they were to penetrate the frozen groundfish market and even if they were to retain their current share of the U.S. fresh groundfish market. The "converters," distributors, and processors of imported groundfish countered that the internal structure of the U.S. fishing industry presented the most significant impediment to U.S. industry growth. In particular, they claimed that U.S. suppliers could not meet the quality standards of foreign suppliers (U.S. International Trade Commission 1980).

The converters also noted that raising tariffs or introducing quotas might be sufficient measures to make fishing for species such as cod and flatfish economic but would not be enough to tip the balance for pollack, the bulk of Alaska's groundfish resource. Any stringent trade restrictions would have a serious effect on U.S. groundfish consumption, the lower priced cuts of beef (hamburger) as well as pork and poultry being substituted for frozen fish sticks, fillets, etc. Casual observation, industry experience, and formal demand studies all point to strong consumer substitution relationships between groundfish and these other products. If U.S. consumers were to shift from imported groundfish toward domestically produced beef, pork, and poultry, domestic groundfish producers would have to recapture the market later, a problem perhaps more difficult than competing with foreign suppliers.

The U.S. government has pressured foreign nations to reduce their trade barriers to groundfish imports. Specifically, it has linked Japanese access to U.S. groundfish resources with trade policy and U.S. access to the large Japanese groundfish market. In early 1980 after the USSR was expelled from U.S. fishing grounds, U.S. fisheries officials embarked on what was termed a campaign of "fish-and-chips diplomacy." The purpose was to use a portion of the Soviets' former allocation as an incentive to other nations to relax their trade restraints or to purchase U.S. fisheries products. This effect met with some success, and nations who responded favourably were rewarded with new or increased 1980 allocations. This approach has now been introduced into U.S. law as part of the 1980 revisions to FCMA.

Ironically, tariffs and trade restraints imposed on inputs used by the U.S. fishing industry are one factor that keeps U.S. groundfish above world prices. The most significant cost increases result from the Jones Act, which prohibits U.S. personnel to use foreign-built vessels in U.S. fisheries. When FCMA extended fisheries jurisdiction to 200 miles, the Jones Act still applied only to fishing within the 12-mile limit. People soon discovered they could acquire and use surplus foreign trawlers in Alaskan waters and that the prohibition inside 12 miles was not a major economic restriction because they could transfer their frozen fish to a U.S.-built transport vessel or land in a foreign port. American shipbuilders immediately sought legislation to close the "loophole" that permitted this practice. What is surprising is that they were supported by a significant share of the U.S. fishing industry and numerous fishery policymakers. The argument of these fisheries people was that people who bought foreign boats could compete unfairly with those who had already invested large sums in a U.S.-built groundfish trawling fleet. Because no such fleet has yet appeared or is under construction, one must assume that the vessels being referred to were the numerous crabber trawlers then being built.

This apparent misunderstanding illustrates the necessity for viewing Alaska groundfish development in the context of the rest of Alaska's fisheries, particularly the crab fishery. At present, well over 200 vessels take the entire king crab quota in about 1 month, whereas historically far fewer vessels operated nearly year round.

King crab vessels, particularly the newer and larger ones, are the closest thing to a groundfish trawl fleet that currently operates in Alaskan waters. Many crabbers already harvest groundfish for U.S. and foreign joint-venture processors, and many others indicate an interest in doing so when, and if, groundfish harvesting becomes economically attractive: that is, whenever such an operation represents the most profitable employment of the crab vessel and its crew. By one estimate, the existing crab fleet could take 200,000-300,000 t of Alaska groundfish if all available crab vessels operated in the crab off-season. The adverse side effects when the season opens for king crab, and to some degree for Tanner crab, are that groundfish processors shut down, crews are laid off, and deliveries are terminated until the close of the crab season. Then processors must rehire and retrain crews and work to reestablish markets for their products.

Meantime, by contrast, their foreign competitors who harvest and process groundfish all year
maintain the skill levels of their workers by providing continuous employment and the good will of their customers by offering reliable supplies.

**Continued Foreign Exploitation under Present Allocation Rules**

Unless significant changes occur in economic conditions or in public policy, the domestic harvests of Alaska groundfish will fall far short of the harvestable total. Under FCMA, the U.S. commitment to full utilization requires continued allocations to foreigners. The recent revisions to FCMA have substantially changed the rules on how surpluses are allocated among competing foreign nations and how foreign fishing fees are assessed.

Under the original Fisheries Conservation and Management Act of 1976 the United States adopted a policy of allocating harvestable surpluses primarily on the basis of each nation’s traditional participation in U.S. waters. A rather nominal fee for those allocations was based on U.S. government costs that could be attributed to foreign-fishing activities.

Amendments adopted in 1980 de-emphasized traditional participation and introduced a new criterion for allocation: the recipient nation’s willingness to support U.S. fisheries development. The amendments also changed the language concerning foreign fishing fees.

Foreign fishery allocation determinations shall be made by the Secretary of State and the Secretary of Commerce on the basis of:

a. whether, and to what extent, such nations impose tariff barriers, or non-tariff barriers, on importation, or otherwise restrict, the market access of United States fish or fisheries products;

b. whether, and to what extent, such nations are cooperating with the United States in the advancement of existing and new opportunities for fishery products from United States processors or United States fishermen;

c. whether, and to what extent, such nations otherwise contribute to, or foster the growth of, a sound and economic United States fishing industry, including minimizing gear conflicts with fishing operations of United States fishermen, and transferring harvesting or processing technology which will benefit the United States fishing industry.

Fees imposed . . . shall be at least in an amount sufficient to return to the United States an amount which bears to the total cost of carrying out the provisions of this chapter (including but not limited to, fishery conservation and management, fisheries research, administration, and enforcement, but excluding costs for observers covered by surcharges . . .) during each fiscal year the same ratio as the aggregate quantity of fish harvested by foreign fishing vessels within the fishery conservation zone during the preceding year bears to the aggregate quantity of fish harvested by both foreign and domestic fishing vessels within such zone and the territorial waters of the United States during such preceding year (U.S. Congress, Public Law 94-265, 94 stat. 3299).

Another significant recent development in allocation policy has been the growth of joint ventures, particularly between U.S. vessels and foreign processors. Groundfish in the round are delivered to the processor at sea, where they are converted to products aboard the foreign-flag vessel. Usually, the U.S. fishing vessel simply tows its trawl net to the vicinity of the processor vessel. There the cod end of the net is detached and tied to a buoy until the fish it contains can be processed.

Joint ventures were apparently not foreseen by the original drafters of FCMA nor are they explicitly dealt with in either the old or the new foreign allocation and fee provisions. The only reference FCMA makes to joint ventures is the so-called processor-preference amendment, which restricts them from direct competition with U.S. processors.

Regardless of how joint ventures are legally treated, their development is a natural economic outcome of U.S. policy concerning fisheries allocation. Given that the demand for foreign allocations exceeds the supply, one would expect foreigners to seek to increase their share of the total. FCMA provides no way for an increase in share except from American fishing vessels, which have not only an automatic preference over all foreigners but also the right to take groundfish without paying any significant fees. U.S. and foreign entrepreneurs have quickly discovered the obvious route to a marriage of interests.

Under current joint-venture arrangements, the foreign participants normally provide the labour and capital inputs required for processing. For these, they hold the advantages of paying lower wage rates and of having already acquired capital equipment. The U.S. vessels provide the fishing effort at a relatively low cost because most joint-venture fisheries operate during the crab off-season when economic alternatives are limited. However, the crucial contribution of the U.S. vessels is their access to the resource on a preferential, no-fee basis. The result, as recent experience has shown, has been a commercially profitable venture for both partners, accounting in 1969 for 72% of U.S. landings of Alaska groundfish.
Foreign Fishing Fees: an Allocation Device

That monetary fees have been given so little consideration as a tool in allocating U.S. fishery resources is a little puzzling. The federal government relies heavily on fees to allocate federally owned timber, petroleum, minerals, and other natural resources; and other coastal nations have included newly acquired fisheries resources among those they sell to foreign interests. Elsewhere, I (Stokes 1981) have dealt with the way that fees could be used to allocate U.S. fisheries resources.

Briefly, one method would be to set a fee and to observe whether the total demand for allocations exceeds or falls short of the allocable surplus. The response would indicate whether increases or reductions in the fee were needed. The fee would have to be adjusted as economic conditions change. Alternatively, the U.S. could take bids on appropriately defined units of fishery resources. Potential buyers would then determine the market-clearing fee by offering bids. The highest of these would be accepted by the U.S. until the available surplus was allocated.

A variety of factors other than the value of allocations to potential buyers would determine the actual level of revenues received by the U.S. Perhaps the most important of these would be the extent of competition among buyers. The economic theory of bidding indicates that only under competitive conditions will bids approach the net profit to be expected from the allocation.

In trying to sell Alaska groundfish, the U.S. would face a far from competitive market structure. Rather, the market would consist of one dominant buyer, Japan (77% of the 1980 allocation), and a periphery of smaller competitors. The Japanese would presumably recognize and exploit this market power, and how the U.S. would counter in the resulting bilateral bargaining situation is not clear. However, the U.S. position would be strengthened by the existence of current or potential competition.

Hence, policies that restrict competition can be seen as weakening the U.S. hand when and if market allocation is ever adopted. Included among these policies would certainly be any residual allegiance to the traditional fisheries concept, which denies bidding rights to potential competitors simply because they have not historically fished in U.S. waters. The same would be true of the ban on fishing by the Soviet Union which, until its exclusion, was Japan's principal competitor for U.S. fisheries resources.

Conclusions

The options for the U.S. in effectively managing its groundfish resources do not exclude the development of a domestic capacity to exploit them; however, in the short and medium term, there are much more economically rational approaches. The first step is a rethinking of the policies on allocation of the resources. If policymakers were to decide to maintain present allocation policies, then they would need to give much greater attention to joint ventures than they are currently. If they decided to change the policies on allocation, they could consider several means of obtaining fees that are commensurate with the value of the resource.

Discussion

Yoshiaki Matsuda: In contrast to early expectations, the domestic Alaska groundfish industry has developed little in the 3 years since FCMA was enacted. Realizing this fact, Stokes discusses possible alternative management schemes for resource use, including market-induced development, policy-induced development, continued foreign exploitation under present allocation rules and under a new schedule of fees. Each possibility has advantages and disadvantages. Market-induced development is favourable from the economic point of view but unfavourable from the social point of view; policy-induced development promotes balanced domestic fisheries development but could be very expensive; continued foreign exploitation under present allocation rules encourages local development through joint ventures with foreigners but reduces the U.S. government's share of fee income; and foreign fishing fees provide fee income at low administrative cost but discourage domestic fisheries development. The options require that priorities be set and trade offs be made in accordance with the priorities.

I agree with Stokes' conclusion that the U.S. must avoid encouraging groundfish operations that could never survive on their own in the open market and would require permanent subsidy if