United States General Accounting Office

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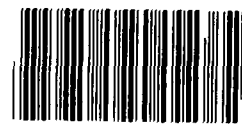
Briefing Report to Congressional Requesters

March 1987

U. S. FISHING FEES

Implications of Increases on Japan and the Merits of Other Fee Systems



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GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-215905

March 19, 1987

The Honorable Gerry E. Studds
Chairman, Subcommittee on Fisheries
and Wildlife Conservation and the
Environment
Committee on Merchant Marine and
Fisheries
House of Representatives

The Honorable Don Young
Ranking Minority Member,
Subcommittee on Fisheries and Wildlife
Conservation and the Environment
Committee on Merchant Marine and
Fisheries
House of Representatives

By letter dated April 8, 1985, your Subcommittee expressed concern that increasing U.S. fishing fees may cause foreigners to reduce their fishing in U.S. waters, and that such a reduction may affect U.S. revenues and joint ventures whereby U.S. fishermen sell and transfer their catch while at sea to foreign processing vessels. The Subcommittee requested GAO to examine several issues and was particularly interested in the effect of the U.S. fishing fees on Japan. Japan's catch has accounted for about two-thirds of the foreign catch in U.S. waters and is principally of one fish species--Alaska pollack, which is processed into surimi (a fish paste used to produce other seafood products such as imitation crab legs). On November 21, 1986, we briefed your office on the results of our work and, as agreed, are providing you with this briefing report.

The Magnuson Fishery Conservation and Management Act (Apr. 13, 1976) (16 U.S.C. 1801) extended U.S. authority to regulate and manage the fishery resources in a fishery conservation zone (FCZ) within 200 miles of the U.S. coast. The act, as amended, gives priority to U.S. fishermen for fishing rights within the 200-mile zone and to U.S. fish processors for the fish U.S. fishermen catch. The balance of the U.S. catch is available to foreign processors through joint ventures with U.S. fishermen. Foreign fishing within

the FCZ is limited to those species that U.S. fishermen do not fully harvest and has decreased as U.S. fishing has increased. The amended act also requires foreign nations fishing in the FCZ to pay fishing fees, but no fees are assessed U.S. fishermen whether the catch is for domestic processors or for joint venture processing. The Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) administers fishery activities under the act.

In recent years, foreign fishing in the FCZ declined substantially. For example, the U.S. allocation to Japan of fishing rights to Alaska pollack declined from about 942,000 metric tons in 1981 to about 298,000 metric tons in 1986, and to only 675 metric tons for the first half of 1987. This decrease is largely because U.S. fishing increased, both for fish processed domestically and processed by foreigners under joint ventures.

The issues GAO examined are summarized below and discussed in more detail in sections 1 through 7.

1. What are the Japanese consumption and supply trends for fish species from U.S. waters and do the trends indicate the extent to which Japan's Alaska pollack prices respond to supply changes?

   Japan leads the world in fish consumption and supply.[1] Its per capita fish consumption is more than twice that of any other nation, but has leveled off since 1979. Its total supply has been increasing, primarily because of a larger sardine catch in the waters near Japan. Our comparison of changes in Japan's quantities of Alaska pollack brought ashore and sold and the Japanese wholesale price showed an inconsistent pattern of changes and did not indicate the extent to which prices respond to supply changes.

2. Are alternative supplies of fish and fish products available to Japan?

   According to NOAA and Japanese officials, Japan does not have alternative supplies of Alaska pollack. Surimi can be made from alternative fish species, such as sardines, which are plentiful in Japan's waters, but these officials said that this surimi has not been fully accepted by the Japanese consumer. According to Japanese officials, Japan

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[1]For this study, we examined trends showing fish supplies available to Japan from its harvests, joint ventures, and imports.

could, however, substitute by directly consuming low-valued species, such as sardines.

3. What percentage are U.S. fishing fees of the wholesale price of fish in Japan?

   Although U.S. fishing fee rates per pound have nearly tripled over the past 5 years, other factors, such as increased yen values and increased wholesale prices, have mitigated the fee increase, and the fee has been a small part (4 to 7 percent) of the Japanese wholesale price.

4. On the basis of issues 1 through 3, what are Japan's probable actions with respect to (1) reducing its fishing in U.S. waters, (2) increasing its joint ventures with U.S. fishermen, and (3) increasing its purchases of U.S.-processed fish products?

   (1) Japan's fishing in U.S. waters has declined because of reduced U.S. allocations, not increased U.S. fishing fees. Even with increased fees, Japan has desired additional allocations of Alaska pollack from U.S. waters. (2) Japan's joint ventures with U.S. fishermen began in 1981 and grew steadily through 1986, but this upward trend may end in 1987. For 1987, NOAA reserved 881,103 metric tons of Alaska pollack for joint ventures, down from 899,265 metric tons provided through joint ventures in 1986. (3) When its fishing in U.S. waters for a species such as sablefish has ceased in the past, Japan has increased imports of that species from the United States. The Japanese have invested in shore-based processing plants in Alaska and in 1986 imported U.S.-processed surimi for the first time. If continued, such trends suggest that Japan would increase imports of U.S.-processed fish products as less fish becomes available to Japanese processors.

5. What are the principal types of fishing fee systems used in other countries?

   Three basic types of fee systems are in use around the world: lump sum fees for a fixed period of time, fishing effort fees based on fishing vessel capacity, and royalty fees based on the actual catch.

6. What are the advantages and disadvantages of a flat poundage fee system?

   In 1976, NOAA considered establishing a flat fee system, which would have applied the same fee to a quantity of fish caught, regardless of the species or value. An advantage would be a simplified fee computation. A

disadvantage cited by officials from the Food and Agriculture Organization of the United Nations (FAO), government, and industry is that the flat fee might be higher than the value of the low-valued fish.

7. What are the advantages and disadvantages of the auction system proposed by NOAA and what is its status?

   From 1982 through 1985, NOAA considered whether an auction system should be adopted. Assuming a competitive environment, an auction system is theoretically the best method for determining the fair market value. However, NOAA and FAO officials cautioned that since Japan is the dominant foreign nation fishing in U.S. waters, it could dominate bidding and eventually eliminate competitors. In the fall of 1985, NOAA decided not to pursue an auction system primarily because decreased foreign fishing made an alternative fee system unnecessary.

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We did our work from August 1985 through August 1986. We held discussions with and obtained documents from officials within NOAA and the State Department, the Government of Japan, industry organizations, and FAO. Our review objectives, scope, and methodology are discussed further in section 8, and a list of organizations we visited is in appendix I.

We discussed this report with NOAA and Japanese embassy officials, and incorporated their views where appropriate. As requested by your office, we did not obtain official agency comments on a draft of this report. As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this briefing report until 7 days from the date of this letter. At that time, we will send copies to interested parties and make copies available to others upon request.

Major contributors are listed in appendix II.

John H. Luke

John H. Luke
Associate Director

Contents

ILLUSTRATIONS

ABBREVIATIONS

EEC	European Economic Community
FAO	Food and Agriculture Organization
FCZ	fishery conservation zone
GAO	General Accounting Office
GRT	gross registered ton
kg	kilogram
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
RCED	Resources, Community, and Economic Development Division
TALFF	total allowable level of foreign fishing

SECTION 1

WHAT ARE THE JAPANESE CONSUMPTION AND SUPPLY TRENDS FOR FISH SPECIES FROM U.S. WATERS AND DO THE TRENDS INDICATE THE EXTENT TO WHICH JAPAN'S ALASKA POLLACK PRICES RESPOND TO SUPPLY CHANGES?

Japan leads the world in fish consumption and supply (the total amount of fish available to Japan from its harvests, joint ventures,[1] and imports). Japan's per capita fish consumption is more than twice that of any other nation, but it has leveled off. Its total supply has been increasing, primarily because of a larger sardine catch in the waters near Japan. Our comparison of changes in Japan's landed volume of Alaska pollack (quantities brought ashore and sold) and wholesale price of Alaska pollack disclosed an inconsistent pattern and did not indicate the extent that prices responded to supply changes.[2]

JAPAN'S FISH CONSUMPTION HAS LEVELED OFF

Japan consumes more fish than any other nation in the world. Together with rice and soybeans, fish is a traditional staple of the Japanese diet. As shown in figure 1.1, fish products provide a relatively large part of the animal protein in the Japanese diet.

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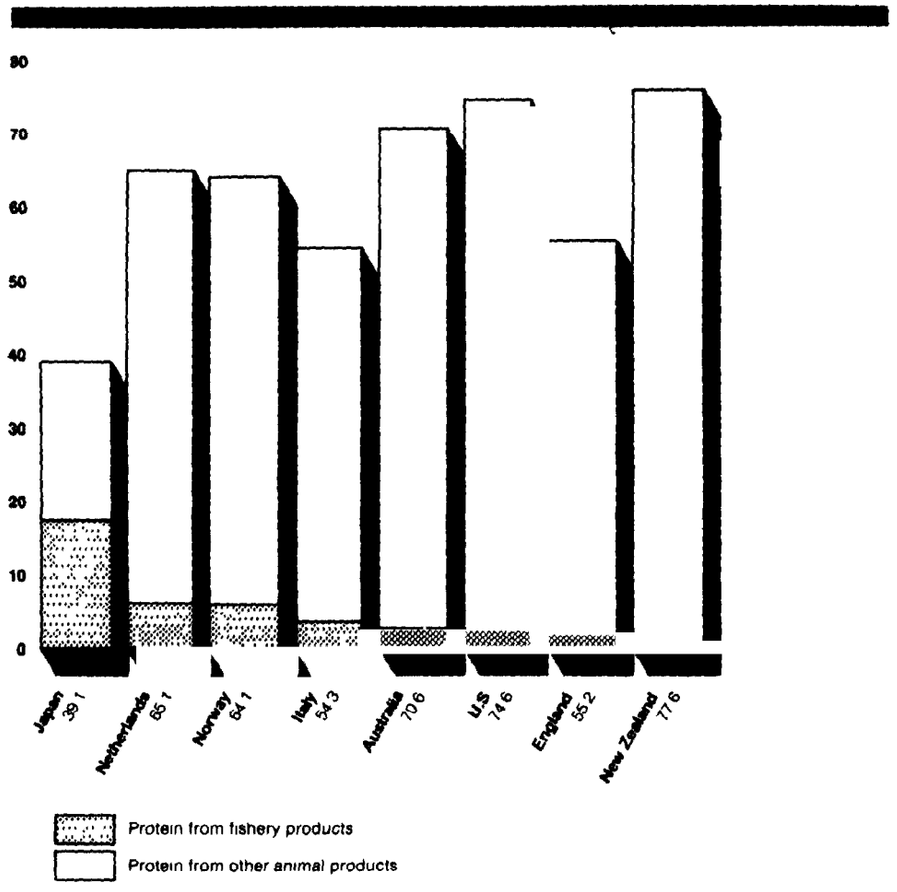
[1]Under joint ventures, fishermen from other countries (including the United States) sell and transfer their catch while at sea to Japanese processing vessels.

[2]The landed volume of Alaska pollack does not include quantities that are processed into surimi at sea.

Figure 1.1: Protein Consumption from Fish and Other Animal Products in 1983 (in grams per person, per day)



Source. "Fisheries and Fishery Products in Japan," Japan's Agricultural Review, March 1984.

The most recent information Japanese government officials provided showed that Japan's consumption of fish products in 1983 was 12.5 million metric tons, with human consumption about 9.2 million metric tons. More current statistical information on Japanese fish consumption was not readily available. The level of human consumption in 1983 was about the same as in 1982, and the consumption level has been relatively stable since 1979. In addition to the leveling off of fish consumption, the Japanese consumer price index for fresh fish and shellfish products has increased at a rate approximately equal to the rate of growth of the general and food price indexes, as shown in table 1.1.

Table 1.1: Japanese Consumer Price Index

Year	General price index	Food price index	Fish and shellfish price index
1980	100.0	100.0	100.0
1981	104.9	105.3	102.8
1982	107.7	107.2	110.9
1983	109.7	109.4	110.4
1984	112.1	112.5	112.7
1985	114.4	114.4	115.5

Note: 1980 = 100 percent.

Source: Annual Report on Japan's Fisheries, Fiscal 1984 Summary, The Ministry of Agriculture, Forestry, and Fisheries, Government of Japan and Monthly Statistics of Agriculture, Forestry, and Fisheries, June 1986, Government of Japan.

Past studies have shown that total fish consumption in Japan is no longer growing, while consumption of beef and poultry is increasing.[3] According to the studies, this reflects growing income in Japan and consumer tastes that prefer the more expensive beef and poultry to fish. Although total fish consumption is not rising, the consumption of medium- and high-priced fish, such as tuna, yellowtail flounder, shrimp, and crab has been increasing, while the Japanese are eating less lower priced fish, such as mackerel.[4] The studies also attribute this to the rise in income allowing the Japanese to purchase more of the medium- and high-priced fish, which are preferred but were previously not affordable in as large quantities.

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[3]Food Consumption in Japan, E.A. Sox, Bureau of Agricultural Economics, Canberra, Australian Government Publishing Service, 1975; The New Law of the Sea and the Japanese Fishing Industry: Implications for U.S. Agricultural Exports, Annie Y. Kester, Economic Research Service, U.S. Department of Agriculture, Apr. 1982; and Japan's Feed-livestock Economy, William T. Coyle, Economic Research Service, U.S. Department of Agriculture, Feb. 1983.

[4]As discussed in section 2, this trend may affect the Japanese response to a reduced or more expensive supply of Alaska pollack.

Table 1.2: Japanese Consumption of Fish Products Produced in Japan during 1983

Type of fish product	Quantity consumed[a]	Percent
	(thousands of metric tons)	
Fresh and frozen fish	2,867	37
Dried, salted, and smoked fish	2,495	32
Kneaded (surimi products)	1,975	25
Fish sausage	135	2
Canned fish	362	5
Total[b]	7,834	100

Note: Does not include imports.

[a]Amounts are shown in terms of the weight of the whole fish before processing (live weight).

[b]Percentages do not total 100 due to rounding.

Source: Fisheries Statistics of Japan 1983, The Ministry of Agriculture, Forestry, and Fisheries, Government of Japan.

As table 1.2 indicates, surimi is important in the Japanese diet. Surimi itself is not consumed directly but is an intermediate material from which traditional Japanese kneaded foods, called "kamaboko" (fish cake), and products, such as imitation crab legs, are made. Although Japan's surimi production declined from 1976 to 1980, it increased from 1981 to 1984. Nearly all of the amounts produced have been consumed within Japan. Exports, primarily to the United States in the form of imitation crab meat, totaled 32,462 metric tons, or about 3 percent of the surimi products (990,449 metric tons processed weight) Japan produced in 1984.

JAPAN'S FISH SUPPLY HAS INCREASED

Japan's total fish supply increased from 1980 through 1984 because of increased harvests; joint ventures with U.S.,[5] Soviet, and North Korean fishermen; and imports.

-- Japan's fish catch increased from about 10.4 million metric tons in 1980 to about 12.0 million metric tons in 1984.

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[5]In 1986 Japanese processors paid U.S. fishermen from about $106 to $112 per metric ton of Alaska pollack transferred at sea, depending on the price negotiated in their joint venture contracts.

The Alaska pollack catch was relatively stable during this period, but the total catch increased, largely because of an increase in the sardine catch.

-- Japan's joint ventures with U.S. fishermen began in 1981 and grew to about 467 thousand metric tons in 1985. About 431 thousand metric tons of fish caught through these joint ventures, or 92 percent, were Alaska pollack.

-- The value (in 1985 dollars) of Japan's fish imports increased from about $3.9 billion for 1 million metric tons in 1980 to about $4.9 billion for 1.6 million metric tons in 1985.

Total fish catch increased

From 1980 through 1984 Japan's total fish catch increased each year, as shown in table 1.3.

Table 1.3: Japan's Commercial Fish Catch

Year	Catch[a]
	(thousands of metric tons)
1980	10,436
1981	10,741
982	10,827
1983	11,255
1984	12,021

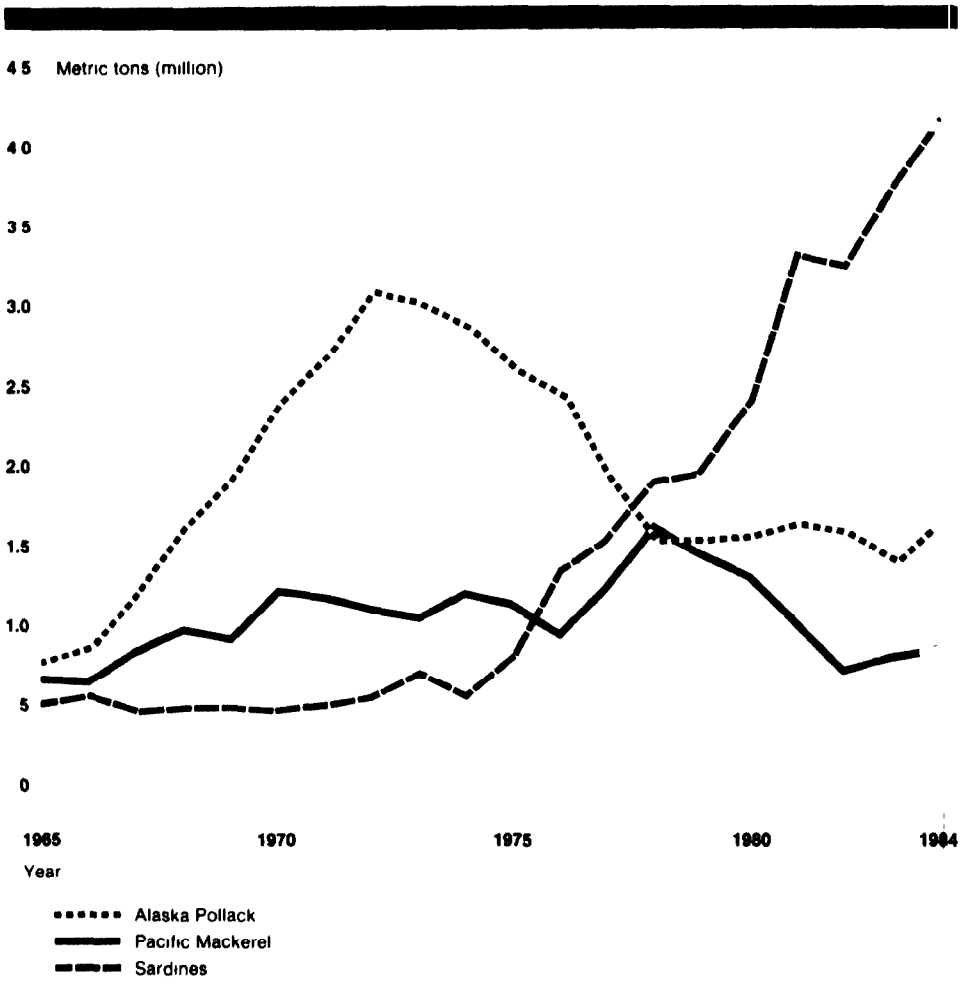
Note: Excludes marine mammals and aquatic plants.

[a]Live weight.

Source: Fisheries of the United States, 1985, April 1986, National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce.

In the early 1970's Japan caught more Alaska pollack than any other species. However, its catch of sardines has increased and its Alaska pollack catch has declined. Since 1978 Japan has caught more sardines than Alaska pollack, as shown in figure 1.2.

Figure 1.2: Japan's Catch by Major Fish Species



Source Surimi, Southwest Region, NMFS, NOAA, Department of Commerce, January 1986

Japan has been fishing for Alaska pollack in U.S. waters off the coast of Alaska and in the Northwest Pacific Ocean waters of the Soviet Union. About half of its Alaska pollack catch in 1984 was from U.S. waters, about 15 percent from Soviet waters, and the balance from waters near Japan.

Japan's Alaska pollack catch in U.S. waters has declined largely because of reduced allocations. Each year, the North Pacific Fishery Management Council, which oversees fisheries management and conservation activities in U.S. waters off the Alaskan coast for NMFS, determines the total allowable catch of Alaska pollack by considering biological and socioeconomic factors. Using surveys of industry and requests for joint

venture permits, the council reserves a portion of the total allowable catch for U.S. fishermen. Since domestic processors have priority to the fish caught by U.S. fishermen, the council separately designates reserves for domestic processing and for joint ventures. These reserves can be exceeded if the total allowable catch has not been reached. Small amounts are set aside in an unallocated reserve for release during the year. The balance of the total allowable catch is designated by the council to be the total allowable level of foreign fishing (TALFF). The council's determination and apportionment of the total allowable catch are subject to review and approval by the Secretary of Commerce.

The approved TALFF is allocated to foreign fishing nations by the Secretary of State in consultation with the Secretary of Commerce. Factors considered in making the allocations include the foreign nation's historical level of fishing in the U.S. fishery conservation zone (FCZ); its cooperation in fisheries research and resource identification activities; its cooperation in fisheries enforcement and contributions to the development of the U.S. fishing industry;[6] and foreign policy considerations, such as the Soviet invasion of Afghanistan in 1980.

[6]In 1980 the Congress added the "fish and chips" concept to the Magnuson Act, whereby foreign nations are asked to help the U.S. industry develop (through actions such as at-sea purchases through joint ventures with U.S. fishermen, purchases of U.S.-processed fish products, and investments in the U.S. fishing industry) in exchange for their direct fishing allocations.

Table 1.4: Allowable Catch of Alaska Pollack in U.S. FCZ and Allocation to Japan

Year	Allowable catch				Allocation to Japan
	Total[a]	Domestic annual harvest[b]		TALFF[e]	
		Domestic processing[c]	Joint ventures[d]		
	(metric tons)				
1981	1,296,933	4,617	66,226	1,226,090	941,887
1982	1,268,800	16,000	62,280	1,190,520	935,971
1983	1,316,600	16,000	247,370	1,053,230	797,305
1984	1,716,600	28,000	500,050	1,175,635	770,851
1985	1,621,600	75,871	643,179	899,230	665,601
1986	1,416,600	131,635	883,243	396,542	298,153
1987[f]	1,396,000	334,897	881,103	5,000	675[g]

[a]The total allowable catch is determined by the North Pacific Fishery Management Council.

[b]Amounts reserved for U.S. fishermen.

[c]Amounts of U.S. harvested fish reserved for domestic processors.

[d]Amounts of U.S. harvested fish reserved for joint ventures whereby U.S. fishermen sell and transfer their catch at sea to foreign processors.

[e]The TALFF is the portion of the allowable catch that will not be harvested by U.S. fishermen that is made available to foreign fishermen. The sum of the TALFF and the domestic annual harvest may not equal the total allowable catch because the total includes amounts of unallocated reserves.

[f]Initial 1987 allocations, which are subject to adjustments during the year.

[g]Allocation to Japan for the first half of 1987.

Source: NMFS, NOAA, Department of Commerce.

As table 1.4 shows, the U.S. allocation to Japan of Alaska pollack declined to about 298,000 metric tons in 1986 and will decline further in 1987. The 1987 TALFF for Alaska pollack is 5,000 metric tons, and Japan's allocation of Alaska pollack is 675 metric tons for the first half of 1987. According to NMFS officials, this allocation is subject to change, but starting in 1987, little foreign fishing will be allowed for Alaska pollack.

U.S. allocations of Alaska pollack to foreigners, including the Japanese, have declined primarily because U.S. fishermen have

increased the size of their catch. The increased reserves for domestic processing and for joint ventures shown in table 1.4 reflect this increase. In addition to the size of the U.S. catch, changes in the total allowable catch of a fish species also affects the foreign allocations. Thus, the decline in Japan's Alaska pollack allocation is not due solely to the increase in the size of the U.S. catch, but is also partly due to the decline in the total allowable catch of Alaska pollack from 1,716,600 metric tons in 1984 to 1,396,000 metric tons in 1987. Table 1.5 shows the actual catch of Alaska pollack in the U.S. FCZ by U.S. and foreign fishermen from 1981 through 1986.

Table 1.5: Actual Catch of Alaska Pollack in U.S. FCZ

		U.S. catch		Foreign catch	
Year	Total[a]	Domestic processed	Joint venture processed	Total	Japan
	(metric tons)				
1981	1,177,003	797	58,939	1,117,267	855,157
1982	1,182,754	2,372	128,433	1,051,949	835,397
1983	1,257,176	1,210	283,145	972,821	732,149
1984	1,487,309	10,947	444,112	1,032,249	722,807
1985	1,529,968	61,680	615,400	852,888	643,828
1986[b]	1,313,619	58,228	899,265	356,127	263,064

[a]Total may not equal the sum of the U.S. and foreign catch due to rounding.

[b]Preliminary data.

Source: NMFS, NOAA, Department of Commerce.

Although Japan has not caught all of its Alaska pollack allocation, a NMFS official explained that part of the allocation is held in reserve for contingencies until late in the year, and the Japanese have been unable to plan sufficiently to catch 100 percent of the allocation. Another NMFS official said that the improved efficiency in recent years while the fees have been increasing is an indication that Japan wants all the Alaska pollack it can directly catch in U.S. waters. In this regard, Japanese government, NMFS, State Department, and industry officials told us that Japan desires a larger allocation of Alaska pollack than the United States has provided each year.

United States/Japan Joint Ventures Have Increased

Although Japan's direct catch in U.S. waters has declined, its joint ventures with U.S. fishermen increased through 1986. Japan

began participating in joint ventures with U.S. fishermen in 1981. As a result of the U.S. "fish and chips" policy and United States/ Japan industry-to-industry agreements, Japan has been increasing its purchases of fish under joint ventures with U.S. fishermen. In return for participating in the joint ventures, Japan has received its historical proportional share of the U.S. TALFF. Table 1.6 shows the amounts of fish caught and processed in joint ventures between the United States and Japan for 1981 through 1985.

Table 1.6: U.S. Joint Ventures with Japan

Year	Alaska pollack	Pacific cod	Flounder	Other	Total
	(metric tons)				
1981	11,338	58	2	375	11,773
1982	66,125	263	9	665	67,062
1983	210,819	973	45	2,336	214,173
1984	340,401	3,540	4,921	2,343	351,205
1985	431,441	6,200	23,473	6,252	467,366

Source: NMFS, NOAA, Department of Commerce.

Although joint ventures have made large amounts of Alaska pollack available to Japan, Japanese fishing industry officials told us that in 1986 the United States could not supply all the pollack Japan wanted under joint ventures. In 1986 Japan obtained about 525,000 metric tons of Alaska pollack through joint ventures with U.S. fishermen. The North Pacific Fishery Management Council, which recommends the amount of fish to be made available to joint ventures, acknowledged that this was a problem. The council's executive director noted that there was a shortage of U.S. harvesting vessels, and in March 1986 estimated that an additional 26 to 34 vessels were needed.[7] One joint venture operator told us that U.S. vessels could harvest more fish if the operating year were extended (from 9 or 10 months to 11 months) and if additional fishing vessels were converted for joint ventures. The operating year for joint ventures was about 8 months in 1985 and was extended to 9 or 10 months in 1986, depending on the joint venture operator. Regarding the number of fishing vessels, a NMFS official told us that in June 1986, about 135 U.S. fishing vessels were participating in joint ventures with foreign countries, about half of which were with Japan. This official said the maximum number of U.S. fishing vessels available for joint ventures would be about 150 because vessel owners/operators could not recover the costs of building new vessels before joint ventures start to decline. In

[7]Memorandum regarding joint ventures from Jim H. Branson, Executive Director, North Pacific Fishery Management Council, to the council's members and advisors, Mar. 14, 1986.

this regard, joint ventures may have already started to decline. (See table 1.4, amounts reserved for joint ventures, 1986 and 1987.)

Besides participating in joint ventures with U.S. harvesters, Japanese fishing companies purchase Alaska pollack directly from Soviet Union and North Korean fishing vessels for processing on factory ships into surimi and fish meal. The Japanese quota for the joint ventures with the Soviets was established in 1966 at 65,000 metric tons per year, and Japan began joint ventures with North Korea in 1986. Japanese companies are also investing in U.S. shore-based facilities. They have invested in pollack processing plants in Alaska and in surimi processing plants on the West and East coasts.

Imports have increased

Japan's fishery imports have grown from about 1 million metric tons valued at about $3.9 billion (in 1985 U.S. dollars) in 1980 to about 1.6 million metric tons valued at about $4.9 billion in 1985. The value of shrimp imports in 1985 was about $1.6 billion, or about one-third of the total value of fishery imports. Other major species imported include salmon, tuna, swordfish, squid, octopus, herring roe, eel, and crab. The value of Japan's imports for 1980 through 1985 is shown in table 1.7.

Table 1.7: Value of Japan's Fishery Imports

1980	1981	1982	1983	1984	1985
(millions)					
$3,896	$4,466	$4,360	$4,414	$4,429	$4,900

Note: Amounts are in 1985 U.S. dollars.

Source: Japan's Fisheries 1983, U.S. Embassy Report, Dec. 1984 and 1985 Marine Trade Statistics, Ministry of Agriculture, Forestry, and Fisheries, Government of Japan.

The United States has been the largest exporter of fish products to Japan, followed by South Korea, Taiwan, and India. In 1985, salmon accounted for about half of the U.S. fishery exports to Japan. Other major fishery products Japan imported from the United States included herring roe, salmon roe, and crab.

In the past, Japan's imports of U.S. fishery products have increased after Japan's catch of a species from U.S. waters has been reduced. After the passage of the Magnuson Act, U.S. fishermen quickly expanded their catch of herring and crab, and foreign fishing for those species was terminated. With a reduced supply of those species, Japan increased its imports of these

fishery products from the United States. In 1985 Japan imported about 34,000 metric tons of herring and about 10,000 metric tons of crab from the United States. Similarly, as U.S. fishermen have expanded their catch of sablefish, foreign fishing for that species has been reduced and Japan has increased its sablefish imports from the United States. To illustrate, in 1981 Japan's sablefish catch in U.S. waters was 9,322 metric tons and its sablefish imports from the United States were 340 metric tons. By 1985 Japan's sablefish catch in U.S. waters had declined to 286 metric tons and its sablefish imports from the United States had increased to 7,202 metric tons.

In fiscal year 1985 (April 1985 - March 1986), Japan's import quota for Alaska pollack and pollack products was 670,000 metric tons. This quota included joint venture pollack but excluded pollack roe, which was under another import quota, and smoked pollack, which was not under import restrictions. The quota was higher than the amounts Japan actually took in from Alaska pollack joint ventures and imports, which totaled about 540,000 metric tons. A NMFS official said imports have not been limited by the total amount of the quota but by who possesses a quota allocation. He explained that the quota is largely controlled by Japanese companies participating in joint ventures, and other Japanese companies have to acquire an import quota allocation before they can import fish products. According to this official, some U.S. fish processors believe that this has limited Japan's imports of fish products from the United States. In commenting on the results of our work, a Japanese government official pointed out that the United States and Japan have been negotiating to remove any impediments to Japanese imports of fish products from the United States.

TRENDS DO NOT SHOW THE EXTENT THAT ALASKA POLLACK PRICES RESPOND TO CHANGES IN SUPPLY

A comparison of changes in Japan's landed volume and the wholesale price of Alaska pollack did not indicate the extent that prices respond to volume changes. Table 1.8 shows the percentage of change from the previous year in the landed volume and wholesale price of Alaska pollack.

Table 1.8: Percentage of Change in Japan's Landed Volume and Wholesale Price of Alaska Pollack

Year	Percentage increase (decrease) from previous year	
	Landed volume	Price
1978	(36.0)	(13.0)
1979	(4.7)	10.4
1980	3.7	9.5
1981	5.5	(14.8)
1982	11.1	(1.4)
1983	8.5	(5.9)
1984	7.5	(7.8)
1985	(16.9)	20.3

Note: This table does not include Alaska pollack brought ashore already processed into surimi.

Source: Monthly Statistics of Agriculture, Forestry, and Fisheries, Government of Japan.

The changes show no consistent pattern. In 4 of the years, the landed volume increased and the wholesale prices declined. In 2 other years, the landed volume declined and the wholesale prices increased. During 1978, both the wholesale price and landed volume declined, while in 1980, both increased. The inconsistent pattern of landed volume and wholesale price changes indicates that factors other than landed volume significantly affect the price of Alaska pollack in Japan. Therefore, these trends do not indicate the extent that the Japanese price for Alaska pollack responds to volume changes.

SECTION 2

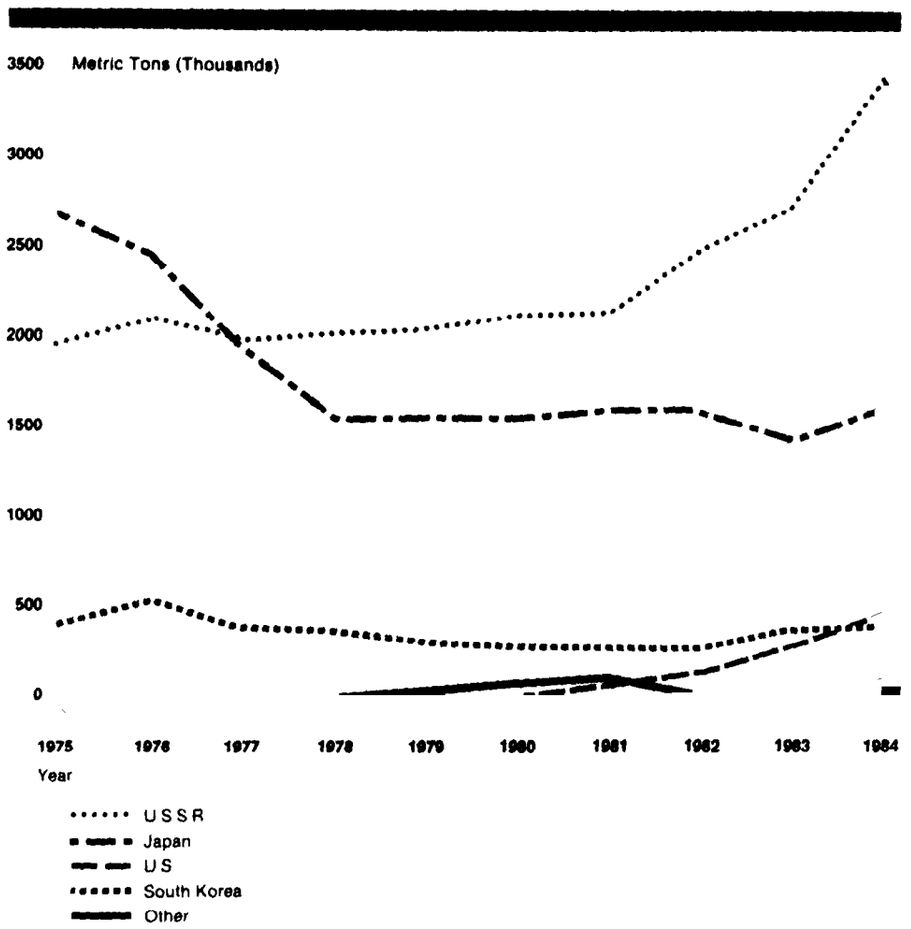
ARE ALTERNATIVE SUPPLIES OF FISH AND FISH PRODUCTS AVAILABLE TO JAPAN?

According to NMFS and Japanese government officials, Japan does not have alternative supplies of Alaska pollack to substitute for those obtained from U.S. waters. Japanese officials pointed out that surimi can be made from alternative fish species such as sardines and mackerel, which are in plentiful supply to the Japanese, but such species produce a surimi that has not been fully accepted by the Japanese consumer. According to Japanese officials, Japan could, however, substitute for Alaska pollack by directly consuming low-valued species such as sardines and mackerel.

Alternative supplies of Alaska pollack

The world harvest of Alaska pollack in 1984 was about 6 million metric tons. Although Alaska pollack is found throughout the North Pacific, stocks are centered primarily within waters of the Soviet Union and the United States. Over 95 percent of the world Alaska pollack catch is harvested by four countries--the Soviet Union, Japan, the United States, and South Korea. Figure 2.1 shows the Alaska pollack harvest for those four countries and others.

Figure 2.1: World Catch of Alaska Pollack by Country



Source The World Supply of Alaska Pollock, 1975-84, Office of International Fisheries, NMFS, NOAA, Department of Commerce, April 30, 1986

The United States is Japan's principal source of Alaska pollack. Since 1984 Japan's catch in U.S. and Soviet waters has declined, while its catch in Japanese and international waters increased slightly and its joint ventures with U.S. fishermen increased. In 1986 Japan also began joint ventures with North Korea and increased its imports. Table 2.1 gives NMFS' estimates of Japan's supply of Alaska pollack.

Table 2.1: Japan's Estimated Alaska Pollack Supply

	1984	1985	1986
	---(thousands of metric tons)---		
Harvests in			
United States	723	644	263
U.S.S.R.	250	225	50
Japan/International	648	643	650
Joint ventures with			
United States	340	431	525
U.S.S.R.	50	50	50
North Korea	0	0	50
Imports	60	60	100
Total supply	2,071	2,053	1,688

Source: NMFS, NOAA, Department of Commerce.

NMFS officials told us that Japan does not have access to large alternative supplies of Alaska pollack. To support this view, they provided a recent NMFS study of the world Alaska pollack supply.[1] This study points out that even though the Soviet Union has a large supply of Alaska pollack, most of that catch is either consumed domestically or processed into fish meal. The study states that because the Soviets want to increase domestic consumption of foodfish and expand the use of fish meal for agriculture, the Soviet Union might not want to market Alaska pollack abroad. The study concludes that Japanese harvesting levels will decline during the next few years and result in a greater dependency on joint ventures and imports to meet the Japanese domestic demand for Alaska pollack.

Similarly, Japanese government officials also told us that Japan would not have large alternative supplies of Alaska pollack. To obtain additional Alaska pollack, they said Japan would seek to increase its joint ventures with the United States, the Soviet Union, and North Korea. They added that the Japanese would have to obtain other fish species for producing surimi and possibly reduce their fish consumption.

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[1]The World Supply of Alaska Pollock, 1975-84, Office of International Fisheries, NMFS, NOAA, Department of Commerce, Apr. 30, 1986.

Alternative fish species for making surimi

About 90 percent of the surimi Japan makes is from Alaska pollack. In 1984 Japan used several other fish species to make surimi, but most of those species were only available in small quantities. Since 1984 Japan also has been making some surimi from sardines, which are in abundant supply, but the surimi has not been fully accepted by the Japanese consumer. Table 2.2 shows Japan's 1984 catch of the species it used primarily to make surimi.

Table 2.2: Japan's 1984 Catch of Species Used Primarily to Make Surimi

Species	Quantity (thousands of metric tons)	Percentage of total
Alaska pollack	1,621	89.8
Atka mackerel	66	3.7
Shark	35	1.9
Cutlass fish	34	1.9
Croaker	24	1.3
Lizard fish	14	0.8
Sharp-toothed eel	11	0.6
Total	1,805	100.0

Note: Excludes sardines, which are used primarily as feed for aquaculture, fishing bait, and fish meal (see fig. 2.3).

Source: Surimi, Southwest Region, NMFS, NOAA, Department of Commerce, Jan. 1986.

As the table shows, most of the surimi is made from Alaska pollack. Japan has carried out tests since 1970 to use various other fish species in making surimi. The species tested included those belonging to the white-fleshed, deep-sea cod family; dark-meat species, such as sardines and mackerel; and Antarctic krill. Test results have shown that white-fleshed species such as cod make good quality surimi but are in limited world supply and generally more expensive. Although the dark-meat species are in abundant supply, they produce a dark-colored, low-quality surimi. Antarctic krill has resulted in a poor-quality surimi.

Table 2.3 lists the species that Japanese officials told us could be used as possible substitutes for Alaska pollack in making surimi.

Table 2.3: Alternative Species for Making Surimi

Species	Fishing location
Blue whiting	New Zealand and Greenland
Hake	Argentina, Chile, and New Zealand
Hoki	New Zealand
Horse mackerel	New Zealand
Jack mackerel	Argentina and Chile
Mackerel	Chile and Northern European waters
Notosenia	Antarctic
Sardines	Japan

Source: Interviews with Japanese fishing industry officials (see app. I).

Under a joint Japanese government, university, and industry effort, pilot plants have been established that produce surimi from dark-meat fish species. While Japan is still working on improving the quality of surimi made from dark-meat fish species, Japanese officials told us that it has not been fully accepted by the Japanese consumer. A Japanese official told us that surimi made from sardines is used for fried surimi products where color is not an important factor. U.S. officials in Japan also told us that the dark color has been a problem, but that surimi made from sardines is being tested in the Japanese school lunch program and may have a great potential.

Alternative fish species for direct consumption

Instead of consuming surimi products, Japanese officials told us that the Japanese could eat fish species that are in abundant supply.[2] As pointed out earlier, the Japanese are consuming larger quantities of higher valued species, such as shrimp and tuna, and are importing increasing amounts of those species. However, high-valued fish such as tuna are too expensive to easily substitute for Alaska pollack. Figure 2.2 shows the 1983 Japanese catch by major species in terms of weight and value.

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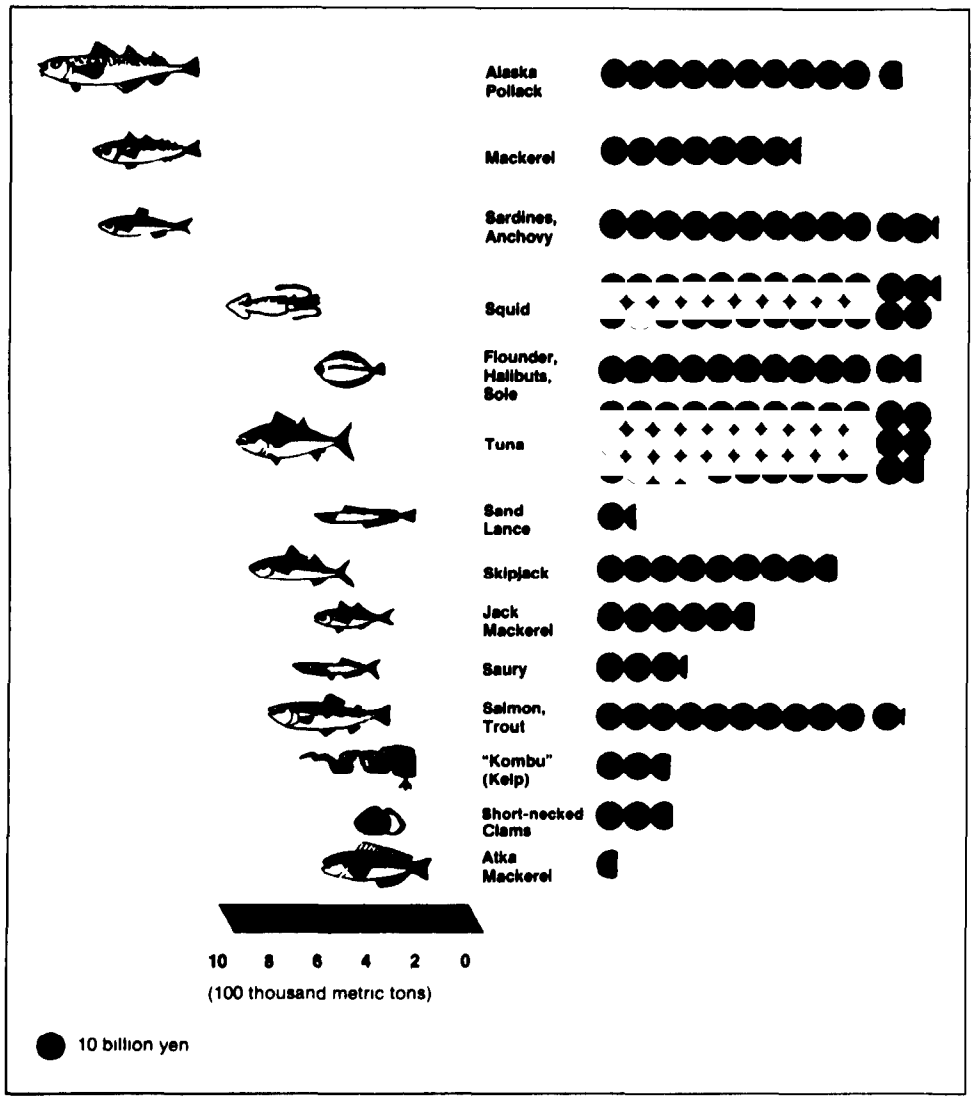
[2]This report focuses on alternative fish supplies and does not address other potential protein sources, such as meat, poultry, and dairy products.

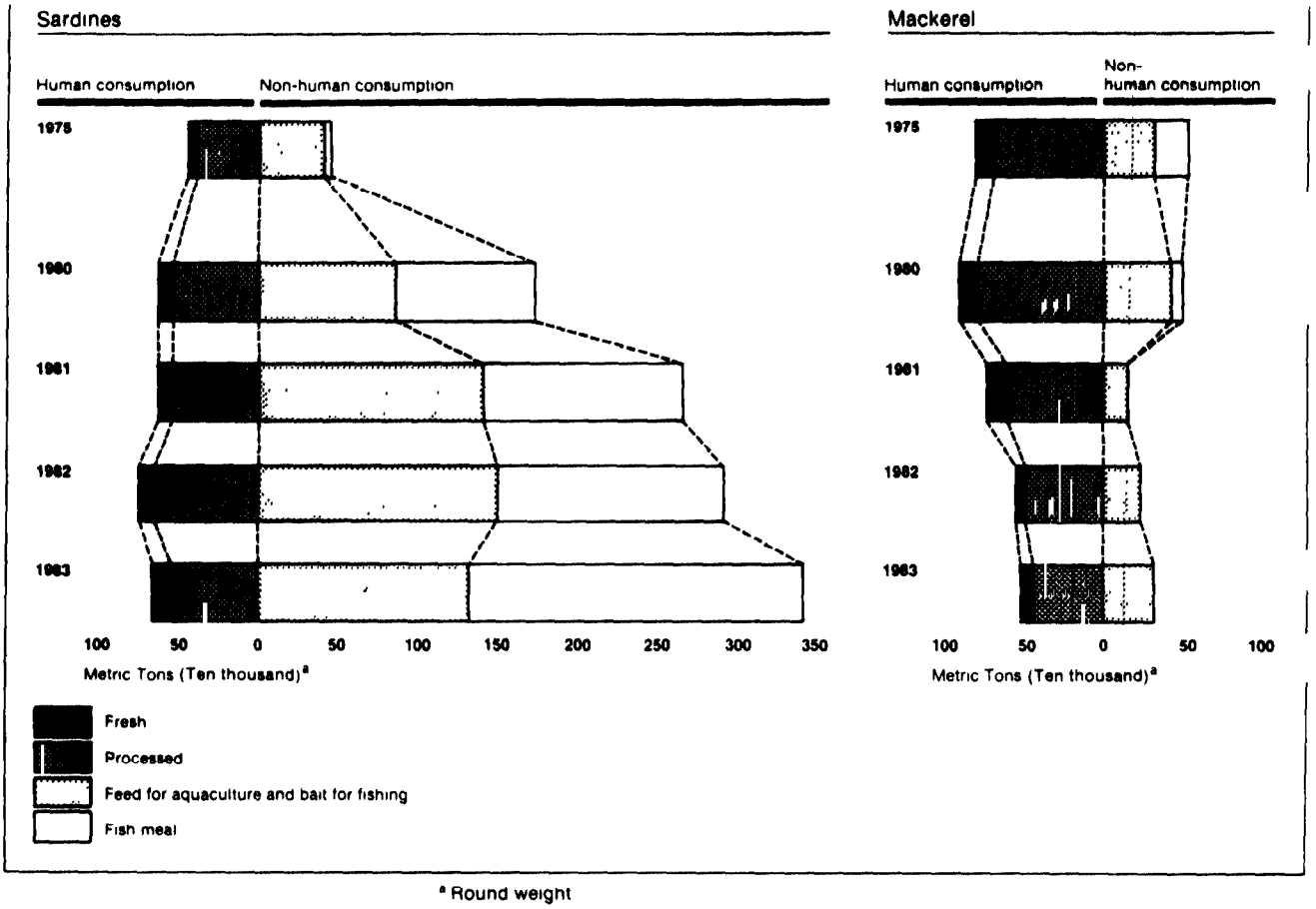
Figure 2.2: Weight and Value of Japanese Catch, 1983



Source Fisheries Statistics of Japan, 1983, the Ministry of Agriculture, Forestry, and Fisheries, Government of Japan

Figure 2.2 shows that Japan's catch of low-valued species, such as sardines and mackerel, is larger than its catch of higher valued species such as tuna and salmon. The Japanese use a large part of the sardine and mackerel catch for non-human consumption, as shown in figure 2.3.

Figure 2.3: Use of Sardines and Mackerel



a Round weight

Source Annual Report on Japan's Fisheries, Fiscal 1984 Summary, the Ministry of Agriculture, Forestry, and Fisheries Government of Japan

Japanese officials pointed out that the large supply of sardines and mackerel not currently consumed by humans provides a potential alternative to surimi made from Alaska pollack. Other low-valued species available in abundant supply also would be alternatives to Alaska pollack, but some species, such as hake, are located farther away from Japan and would require the Japanese fleet to travel a greater distance, thereby increasing transportation costs.

SECTION 3

WHAT PERCENTAGE ARE U.S. FISHING FEES OF THE WHOLESALE PRICE OF FISH IN JAPAN?

Although U.S. fishing fee rates per pound have nearly tripled over the past 5 years, factors such as the increased value of the yen and increased Japanese wholesale fish prices have mitigated the fee increase, and the fee has been a small part (4 to 7 percent) of the wholesale price.[1] Table 3.1 shows the total Magnuson Act costs, the foreign share of the total catch, the total poundage fees, and the fee rate for 1982 through 1986.

Table 3.1: Magnuson Act Costs and Poundage Fees

	1982	1983	1984	1985	1986
Costs (in millions)	$112.9	$142.6	$170.8	$170.0	$222.8
Foreign share of total catch[a]	30.7%	30.3%	26.1%	23.7%	22.3%
Poundage fees (in millions)	$ 33.4	$ 41.3	$ 42.9	$ 40.2	$ 49.5
Fee rate[b]	11.6%	14.8%	15.6%	25.9%	35.6%[c]

[a]Based on catch 2 years prior to fee year.

[b]Percentage of ex-vessel value of catch. From 1981 through 1984, NOAA assessed higher fee rates for fish species of high value to U.S. fishermen and lower rates for fish it encouraged foreigners to catch. Shown are the base U.S. fishing fee rates.

[c]Effective October 1, 1986, the Secretary of Commerce could assess a higher fee rate of 63.6 percent of ex-vessel value if a foreign nation (1) harvested U.S. fish species at an unacceptable level or (2) failed to take sufficient action to benefit the conservation and development of U.S. fisheries.

Source: NMFS, NOAA, Department of Commerce.

NOAA's 1987 poundage fee assessment rate is 47.61 percent of the ex-vessel value of the foreign catch. According to NOAA, Magnuson Act costs declined to about $203 million, but a sharp decrease in the foreign harvest caused the fee rate to increase.

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[1]Poundage fees are assessed according to the weight of the fish caught. The U.S. poundage fee also considers the ex-vessel value of each species. Ex-vessel value is the price fishermen receive for their catch before transporting and processing.

Because the Japanese make surimi from the Alaska pollack obtained from U.S. waters, we compared the U.S. fee applicable to the Alaska pollack in surimi with the Japanese wholesale price of surimi. For a more direct comparison, we also compared the fee with the Japanese wholesale price of Pacific cod. Pacific cod is one of three species that account for nearly all of Japan's catch in U.S. waters. In 1985 Alaska pollack accounted for about 79.7 percent of Japan's catch in U.S. waters, flounders accounted for 11.8 percent, and Pacific cod, 7.6 percent. Sufficient data on flounders were not available to enable us to make a comparison of the U.S. fee and the Japanese wholesale prices. Table 3.2 shows the results of our comparisons.

Table 3.2: U.S. Fees as a Percentage of the Japanese Wholesale Price of Surimi and Pacific Cod

	Surimi			Pacific cod		
Year	Feea	Price	Percent	Fee	Price	Percent
1982	$0.043	$0.61	7.1%	$0.020	$0.46	4.4%
1983	0.055	0.71	7.7%	0.026	0.47	5.6%
1984	0.053[b]	0.77	6.9%	0.030	0.64	4.7%
1985	0.060[c]	0.81	7.4%	0.033	0.56	6.0%
1986[d]	0.081	1.46	5.6%	0.046	0.81	5.8%

Note: Fees and prices are shown in U.S. dollars per pound.

[a]U.S. fee for Alaska pollack is used. Consistent with an agreement between the U.S. and Japanese delegations in the 1986 industry-to-industry meeting, we assumed that 22 percent of the live weight of Alaska pollack is used in making surimi. According to NMFS, ingredients other than Alaska pollack make up 8.6 percent of the weight of surimi. We therefore assumed further that Alaska pollack comprises 91.4 percent of the ingredients for surimi.

[b]The fee for Alaska pollack decreased because NOAA changed its method of determining ex-vessel value.

[c]The fee for Alaska pollack did not increase in the same proportion as the overall U.S. fee rate primarily because NOAA discontinued assessing a higher fee rate on certain species, including Alaska pollack, for conservation and management considerations.

[d]Based on data as of June 1986.

Source: Compiled by GAO from data provided by NMFS, NOAA, Department of Commerce.

The fees as a percentage of price for surimi were relatively stable from 1982 to 1985, but decreased as of June 1986. This

decrease was largely because increases in the value of the Japanese yen and the surimi price more than offset the increased U.S. fees. Since U.S. fees are paid in dollars, an increased value for the yen reduces the amount of yen per dollar of poundage fee the Japanese have to pay. The value of the yen increased 43 percent, from 240 yen per dollar in 1985 to 168 yen per dollar in June 1986. Similarly, the fee as a percentage of price would tend to decrease as prices increase. The Japanese wholesale price of surimi rose about 26 percent, from 429,000 yen per metric ton in 1985 to 541,000 yen per metric ton in June 1986.

The U.S. fee for Pacific cod as a percentage of price had a smaller decrease than for surimi in 1986. Although the yen value increase was the same, the Japanese wholesale price of cod increased a smaller amount. The cod price in Japan went from 294,000 yen per metric ton in 1985 to 298,000 yen per metric ton in 1986, an increase of about 1 percent.

Compared with the U.S. fee, other factors make up a larger part of the cost of producing surimi. One study, which estimated the Japanese cost of producing surimi aboard ships,[2] indicated that labor accounted for about 37 percent of the costs and transportation (including fuel) about 19 percent. Therefore, changes in the costs of those factors, such as the price of fuel oil, might have a greater effect on the profitability of surimi production than the U.S. fees.

[2] A Strategy for the Americanization of the Groundfish Fisheries of the Northeast Pacific, Volume 2, Technical Report, Natural Resources Consultants, Dec. 1985.

SECTION 4

ON THE BASIS OF ISSUES 1 THROUGH 3, WHAT ARE JAPAN'S PROBABLE ACTIONS WITH RESPECT TO (1) REDUCING ITS FISHING IN U.S. WATERS, (2) INCREASING ITS JOINT VENTURES WITH U.S. FISHERMEN, AND (3) INCREASING ITS PURCHASE OF U.S.-PROCESSED FISH PRODUCTS?

Japan's fishing for Alaska pollack in U.S. waters has already been reduced substantially, its joint ventures may have peaked, and past trends suggest that it might increase imports of U.S.-processed fish products.

REDUCED ALLOCATIONS HAVE REDUCED JAPAN'S FISHING FOR ALASKA POLLACK

The U.S. fee has not caused Japan to reduce its fishing for Alaska pollack; rather, Japan's catch of Alaska pollack in U.S. waters has declined largely because U.S. fishermen have increased their harvests, thereby reducing the amount of fish available for foreign fishermen (see tables 1.4 and 1.5). Even though U.S. fishing fees have increased, Japan has continued to seek its total allocation of Alaska pollack and desires a larger allocation. Changes in the total amount of a fish species available (the total allowable catch) in U.S. waters also affect the size of foreign allocations. Thus, the decline in Japan's Alaska pollack allocation is not due solely to the increase in the U.S. catch, but also partly to a decrease in the total allowable catch from 1,716,600 metric tons in 1984 to 1,396,000 metric tons in 1987.

The supply and price trends do not indicate the extent that price responds to changes in supply because the extent that other factors affect demand, such as income, was not separated or accounted for. The increasing value of the Japanese yen more than offset the U.S. fee increases. In addition, the Japanese wholesale fish price has increased. As a result, the fees are a small part of the wholesale price. Consequently, changes in the fees may have a smaller effect on the profitability of surimi production and the Japanese fishing level than changes in the costs of factors that make up a larger part of the price, such as labor and transportation. This further suggests that it is not the U.S. fees that have caused Japan to reduce its fishing in U.S. waters, but that reduced U.S. fishing allocations have decreased foreign fishing. According to NMFS officials, there will be little foreign

fishing of Alaska pollack in U.S. waters starting in 1987. As Japan's access to Alaska pollack is decreased, its willingness to pay for fishing rights may increase.[1]

JOINT VENTURES MAY HAVE PEAKED

Japan began joint ventures with U.S. fishermen in 1981. By 1986, Japan's Alaska pollack supply through joint ventures exceeded its direct catch in U.S. waters. NOAA reserved 881,103 metric tons of Alaska pollack for joint ventures in 1987, down from the 899,265 metric tons U.S. fishermen provided foreign processors through joint ventures in 1986. As indicated by table 1.4, this reduction resulted from an increase in U.S. processing capacity and a decrease in the total allowable catch of Alaska pollack. Assuming that U.S. fishermen catch nearly all the Alaska pollack, future levels of joint ventures will be limited by the amount of fish available after U.S. fish processors claim their share of the U.S.-harvested fish. As the United States expands its fish processing capacity, NMFS officials point out that U.S. processors will have priority access to the fish, and joint ventures will decrease.

JAPANESE IMPORTS OF U.S.-PROCESSED FISH PRODUCTS MAY INCREASE

In the past, when its fishing in U.S. waters for a species such as sablefish ceased, Japan has increased its imports of that species from the United States. The Japanese have invested in shore-based surimi processing plants in Alaska and in 1986 imported U.S.-processed surimi for the first time. If continued, these trends indicate that Japan would increase imports of U.S.-processed fish products as the U.S. groundfish processing capability increases and less Alaska pollack becomes available to Japanese processors. Although U.S. and Japanese government officials have been negotiating to remove any impediments, the Japanese import quota discussed in section 1 could be an obstacle to increased Japanese imports of U.S. fish products.

An alternative source of supply is another possible obstacle to Japan's increasing its purchase of U.S.-processed fish products. Under current circumstances, Japan cannot purchase alternative supplies of Alaska pollack. However, the large Soviet supply

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[1]Two studies published in 1983 concluded that the Japanese would be willing to pay substantially more than the United States was charging for access to Alaska pollack: "Estimation of Foreign Willingness to Pay United States Fishery Resources: Japanese Demand for Alaska Pollack", Stephen R. Crutchfield, Land Economics, Feb. 1983; and "Fishing Allocations and Optimal Fees: A Single- and Multilevel Programing Analysis", Eric Meuriot and John M. Gates, American Journal of Agricultural Economics, Vol. 65, No. 4, Nov. 1983.

raises the possibility that the Soviets might allow Japan to purchase additional supplies of Alaska pollack if the Soviet Union changes its policy and puts greater emphasis on fish exports. To substitute for the Alaska pollack it obtains from the United States, Japan has an adequate supply of sardines, which it can process into surimi. However, the surimi made from sardines is still being tested and has not been fully accepted by the Japanese consumer. An abundant supply exists for the Japanese to substitute by directly consuming sardines, but the Japanese consumption trend has been toward higher valued fish. High-valued fish such as tuna are too expensive to represent an easily suitable substitute for Alaska pollack.

SECTION 5

WHAT ARE THE PRINCIPAL TYPES OF FISHING FEE SYSTEMS USED IN OTHER COUNTRIES?

Three basic types of fee systems are in use around the world: lump sum fees for a fixed period of time, fishing effort fees based on fishing vessel capacity, and royalty fees based on the actual catch.

LUMP SUM FEE

Under a lump sum fee system, the fishing nation is required to pay a basic fee in advance to cover its fishing activities for a fixed time period, typically one year. According to a Food and Agriculture Organization of the United Nations (FAO) study on the access to fish resources,[1] the agreements between coastal and fishing nations that identify how the fees are determined show that the fee is based on a percentage (about 5 percent) of the value of the estimated expected catch as it is brought ashore. Since payment is made in advance, the coastal nation does not have to monitor the actual catch to determine the proper fee.

Historically, lump sum fees have been used for tuna fishing by nations in the South Pacific. For example, Japan paid Australia a lump sum of $1,551,724 (in U.S. dollars) to allow up to 290 tuna longliner vessels to fish in Australian waters from November 1985 through November 1986. Similarly, Kiribati (formally the Gilbert Islands) charged a Soviet company (Sobryflot) a lump sum of $1,578,947 (U.S.) to fish for tuna in its waters for one year beginning in August 1985. FAO fishery and legal officials stated that lump sum fees are ideal for this region because tuna migrate rapidly through fishing zones, requiring fishing vessels to continuously shift locations in and out of national fishing zones. To verify the actual catch under such circumstances, the coastal nation would have to conduct extensive monitoring operations. Countries currently using a lump sum fee system for some or all of its fish include Angola, Australia, Kiribati, and Tuvalu.

According to FAO officials, a lump sum system benefits coastal nations with minimal administrative and enforcement costs because payment is made in advance and monitoring of catch is not required to determine the fee. A disadvantage FAO officials cited is that fishing nations tend to fish a great deal to compensate for fees paid, which could adversely affect fisheries' conservation and management goals. A NMFS official pointed out that a lump sum system would not provide the United States with the accurate catch

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[1] Report of the Expert Consultation on the Conditions of Access to the Fish Resources of the Exclusive Economic Zones, FAO, Rome, 1983.

information needed to manage and conserve its fish stocks. NMFS Fisheries Affairs officials added that countries that use a lump sum fee system are not as conscious of the status of the stocks. A NMFS enforcement official said that conservation and management goals would require the U.S. to keep track of the quantity and species of fish being harvested, regardless of the fee system used. Since fees are paid without knowing how much fish will actually be harvested, FAO officials said that this fee system also introduces an element of risk into the fishing agreements. They explained that fishing nations have no guarantee that a particular amount of fish will be caught, and coastal nations risk underestimating the amount and/or value of the catch.

FISHING EFFORT FEE

A fishing effort fee system is usually based on some indication of fishing vessel capacity, such as the gross or net registered tonnage or the length and type of fishing vessel. Therefore, such a system does not require a coastal nation to monitor the actual catch to determine the fee. An example of a fishing effort fee is an agreement between Guinea and the European Economic Community (EEC), effective January 1983 through December 1985. Under the agreement, the EEC paid $87 (U.S.) per gross registered ton (GRT) for trawlers and shrimp boats and $17.40 per GRT for tuna boats. An FAO official told us that developing countries often use this type of fee system because they generally lack the assets, such as trained observer personnel or surveillance equipment, required to monitor the catch of fishing nations. According to a senior FAO official, such coastal nations have a tendency to charge fees on a per-vessel, per-trip basis because of a reluctance of foreign fishermen to pay a large fee up front as required by lump sum fee systems. An FAO fishery official responsible for monitoring access agreements said nations that use the fishing effort fee system tend to negotiate agreements that also call for fishing nations to make payments-in-kind and/or land and process the catch locally. Nations using a fishing effort fee system include Bangladesh, Cameroon, Morocco, and the Philippines.

FAO officials said that fishing effort fees are advantageous to the coastal nation because they are easy to administer and enforce since payment is based on easily discernible characteristics of the fishing vessel and not on the actual catch. FAO's study on access to fish resources also pointed out that the fishing effort fee system provides fishermen with the flexibility to adjust fishing patterns, thereby reducing the risks associated with up-front payments. An FAO official pointed out that coastal nations can easily verify that only authorized vessels are fishing by periodically flying over or sailing through fishing grounds. On the other hand, FAO's study on access to fish resources pointed that it takes more effort to advise enforcement authorities of vessels permitted to fish when the list of authorized vessels changes from week to week, as in the per-trip basis, than when

there is a set group of vessels licensed for the whole year. NMFS officials and U.S. fishing industry representatives said that a fishing effort fee system does not provide the information needed to manage and conserve the fisheries resources and feared that some nations may overfish the more desirable, high-valued species.

ROYALTY FEE

Royalty fee systems, such as the one used by the United States, are based on the actual catch and usually include some provision for monitoring the catch. The United States considers the ex-vessel value of the fish caught, while other nations base their fees on the landed value of the catch, which is the market price less the cost of processing the fish. Royalty fees are often used in conjunction with permit fees and financial or technical contributions to the coastal nation's fishing industry. For example, the United States also charges permit fees for each fishing vessel entering U.S. waters and has established the "fish and chips" policy for developing the U.S. fishing industry. Other countries that use a royalty fee system include Senegal, Indonesia, and the Seychelles.

According to FAO and NMFS officials, royalty fees are best suited for coastal nations that manage and conserve their fisheries because biological data on the fisheries stocks are provided as part of the fee system. Similarly, the FAO study on the access to fish resources states that a royalty fee is the best system to use where specific fish species are subject to a quota system. In addition, FAO officials asserted that the coastal nation can charge higher fees because the fishing nation bears little risk in that it only pays fees on the fish actually caught. On the other hand, these officials pointed out that the coastal nation must closely monitor and verify the catch to ensure that the catch is accurately reported to provide an accurate basis for charging the fee. Although close monitoring increases the cost of implementation, FAO and NMFS officials stated that such information is needed to manage and conserve fisheries resources regardless of the fee system used.

SECTION 6

WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF A FLAT POUNDAGE FEE SYSTEM?

NOAA considered a flat poundage fee system as an alternative to the current fee system shortly after the passage of the Magnuson Act in 1976. The flat fee system would have been similar to the current royalty fee system in that both systems seek to recover the foreign share of Magnuson Act costs based on the total tonnage of fish caught by foreign vessels. Unlike current fees, which consider the ex-vessel value of the species caught, a flat fee would be calculated by dividing the foreign share of total costs by the weight of the foreign catch without regard to the value of the fish. A flat, or identical, fee per ton, regardless of the species caught, would then be charged to foreign fishermen. If a flat fee had been applied to the estimated 1986 foreign catch of 1,012,729 metric tons, to recover the $49.5 million of Magnuson Act costs (see table 3.1) the flat fee would have been $48.88 per metric ton for each species ($49.5 million divided by 1,012,729 metric tons). Table 6.1 shows the effect of such a fee.

Table 6.1: Estimated Effect of a Flat Fee on 1986 Poundage Fees by Species

Species	Actual 1986 poundage fees	Increase <decrease>
	(per metric ton)	
Coral	$ 40	$ 8.88
Alaska pollack	43	5.88
Pacific whiting	43	5.88
Pacific sharks	44	4.88
River herring	50	<1.12>
Atlantic mackerel	50	<1.12>
Alaska flatfish	56	<7.12>
Atka mackerel	66	<17.12>
Pacific squid	80	<31.12>
Snails	91	<42.12>
Other Atlantic finfish	95	<46.12>
Pacific cod	102	<53.12>
Red hake	131	<82.12>
Bering Sea & Aleutian Islands sablefish	137	<88.12>
Illex squid	139	<90.12>
Silver hake	140	<91.12>
Seamount groundfish	141	<92.12>
Atlantic sharks	151	<102.12>
Jack mackerel	182	<133.12>
Pacific ocean perch	196	<147.12>
Pacific sablefish	205	<156.12>
Other rockfish	210	<161.12>
Flounders	216	<167.12>
Butterfish	220	<171.12>
Logigo squid	226	<177.12>
Gulf of Alaska sablefish	260	<211.12>
Striped marlin	660	<611.12>
Pacific billfish	707	<658.12>
Wahoo	786	<737.12>
Pacific swordfish	832	<783.12>
Dolphin fish	$1,965	$<1,916.12>

Note: If a flat fee had been assessed to each metric ton of the estimated foreign catch in U.S. waters in 1986, the flat fee would have been $48.88 per metric ton.

Source: Compiled by GAO from information provided by NMFS, NOAA, Department of Commerce.

Table 6.1 shows that the fee for low-valued species, such as Alaska pollack and Pacific whiting, would rise by $5.88 per metric ton while the fee for high-valued species, such as dolphin fish and

Pacific swordfish, would be reduced by $1,916.12 and $783.12 per metric ton, respectively.

NMFS officials, including the permits and fees official responsible for overseeing the fees, told us that a flat fee system would be easier to administer because it does not require the ex-vessel value to be determined for each species that foreigners harvest. However, the permits and fees official pointed out that the entire fee determination process, including the determination of ex-vessel values, takes less than one-half of a staff year.

Magnuson Act provisions and the United Nations Convention on the Law of the Sea call for the optimal use of living resources in the national fishery conservation zones.[1] According to NMFS, these provisions imply that fee schedules should be acceptable to foreign vessel owners from the standpoint of profitability of their fishing operations. In this regard, Japanese government officials told us that the higher fees imposed on low-valued species by a flat fee system could make fishing unprofitable for those harvesting low-valued fish because the fee might be higher than the value of the fish. Officials from FAO, the Korean government, and NMFS made similar comments and stated that a fee system should consider the value of the fish to the fishing nation. Japanese government officials told us that they would consider paying a flat fee if the United States established such a system, but would in turn charge the Japanese companies according to the value of the species much like the present U.S. system.

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[1]The U.N. General Assembly convened the Third United Nations Convention of the Law of the Sea in December 1973. Participating countries met at various intervals to establish a system of international laws for the oceans concerning fishing, shipping, ocean research, environmental protection, and deep sea mining. On December 10, 1982, in Montego Bay, Jamaica, the new U.N. convention on the Law of the Sea was signed by 119 countries.

SECTION 7

WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF THE AUCTION SYSTEM PROPOSED BY NOAA AND WHAT IS ITS STATUS?

From 1982 through 1985, NOAA considered whether an auction fee system should be adopted in lieu of the present cost recovery system. The objective of the NOAA-proposed auction system was to maximize revenues to the United States from foreign fishing fees.

The principal features of the NOAA-proposed auction system follow:

-- An individual or company would be required to be from a country that has a Governing International Fisheries Agreement with the United States to be eligible to bid.

-- A minimum bid would be established considering factors such as the size of the unit blocks of fish to be auctioned, recent fish prices in U.S. and foreign markets, previous foreign fishing fees, and fishery management objectives.

-- Auction units would be established on a fishery-by-fishery basis and announced in advance. Auctions would not necessarily be used in all fisheries.

-- Participants would submit sealed bids and 20 percent of the bid amount. Participants would be notified in the Federal Register of the terms and conditions of the auction.

-- NMFS would make allocations to the highest bidder. Bid openings would be public with all bids posted and the apparent high bidder announced.

-- Successful bidders could transfer allocations between companies within a country or to other countries under the condition that NOAA be notified in writing.

-- Payment in full would be required before fishing started. Refunds would be made only where U.S. action (such as a closure of a fishery) precludes the successful bidder from catching the fish offered.

A NMFS fisheries economist who was involved in the design of the proposed system stated that an auction system is the best way to determine the fair market value of the fish. He said that collecting fair market value would result in increased revenues because he believed the United States was undervaluing its fishery resources. However, FAO and other NMFS officials cautioned that no

guarantee exists that fair market value will be collected. In this regard, the FAO study on access to fish resources states that where the number of bidding agents is small or the market structure facilitates collusion, the bid price may be far less than the potential value. NMFS and FAO officials and U.S. industry representatives told us that because Japan is the dominant foreign fishing nation in U.S. waters, it could dominate the market and eventually eliminate the competition. A NMFS permits and fees official explained that it would be difficult for a fishing company to lose its allocation and then reenter the fishing zone in a subsequent year because most companies cannot afford to have labor and equipment lying idle; instead the company would either search for alternative fishing grounds or go out of business.

State Department and NMFS officials and industry representatives identified the loss of the fish and chips policy as another disadvantage of the auction system. Since the right to fish would go to the highest bidder, these officials said that the U.S. would lose an important tool that has helped to develop the U.S. fishing industry. State Department officials added that foreign policy considerations may outweigh economic considerations. Foreign policy considerations identified by these officials include the termination of Soviet fishing in U.S. waters in 1980 to protest the invasion of Afghanistan and more recently, a 1986 U.S. allocation of pollack to the Chinese in the hope of lowering trade barriers with China.

A NMFS official said that ownership of the fishing rights may be difficult to determine because of the provision that allowed countries or companies to transfer or sell their allocations. Tracking the allocations associated with those transfers would further increase the paperwork involved. This official was also concerned about the potential pressure to increase the TALFF in an effort to increase revenues.

During 1985 NOAA officials were considering various provisions intended to resolve concerns over the proposed system. A NMFS economist pointed out that the provision to permit the transfer of fishing rights among companies or countries was intended to increase competition by providing winning bidders with added flexibility. For example, a company or nation could win a bid for fishing rights in excess of its demand and sell the excess to another company or nation. The NMFS economists also considered providing for a minimum bid price to recover Magnuson Act costs. One of the NMFS economists said that they also considered making winning bids contingent on fish and chips considerations. He told us that they abandoned this idea because their objective in proposing the system was to maximize revenues to the United States, and the foreigners would bid less if additional costs were imposed on them by fish and chips considerations.

According to NOAA, its proposed auction system would have deviated from the Magnuson Act's requirement to recover costs. To provide greater flexibility in setting fees, NOAA proposed that the act be amended. With the approval of the Office of Management and Budget, in May 1985 Commerce submitted a draft bill to amend the act, but the Congress took no action on it. In the fall of 1985, NOAA decided not to pursue an auction system primarily because decreasing foreign fishing allocations made the development and implementation of an alternative fee system unnecessary.

SECTION 8

OBJECTIVES, SCOPE, AND METHODOLOGY

By letter dated April 8, 1985, the Chairman and Ranking Minority Member, Subcommittee on Fisheries and Wildlife Conservation and the Environment, House Committee on Merchant Marine and Fisheries, requested us to examine and provide information on U.S. fishing fees charged to foreign fishermen. The requesters were concerned that U.S. fishing fee increases may cause foreigners to reduce their fishing in U.S. waters, thereby reducing revenues from fees and foreign participation in joint ventures with U.S. fishermen. We agreed with the requesters' offices to address the following issues:

1. What are the Japanese consumption and supply trends for fish species from U.S. waters and do the trends indicate the extent to which Japan's Alaska pollack prices respond to supply changes?

2. Are alternative supplies of fish and fish products available to Japan?

3. What percentage are U.S. fishing fees of the wholesale price of fish in Japan?

4. On the basis of issues 1 through 3, what are Japan's probable actions with respect to (1) reducing its fishing in U.S. waters, (2) increasing its joint ventures with U.S. fishermen, and (3) increasing its purchases of U.S.-processed fish products?

5. What are the principal types of fishing fee systems used in other countries?

6. What are the advantages and disadvantages of a flat poundage fee system?

7. What are the advantages and disadvantages of the auction system proposed by NOAA and what is its status?

We conducted our work primarily at NMFS headquarters in Washington, D.C. We also visited State Department and U.S. Coast Guard offices in Washington, D.C., and several American, Japanese, and South Korean fishing industry associations at various locations in the United States, Japan, and Korea. Additionally, we visited the United Nation's FAO office in Rome. At each of these locations, we interviewed officials familiar with foreign fishing issues and obtained and examined pertinent documents. A complete listing of the locations we visited is included as appendix I.

From NMFS files we obtained worldwide statistics on fish caught, by country; the total allowable level of foreign fishing, the foreign catch, and fees for fishing in U.S. waters; the extent of joint fishing ventures between the U.S. and foreigners; and U.S. fish imports and exports. We also obtained from NMFS copies of the Ministry of Agriculture, Forestry, and Fisheries, Government of Japan's publication, Monthly Statistics of Agriculture Forestry and Fisheries for 981 through 1985. Using the fish production, consumption, and price data, we analyzed the Japanese demand for Alaska pollack, which is the major fish species caught by Japan in the U.S. FCZ. Using the data on U.S. foreign fishing fees and the price of fish in Japan, we computed the ratio of those fees to Japanese fish prices. We also examined statistics on the worldwide fish harvests to identify possible alternative supplies of fish. In addition to our statistical analyses of these issues, we examined existing studies and interviewed fishing industry representatives and government officials in Japan, Korea, and the United States.

To examine alternative fee systems, we obtained information on such systems from FAO and NMFS. FAO provided us with descriptions of the types of fee systems used by other countries. NMFS provided descriptions of previously proposed flat fee and auction systems. To obtain insights on the advantages and disadvantages of such systems, we discussed them with FAO officials and fishing industry representatives and government officials in Japan, South Korea, and the United States.

We discussed the results of our work with NOAA and Japanese embassy officials and incorporated their views where appropriate. As requested by the Subcommittee office, we did not obtain official agency comments on a draft of this report. We performed our review from August 1985 to August 1986.

ORGANIZATIONS GAO VISITED

U.S. GOVERNMENT

National Marine Fisheries Service Headquarters, Washington, D.C.
National Marine Fisheries Service, Northeast Region, Gloucester, Massachusetts
National Marine Fisheries Service, Northwest Region, Seattle, Washington
U.S. Coast Guard, Washington, D.C.
U.S. Department of Agriculture, Washington, D.C.
U.S. Department of State, Washington, D.C.
U.S. Embassy, Rome, Italy
U.S. Embassy, Tokyo, Japan

OTHER GOVERNMENT ORGANIZATIONS

Embassy of Japan, Washington, D.C.
Fisheries Agency, Government of Japan, Tokyo, Japan
National Fisheries Administration, Government of Korea, Seoul, Korea
United Nations Food and Agriculture Organization, Rome, Italy

INDUSTRY AND TRADE ORGANIZATIONS

Alaska Fisheries Development Foundation, Anchorage, Alaska
Dongwon Industries Company, Ltd., Seoul, Korea
Hoko Fishing Company, Ltd., Tokyo, Japan
Japan Deep Sea Trawlers Association, Tokyo, Japan
Japan Fisheries Association, Tokyo, Japan, and Washington, D.C.
Korea Deep Sea Fisheries Association, Seoul, Korea
Kyokuyo Company, Ltd., Tokyo, Japan
National Federation of Medium Trawlers, Tokyo, Japan
National Fisheries Institute, Washington, D.C.
Nichiro Gyogyo Kaisha, Ltd., Tokyo, Japan
Nippon Suisan Kaisha, Ltd., Tokyo, Japan
North Pacific Longline Association, Tokyo, Japan
North Pacific Fishery Management Council, Anchorage, Alaska
Northern Deep Sea Fisheries, Inc., Seattle, Washington
Sajo Industrial Company, Ltd., Seoul, Korea
Taiyo Fishery Company, Ltd., Tokyo, Japan
Unisea, Seattle, Washington

APPENDIX II

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