

## Zairians Fish Lake Tanganyika From Kalemie

The city of Kalemie, formerly Albertville, is the principal commercial and industrial center in the northern part of Shaba Province (formerly Katanga), Zaire. Kalemie is the largest Zairian port on Lake Tanganyika and the terminal of a railroad, which is probably the community's single most important employer. The fishing industry in Kalemie, once exclusively in the hands of Greeks, is now largely controlled by Zairians, although Greek management influences have recently been increasing. The fishing boats are run largely by Greeks. The various commercial establishments (which were also formerly in the hands of the Greeks) now seem to be largely controlled by Arabs. Arabs were allowed to remain in business after other foreign companies were turned over to Zairians, because of the petroleum shipments of Middle Eastern countries.

In 1956, the city of 25,000 had a European population of 967. At present, there are about 80,000 people in Kalemie of whom no more than 150 come from Europe. Although an occasional shop appears abandoned and some others are short on supplies, particularly drugs and hardware, most are well stocked. There is electricity, running water, a clean hotel, a movie theater, and a few restaurants. The town presents a fairly prosperous air, especially in recent weeks when an expected visit by President Mobutu (he never came) brought forth a fresh coat of whitewash on many buildings.

### HISTORICAL BACKGROUND

Commercial fishing, as it is presently practiced, dates back to the middle 1950's when the first Greek fishermen arrived from Bujumbura in Burundi and found fishing

conditions good. By 1972, there were 22 locally constructed steel fishing boats from 35 to 50 feet long, owned and operated almost solely by Greeks, mostly from the islands of Rhodes and Cyprus. In 1973-74, the industry was Zairianized along with other industries. Zairians from Kinshasa and Kalemie obtained most of the boats. One Greek-American was able to maintain ownership of his boat because he was an American citizen. He remained the only foreign fishing boat owner. Most Greeks, which had also owned the majority of stores in Kalemie, departed during 1975. By 1976, there remained no more than 20-25 Greek residents in Kalemie.

Some Greeks fought to reacquire their fishing assets with success. One older Greek Cypriot argued that his homeland was now occupied by the Turks and that he had no place to go after his Zairian assets were taken from him. His fishing boat was returned to him, but the return of his small retail store was blocked by a local official. Another Greek had papers prepared which showed how much his assets had been run down by the new Zairian owner in a short period of time. At present, only four Greeks own fishing boats, but they all have Zairian partners.

### SPECIES, GROUNDS, AND SEASONS

The Kalemie fishery is primarily directed at a herring species called dagaa by local fishermen. The fish may be found near the surface only at night. During the day they remain at a depth of more than 120 meters. These daily vertical migrations are conditioned by the movements of the plankton on which they feed. Plankton rise during the night, but move into the dark depths of the lake as soon as sunlight strikes the water. All dagaa fishing is done on moonless nights, when the schools feed not more than 10 meters below the surface and can be easily scooped up. Fishing is best from August to May, particularly during the rainy season, when bigger fish can be found in shallower waters. During June and July, the prevailing winds create surface conditions which are too rough for the boats.



Figure 1.—Map of Lake Tanganyika and surrounding countries.

## VESSELS AND METHODS

The dagaa fishery is conducted by motherships which travel 2-4 hours from shore every evening, pulling behind them a string of four or five smaller craft. Out of 22 boats, only about 16-17 operate regularly. All but one of these smaller boats are equipped with double Coleman-type lanterns extending over the water on the back side. On the fishing grounds, these smaller boats are anchored for a few hours with their lights shining to attract the fish. The two motherships then surround the smaller lighted boats, one at a time, with a net. After the net is pursed, each small lighted boat leaves the circle, and the whole net is pulled in. The operation around each of the lighted boats takes about an hour.

## MARKETING

Pulling its string of smaller craft and loaded with the nightly catch, the motherships attempt to reach the river channel, where they are docked, as near to daybreak as possible. Fish prices are best for the boats which reach the port first before the size of the total night's catch is known. Each boat owner deals with the same middleman every day. The middleman, always a Zairian, buys 20-kg boxloads of fresh unchilled fish at prices currently starting at about 7 or 8 Zaires (US\$8.05 to \$9.20)<sup>1</sup> per box in the earliest hours of the morning. The middleman sells the fish to local stall owners for whatever the market will bear. Almost all of the fish is sold locally because of inadequate refrigeration and transportation facilities. The national food chain (SGA), sometimes purchases fish for delivery to the capital in Kinshasa. The daily catch can vary from 20 boxes to 250 boxes per boat with about 50 being the average during June and July.

## CREW

Each ship has a captain and about 20-25 crew members. The captain earns about 200 Zaires (US\$230) per month, the crew gets 1 Zaire (US\$1.15) per working day. In addition, each crew member seems to have his own basket or other means to stash away a few fish for his family's consumption or private sale. About five boxes are generally

<sup>1</sup>The conversion rate was calculated at the official rate of 1 Zaire = US\$1.15, 30 September 1976. Zaires can be bought for much less on the free market.

"lost" out of a catch of 50 boxes. The owners are stricter when the catch is small, but always try to keep stealing limited because the crew members will not show up for several days of work if they made a good profit from pilfered fish on any one day. Stealing is tolerated because it supplements wages and firing crew members is difficult. The Zairian crews may not like the boat owners, particularly the Greeks, but they respect them for providing a steady livelihood. Crew members of at least one boat joined in petitioning the local officials to return a boat from its present Zairian "acquireur" to its former Greek owner.

## PROFITS

The Greeks remain active in the fishing business because of the high profits. The profits are less now, but still good, although there is some talk of getting out of the fishing industry. The price of fish is about four times what it was before Zairianization, but costs are up even higher. One Greek said he did not like to undertake an investment unless there is a good chance of a 100 percent profit in 1 year. In addition to wages, the principal expenses are for petroleum, spare parts, and payments to officials. Each evening's fishing consumes one barrel of petroleum. While the petroleum distributor, PetroZaire, is supposed to make available sufficient stocks for local industries, the records are often doctored and the petroleum only available on the black market. Payments to various intermediaries double the cost of petroleum. Spare parts are not locally available, nor is it easy to obtain a foreign exchange allocation for purchases abroad.

The Greek fishing boat operators are quick to bemoan the total situation, often talking of getting out of the business and out of the country. All live rather simple lives in Kalemie, but most are able to support families abroad and take long vacations out of the country. For most, the profits seem to remain adequate. The older ones stay because it is their whole life, the younger ones because they see nothing else more profitable on the horizon. The Zairian workers know the Greeks will provide steady work which was not the case when their own countrymen ran the fishing industry. The military and political figures appreciate the financial rewards the Greeks bring them. The relationship is symbiotic and mutually

beneficial to the individuals, but more parasitical than beneficial to the development of a healthy economy. (Source: U.S. Consulate, Lubumbashi.)

Second in size only to Lake Victoria to the northeast, Lake Tanganyika is one of Zaire and Tanzania's major fishing grounds. Fishing depends almost entirely on two small fresh-water clupeids, known locally as dagaa. Many small fishing communities are located along the lakeshore where land is available for rice and other subsistence crops. Such areas exist mainly where rivers flow into the lake.

Lake Tanganyika contains over 200 known species, many peculiar to it. The principal commercial species taken are listed in Table 1.

Table 1.—Fish species found in Lake Tanganyika.

Family and species	English	Swahili
Clupeidae (herrings)		
<i>Stolothrissa tanganyicae</i>	Sardines or whitebait	Dagaa
<i>Limnothrissa miodon</i>	Whitebait	Dagaa
Cichlidae		
<i>Boulengerochromis microlepis</i>	Yellowbelly	Nguhe
<i>Tilapia melanopleura</i>	Tilapia	NA
<i>Tilapia tanganyicae</i>	Tilapia	NA
Centropomidae (robalos)		
<i>Lates microlepis</i>	Nile perch	Pamba
<i>Lates augustifrons</i>	Nile perch	Sangala
<i>Lates mariae</i>	Nile perch	Nonzi
<i>Luciolates minor</i>	Perch	Mgebuka
Characidae		
<i>Hydrocyon lineatus</i>	Tiger fish	Kibebe
<i>Alestes macrophthalmus</i>	NA	Manzi

Clupeids are the most important family in the commercial fishery. Two species, *Stolothrissa tanganyicae* and *Limnothrissa miodon*, are the staple product of native fisheries. They also provide food for the Nile perch and other predators found in the lake. *Stolothrissa* reaches 8 cm and *Limnothrissa* 15 cm in length.

Cichlids are also abundant but more varied; as long ago as 1901, Boulenger described more than 60 species belonging to 21 genera. Cichlids are the most prized food fish, especially the species *Boulengerochromis microlepis*, which weighs up to 3 kg, and *Tilapia tanganyicae*, the most common cichlid in the lake. The deep lake waters are known to be well endowed with cichlids and other edible fish. These waters, however, have no clupeids or other algae-eating fish since only a shallow layer of surface waters is capable of producing al-  
gae.

Other food fish which are much larger than the clupeids or cichlids belong to the family Centropomidae. Among the centropomid fishes, the predatory Nile perch has three species peculiar to Lake Tanganyika. They grow as large as 100 pounds, but the flesh of specimens of this size is coarse.

### **ROK Longliner Has King Crab, Salmon, Halibut; Owner Is Fined \$325,000**

National Marine Fisheries Service Special Agent Dean L. Owren observed the Republic of Korea (ROK) longline vessel *Dong Won No. 707* haul back a king crab on its longline gear while fishing off Baranof Island, Alaska, on 1 August 1976. The NMFS Special Agent and a boarding party from the U.S. Coast Guard Cutter *Jarvis* boarded and inspected the ROK vessel in position lat. 56°30'N, long. 135°48'W.

They found 1 golden king crab varnished and prepared for mounting; 15 fresh king crab legs or leg segments; 2 fresh king crab claws; 10 frozen king crab legs; 1 frozen salmon; and 1 frozen halibut. The *Dong Won No. 707* was seized on suspicion of violating U.S. laws regarding the retention of Continental Shelf Fishery Resources (CSFR) and was escorted to Sitka, Alaska.

The *Dong Won No. 707* (620 GRT) is a 54-meter longline vessel built in 1966 and owned by the Dong Won Ice Company, Pusan, ROK. It fished primarily black cod, *Anoplopoma fimbria*, using longlines and a few pots. Its catches were headed, gutted, and quick frozen on board. This is the first case involving retention of CSFR by a longline vessel off Alaska. Longline gear is designed to take free-swimming species of finfish, not crustaceans which dwell on the bottom.

On 12 October 1976, the owner of the *Dong Won No. 707* agreed to pay a \$325,000 civil penalty for violating U.S. law. Criminal charges against the master of the ROK vessel were dropped. The *Dong Won No. 707* departed U.S. waters on 13 October.

According to the NMFS Office of International Fisheries, the *Dong Won No. 707* is the third of four ROK fishing vessels that have been seized for violating U.S. fishing laws during 1976. On 9 February the *Dong Won No. 709* (621 GRT) was seized and fined \$530,000 for fishing inside the U.S.

Contiguous Fishing Zone (CFZ), a 12-mile limit around the coast. On 21 July the ROK stern trawler *Kyung Yang Ho* (5,377 GRT) was seized for violating CSFR laws by retaining crab and fined \$575,000. The third seizure of an ROK vessel was that of the *Dong Won No. 707* on 1 August. A fourth ROK vessel, the longliner *Kwang Myong No. 21* (499 GRT), was seized 3 September for a CSFR violation. That case is still pending. Detailed reports on the seizures of the *Dong Won No. 709* and the *Kyung Yang Ho* can be obtained by requesting International Fisheries Reports 76/96 and 76/203 from the Office of International Fisheries, NMFS, NOAA, U.S. Department of Commerce, Washington, DC 20235.

### **GERMANY REPORTS HERRING IMPORTS**

The total supply of Federal Republic of Germany (FRG) herring in 1975 was 145,000 metric tons (t), compared with 149,000 t in 1974. The Common Market (EC) was the major supplier, accounting for 68 percent of all FRG imports. Canadian imports were 15.2 percent of all imports, and U.S. imports, 6.3 percent (Table 1).

Common Market exports to Germany have decreased from 114,000 t in 1973 to 77,000 t in 1975, reflecting the decline in North Sea herring stocks. Canada and the United States, during the same time period,

have increased their share of the total German herring supply from 3 to 12 percent, and from 1.5 to 5 percent, respectively.

The amount of fresh and frozen whole herrings was 45,000 t in 1975, a decline from 49,000 in 1974. Fresh and frozen butterfly fillets were 68,000 t, an increase of 5.6 percent over 1974. Imports of pickled butterfly fillets and spiced products were 3,322 t, an increase of 8 percent over 1974. Salted herring imports were 22,000 t in 1975, almost the same as in 1974. Declining herring stocks in the North Sea will probably result in increasing imports of herring. (Source: Irish Sea Fisheries Board.)

### **Denmark, Norway Tell New Fisheries Jurisdictions**

Danish Prime Minister Anker Jorgensen announced on 5 October that the Government would present a proposal for a 200-mile fisheries limit for Denmark, Greenland, and the Faeroe Islands. The proposed extension would take place at various times in as yet unannounced zones at the discretion of the Prime Minister. Jorgensen explained that this method was chosen because of the uncertainties surrounding Law of the Sea negotiations and Common Market (EC) fishery policy discussions. The fisheries limit of Greenland was expected to be extended by 1 January 1977, but jurisdiction of the Faeroes depends on final negotiations with the EC over Faeroese fishing in British waters and a reciprocal fishing agreement with Norway.

The NMFS Office of International Fisheries notes that the Danes are attempting to protect the waters of the Faeroe Islands and Greenland, and at the same time retain full access for the Danish and Faeroese fleets to other nations' waters, especially Britain's.

Norwegian Prime Minister Nordli also announced on 5 October that Norway would enforce a 200-mile economic zone on 1 January 1977. Norway signed a bilateral fisheries agreement with the USSR on 15 October over Soviet fishing privileges and met with Poland and the German Democratic Republic before the end of 1976. Norway will also negotiate with the EC over reciprocal fishing rights, as it catches 25-30 percent of its catch in waters which will be included in the EC's new 200-mile limit. (Sources: U.S. Embassies in Copenhagen and Oslo.)

**Table 1.—Federal Republic of Germany herring imports, 1973-75.**

Exporting Country	Imports (mt)		
	1975	1974	1973
<b>Common Market (EC)</b>			
Denmark	46,822	57,080	71,755
Ireland	2,745	5,617	5,406
Netherlands	11,330	11,209	14,153
United Kingdom	12,502	14,484	17,282
Other	3,649	2,716	5,554
<b>Total EC</b>	<b>77,048</b>	<b>91,106</b>	<b>114,150</b>
<b>Non-EC</b>			
Bulgaria	—	260	1,141
Canada	17,428	8,964	5,227
German Democratic Republic	1,181	2,994	1,455
Iceland	706	151	621
Norway	7,087	4,199	6,238
Poland	2,404	4,524	4,802
Sweden	631	159	653
USSR	378	997	—
USA	7,270	3,381	2,611
Other	7	11	39
<b>Total Non-EC</b>	<b>37,092</b>	<b>25,640</b>	<b>22,787</b>
<b>Grand total</b>	<b>114,140</b>	<b>116,746</b>	<b>136,937</b>
<b>Total FRG herring supply (FRG production and imports)</b>	<b>144,868</b>	<b>149,315</b>	<b>172,564</b>

Source: Irish Fisheries Board.



Bulgarian stern trawler *Ofelia* enters Oregon's Coos Bay Harbor.

## Bulgarian Stern Trawler Seized Off Oregon

The U.S. Coast Guard seized the Bulgarian stern trawler *Ofelia* on 27 September 1976 for the violation of United States 12-mile Contiguous Fishing Zone (CFZ). The Bulgarian vessel was observed fishing off Cape Arago near the Oregon coast from 0.3 to 0.6 nautical miles inside the CFZ. After establishing *Ofelia's* position by radar, fathometer, and visual bearings, and observing the hauling of a trawl, the Coast Guard cutter *Venturous* sent a boarding party, including a National Marine Fisheries Service (NMFS) agent, aboard the vessel to notify the master of the seizure. The boarding party confirmed *Ofelia's* position by its own radar. The captain offered no resistance and the vessel proceeded under escort to Coos Bay, Ore.

The *Ofelia* is a factory trawler of B-418 (II) class, built in April 1975 in Gdynia, Poland, and is owned by the Okeanski Ribolov of Burgas, Bulgaria. The crew consists of 21 officers and 82 crewmen including the captain, Hristov Popov. The vessel is equipped for bottom and pelagic trawling and also has fish processing equipment on board. In addition to five holds, of which two are refrigerated, the vessel is equipped with a 37 cubic meter fish oil tank. Only pelagic (mid-water) trawls are used in the Pacific hake fishery; the net is 95 meters wide and 165 meters long and has progressively smaller mesh (from 60 cm at the top to 5 cm at the bottom). The cod end liner

measures only 2 cm per stretched mesh (or slightly over 1 1/2 inches). The *Ofelia's* target species is hake and, at the time of the seizure, the vessel's holds contained 205 metric tons of hake fillets, 45 metric tons of headed and gutted hake and 48 metric tons of fish meal. The total value of these products was estimated at \$350,000.

This is the first time that Bulgaria has sent five stern trawlers and two transport vessels to enter the hake fishery off Oregon and the *Ofelia* is one of them. The *Ofelia* arrived off the U.S. west coast on 5 September, began fishing 6 September and planned to remain in the hake fishery until 15 December 1976.

The *Ofelia's* specifications are as follows:

Gross Registered Tons	2,467
Draft	17 feet
Length	292 feet
Width (Beam)	49 feet
Speed (Max.)	15.5 knots
Engine (6 cyl. diesel)	3,600 hp
Endurance	80 days

Civil action was filed against the Bulgarian captain on 28 September and the hearing took place on 6 October in U.S. District Court, Portland. On 7 October, the captain was fined \$5,000 and sentenced to a year of unsupervised probation. The civil suit was settled out of court and a fine of \$350,000 was imposed. The fine to the captain (\$5,000) and moorage charges were de-

ducted from the total sum. After payment of the fine, *Ofelia* was released and escorted out of Coos Bay on 18 October. Three crewmen from the Bulgarian vessel requested political asylum on 13 October. The U.S. Immigration and Naturalization Service granted their request.

The *Ofelia* is the first foreign vessel seized off the Oregon coast as well as the first Bulgarian vessel seized off the west coast. (Source: Enforcement Division, NMFS, NOAA.)

## West African Nations Eye LOS Common Front

The ministers having responsibility for marine fisheries from Senegal, Mauritania, Guinea-Bissau, Gambia, and Cape Verde met on 14-16 October 1976 in Dakar (Senegal) to discuss common problems in their fisheries and the need for cooperation. A major concern expressed by the ministers was the protection of fishery limits from poaching by vessels of the developed countries.

Andrien Senghor, the Senegalese Minister of Rural Development and Water Resources, who presided over the Conference, stressed the importance of developing national fishing fleets and fishing industries. He stated that the Senegalese fishing industry is currently working at only 70 percent of its capacity. He also emphasized that West

African countries must develop their own statistics on foreign catches within their fishing limits, because the available statistics (which indicate a catch of 1.2 million tons) are not realistic and should be "at least three times as much". The question of adequate means for enforcement was also stressed. In Senegal, which claims a 200-nautical-mile fishing zone, the Navy is responsible for enforcement. Senegal reportedly does not now have means to strictly enforce this limit. However, Senghor stated that his Navy's capability will be increased by new patrol vessels and planes. He reportedly spoke out against "looting of our marine resources by Eastern as well as Western industrialized countries."

Three task forces studied: 1) the exploitation of the fishery resources; 2) the status of fisheries development in the region; 3) the management and conservation of the resources; and 4) the Law of the Sea aspects, including enforcement. The need for cooperation in all these areas was found essential.

A communique was issued which mentions, in addition to the above four points, the need for the increased interchange of commercial and technical information, the development of artisanal fishing industries, and a call for the coordination of the fishing legislation of the five West African countries. The conference proposed a meeting of experts to "present a common front on the Law of the Sea," and the formation of a Coordinating Committee with a Permanent Secretariat. The next conference will be held in 6 months in the Gambia which will be responsible for making the arrangements, while Senegal will continue to provide the services of the Secretariat.

## Taiwan Readies Purse Seine Fleet Expansion

The Taiwanese Government is helping its fishing industry to make a large investment for the construction of 20 fleets of large, steel purse seiners and support vessels. Each new fleet will have 5 vessels: one purse seiner (150 GRT), two light-carrying vessels (50-60 GRT), and two refrigerated fish carriers (150-200 GRT). A total of 100 vessels will be built.

The first fleet of five vessels, ordered by the Shuan Tien Fishing Company, is being built by the Suao Shipyard, located on the



east coast of Taiwan between Keelung and Hualien (see map). The vessels were scheduled to be completed before the end of 1976.

In recent years, Japanese vessels have been fishing in the coastal waters off eastern Taiwan in the East and South China Seas and selling their catch in Taiwanese fishery markets. The Taiwanese Government and the fishing companies, therefore, decided to build the seiner fleets in order to develop their own coastal fishery. (Source: *Economic Daily News*.)

Taiwanese vessels have made consistently good catches in the newly discovered fishing grounds off Australia, New Zealand, in the Red Sea, in the South and North Pacific, and along the southwestern coast of Africa. The Taiwanese Government is actively studying such migratory species as mackerel, skipjack, pompano, etc. The Government also learned that the Antarctic Ocean is abundant in krill and sent the *Hai Kuong*, a research vessel, to conduct exploratory research in November 1976. (Source: *Lien Ho Pao, Chung Yung Tzu Pao*.)

According to the NMFS Office of International Fisheries, the Taiwanese Government and the Joint Commission on Rural Reconstruction will provide financial assistance to the fishing companies which will order the 20 seiner fleets with 100 fishing vessels. The projected date of completion will be within the next 5 years and most likely by 1980. The average catch per fishing day of each fleet is estimated at about 40-50 metric tons (t), or 200,000 t per year. (The average fishing days per year were calculated at 200 days.) The fleets will fish in the East and South China Seas and expand their operations to the north and South Pacific oceans by 1985.

## Canada Will Expand Fishing, Sport Boat Harbors

Second reading was given 10 December 1976 in Canada's Parliament to Bill C-7 "The Fishing and Recreational Harbours Act". The new Act, which is to be administered by the Fisheries and Marine Service of Fisheries and Environment Canada, is designed to provide for the development and administration of some 2,300 fishing and recreational boat harbors.

"The Act is aimed at meeting the changing requirements of the commercial fisheries and the growing needs of sports fishing and recreational boating," said Roméo LeBlanc, Minister of Fisheries and the Environment. Legislative authority for administration of these harbors is currently provided by the Harbours and Piers Act and its accompanying Wharves Regulations, originally drafted in 1895 and revised in 1937.

Administratively, the present Bill contains enabling provisions which will allow the Minister to manage and maintain harbors under his jurisdiction, to make and

enforce regulations, and to prescribe and collect charges for the use of harbors. At the present time, the majority of harbors and wharves have no day-to-day supervision, an inadequate fee structure, and minimal enforcement of regulations.

"I intend to introduce an effective management system, which will be flexible and responsive to the needs of fishermen. Harbor managers will be given the authority required to properly manage their harbors and facilities, and will be provided (by subsequent regulations) with adequate means of enforcement," said LeBlanc.

Under the new Act the provision of harbors and associated facilities for recreational boating, such as marinas and launching ramps, will emphasize joint planning and cooperation with the Provinces. Construction, operation, and maintenance of facilities providing access to the water, such as launching ramps, will be mainly the concern of provincial and municipal governments with the federal government propos-

ing some cost sharing arrangements to encourage this type of development. Regulations governing fee structure and other details of the Act were expected later.

## PERUVIAN ANCHOVY FISHERMEN STRIKE

Peru's anchovy fishermen struck 18 October to oppose the Peruvian Government's program of reducing the operating deficit of PESCAPERU, the Government-owned fish meal company. The fishermen were especially critical of the Government's proposal to sell most of the nationalized anchovy fleet to private owners and groups of PESCAPERU's former employees.

Peruvian press reports of successful anchovy fishing off that country's coast, however, indicate that anchovy fishermen are gradually going back to work. The Government-controlled newspapers reported on 9 November that some 145 fishing boats went to sea the day before, catching a record 15,000 metric tons of "exceptionally large anchovies."

The fleet was reportedly made up of 37 vessels owned by PESCAPERU and of 108 vessels owned by the newly formed small cooperative fishing enterprises. More recent reports indicate that as many as 170 vessels were fishing on 14 November, or 25 more than 5 days earlier. The 170 vessels were manned by 3,000 fishermen, or about 30 percent of the total labor force in the anchovy fishery. One-third of the fishing vessels based in Callao were reportedly fishing and the fish meal factories in that port were then operating at full capacity.

The Comité de Coordinación y Unificación Sindical Clasista (CCUSC) announced in a press conference on 9 November, that PESCAPERU and the representatives of the Federación de Pescadores de Peru (FPP, the Peruvian Fishermen's Federation) began direct talks on 8 November. The Secretary General of the FPP, Claudio Nizama, was participating in the talks even though he was still officially "detained" by the Government. The FPP demands, revealed during the press conference, were: 1) Respect for the labor guarantees previously achieved by the FPP; 2) a 250,000 soles (approximately US\$3,730) indemnity to all fishermen who, for any reason, are separated from PESCAPERU. This would include all of PESCAPERU's former employees, even those

who choose to purchase the company's vessels and form small cooperatives; and 3) an end to all repressive measures against the strikers and their supporters, and release of all FPP members detained by the Government.

Striking fishermen are especially bitter toward those fishermen who have returned to work. In early November, bombs were placed at the homes of seven such fishermen in Lima and northern Peruvian ports. No one was injured although some property damage was reported. In some cases, threatening notes were left behind. In addition, the homes of other working fishermen had been vandalized. These terrorist tactics have reportedly been launched by a group calling themselves the Miguel Gran Command.

The Peruvian Minister of Fisheries, Rear Admiral Francisco Mariategui, has called the attitude of some FPP members "unpatriotic and negative." He indicated that the Government was losing 250 million soles (approximately US\$3.7 million) each day of the strike.

The Peruvian Government showed some signs of accommodation with the striking fishermen. The FPP's President, Carlos Blas Robles, was released from custody to participate in the talks with Government officials.

On the other hand, the Government adopted various measures designed to entice the wavering fishermen, or those experiencing economic difficulties, away from the FPP and back to work. The Government announced on 13 November that striking fishermen would be given another chance to register to go back to work. Fishing on Sunday, generally prohibited by law, was authorized. Also, instead of weekly payments based on the landed tonnage, PESCAPERU began paying the small cooperatives for their catch as soon as it was delivered. In addition, the Government also took a number of administrative actions against the FPP. The Ministry of Labor has announced that FPP leaders will no longer be recognized by the Government as the legal representative of the fishermen because the strike violated the state of emergency declared in July. The Ministry's statement added that FPP leaders would be held responsible for the strike and the acts of terrorism which have been committed. (Source: U.S. Embassy, Lima.)

According to the NMFS Office of International Fisheries, the Peruvian Government had probably not completely recovered by late November from the economic damage experienced in the first few days of the strike. But, with the reported record anchovy catches and a gradually increasing number of fishermen reporting to work, the detrimental impact of the fishermen's strike was definitely reduced. Government willingness to deal directly with FPP representatives and the release of several detainees were positive signs, but the FPP's demands and the Government position, dictated by harsh economic realities, were still apparently miles apart. The Government-owned daily newspaper *La Cronica* reported on 12 November that PESCAPERU and the Federación de Trabajadores Pesqueros del Peru (FETRAPEP) had signed an agreement on salary increases. The implication was that a solution to the strike has been found. However, FETRAPEP appears to be a "sweetheart" group without significant support among PESCAPERU's 9,000 fishermen, many of whom remain on strike.

## JAPANESE FISHERY PLANS TRANSLATED

The following reports are abstracts of translated articles and full translations recently produced by the Language Services Branch, F412, of the National Marine Fisheries Service (NMFS). Copies of complete translations of the abstracted material are available from the Language Services Branch, F412, NMFS, NOAA, U.S. Department of Commerce, Washington, DC 20235.

An article in *Suisan Shimbun* (No. 3718, 21 April 1976) summarizes the latest available annual report, commonly called the "Fisheries White Paper," of the Fisheries Agency of Japan. The article discusses such major topics as the trend in supply of fisheries products in Japan, the trend of moderate fish price increases, changing circumstances surrounding the fishing industry, financial difficulties confronting fishing companies, and future of the fishing industry. Thirteen statistical tables, two graphs and one map from the White Paper are included. The article also incorporates some responses of industry spokesmen to the government's report, as well as an enumeration

of government programs currently in effect.

The Soviet Union and the Peoples Democratic Republic of Korea (North Korea) have offered to sell Alaska pollock "surimi" to Japan, according to a *Minato Shimbun* (No. 8772, 19 September 1976) report. The offers were tendered to the National Federation of Kamaboko Producers Cooperatives in September 1976. The Federation, whose members are faced with shortages of kamaboko raw materials, was seriously considering the offers. The Japanese Government limits the quantity of Alaska pollock "surimi" imports through the "Import Quota" (IQ) system and Kamaboko producer associations were planning to lobby for removal of "surimi" from the IQ list when the raw material supplies dwindled further. The Soviets are currently producing "surimi" and can become a ready supplier to the Japanese kamaboko industry. Whether the North Koreans produce Alaska pollock "surimi" at present is not known; however, their total annual catch of Alaska pollock is reportedly 1,000,000 metric tons. (Complete translation.)

Morphological examinations and tagging experiments for identifying several groups of Brydes whales inhabiting Japanese offshore areas are discussed in an article in *Geiken Tsushin* (No. 288, August 1975) by Y. Masaki. Although Brydes whales have been harvested by the Japanese since ancient times, they were not distinguished from sei whales until 1955. In 1955, the "Japan Whaling Statistics" began to list Brydes whales and sei whales separately, calling the former "southern sei whales," a misleading name, which has since been replaced by "nitari kujira." Four groups of Brydes whales are commonly recognized in Japanese offshore waters. They are found in the following regions: off Sanriku; west of Kyushu; Bonin Islands and north Pacific areas. Masaki claims no success in establishing each of these groups as a subpopulation in the biological sense.

The semi-governmental Japan Marine Fisheries Resource Research Center published its latest activities report on 15 August 1976 notes *Suisan Shuho* (No. 781, 15 September 1976). The Center employs 11 vessels to experimentally harvest in eight types of fisheries in more than a dozen locations throughout the world. The most noteworthy result of these efforts comes

from off Nova Scotia, where the center-chartered *No. 63 Hoyo Maru* has caught 272.7 t of squid to date. The catch amounted to 98 percent of the target for this survey scheduled to end in early December 1976.

On the other hand, the greatest disappointment came from skipjack fishing in the Oceania region of the Pacific. The purse seiner *Nippon Maru* caught only 28.5 t of tuna, a scant 2.6 percent of the 1,112 t goal set by the center. According to the center director, the center was asked by the Argentinean Government to study fish resources off Patagonia. In response to this request, the center planned to dispatch the purse seiner *No. 1 Orient Maru* to that region in 1977. The center is also planning to conduct, at the cost of 700 million yen (\$2.3 million) a survey off the Chilean coasts this year. The Agriculture and Forestry Ministry is proposing a 4,080 million yen (\$13.5 million) subsidy to the center for FY77.

The Fisheries Agency of Japan has published details of a proposed sixth Five-Year Plan for 1977-81 to improve 1,270 fishing harbors, according to a report in *Suisan*

*Shuho* (No. 781, 15 September 1976). The agency maintains that a continuation of extensive renovation work on harbors is necessary in order to establish modern and attractive bases of operation for fishermen, improve fishing villages and towns where families of fishermen live, and help ensure a stable supply of fish as important sources of food for the nation. The agency assesses the importance of each fishing harbor according to the contributions it makes in: 1) fish harvesting; 2) catch distribution; 3) community life and non-fishery industry development at or near the harbor; and 4) navigational safety.

The total cost of the sixth Five-Year Plan is estimated to be 1,400 billion yen (\$4,666 million), which is nearly twice as much as the fifth Five-Year Plan to be completed in December 1976. In the new Five-Year Plan, harbors important to Japanese coastal fisheries receive top priority with 50 percent of the entire budget earmarked for them. Harbors serving inshore fisheries receive the second priority by receiving 16 percent of the budget (Complete translation.)

## Japan Will Reduce Tuna Fleet 20 Percent

The Federation of Japan Skipjack and Tuna Fisheries Cooperative Associations, with the support of the Japanese Government, has inaugurated a 3-year program designed to reduce the current tuna fleet of 1,300 vessels by 20 percent. The plan calls for the removal of 65 vessels from the tuna fleet in 1976, 130 in 1977, and 65 in 1978. Some of these vessels will be used in the squid and other fisheries, and the remaining vessels will be scrapped. Loans and subsidies have been appropriated to help cover either the costs of diverting the ships to other fisheries, or of scrapping the remaining vessels. The plan has been necessitated by increased South Korean and Taiwanese tuna exports to Japan, according to Japanese sources. Faced with higher catch rates on the part of the Taiwanese and Koreans, together with lower labor costs, the Japanese tuna industry is losing its competitive advantage, even on the domestic market.

According to the NMFS Office of International Fisheries, the United States and Japan provided South Korea with financial assis-

tance during the 1950's to stimulate the Korean tuna industry. In 1957, Korea began its first experimental operation of tuna longliners. In 1962 Korea had a tuna fleet of five Japanese-built longliners; by 1967 Korea had increased this to 170 vessels which took about 40,000 metric tons (t) of tuna annually. In 1972 Korea's fleet totaled 360 tuna vessels, taking 97,670 t of tuna. The catch in 1973 was 105,723 t and in 1974 reached 106,921 t. The Japanese, with a huge pelagic fleet of 1,300 vessels, landed 572,026 t of albacore, bluefin, yellowfin, bigeye tuna, young tuna, skipjack, and other tuna-like species in 1972 (Tables 1 and 2).

Although Japanese tuna catches have remained consistently high, the overall efficiency of Japanese pelagic tuna operations, compared with that of South Korea, has been declining in recent years. The efficiency of tuna longliners is measured in terms of the number of fish caught per 100 hooks. The Japanese rate of catch per 100 hooks has been decreasing, necessitating longer pelagic expeditions. In that the over-

all costs of fuel, gear, and salaries have risen dramatically since 1974, extended voyages are doubly costly to the tuna industry. In contrast, South Korea's rate of catch per 100 hooks has been rising, enabling higher catches in a shorter time period. This, together with overall low labor costs, allows South Korea to market its tuna at a price far below Japanese competitors.

Japan imported about 50,000 t of tuna from Korea, valued at US\$68 million in 1975, or about 55 percent of total tuna imports of 90,900 t (Table 3). Japan exported about 137,800 t of frozen tuna in 1974, much of which was exported to the United States and Puerto Rico, where it was processed and canned. Japan also exported about 45,800 t (producer weight) of canned and

processed tuna in 1974, primarily to the United States, the European Community, and Canada.

Frozen round tuna exports declined to 32,400 t in 1975, only 24 percent of the quantity exported by 1974, due to a sharp fall in U.S. demand. Exports of canned and processed tuna rose to 46,800 t in 1975, an increase of approximately 2 percent (Tables 4 and 5).

Faced with a worsening situation on the domestic market, the Japanese tuna industry pressed the Government to hold private negotiations with the Koreans in an attempt to set tuna import quotas. The Koreans, fearing major quotas would be established by the Japanese, agreed to a voluntary quota of 45,000 t per year in June 1975. This action did not solve the Japanese domestic market problem. A further proposal was made in late 1975, calling for a duty-free limit of 70,000 t of tuna with a 20-25 percent duty on larger quantities. The Koreans reacted severely to this proposal by threatening to withdraw Japanese fishing rights within Korean waters. (Sources: *Australian Fisheries* and *Fishing News International*.)

**Table 1.—Republic of Korea's 1970-74 tuna catch.**

Year	Catch (mt)
1970	171,363
1971	183,784
1972	197,670
1973	1105,723
1974	2106,921

<sup>1</sup>ROK Office of Fisheries, "Yearbook of Fisheries Statistics," 1974.

<sup>2</sup>FAO, "Yearbook of Fisheries Statistics," 1974.

**Table 2.—Japan's 1970-74 tuna catch (metric tons).**

Year	Albacore, other tunas <sup>1</sup>		Skipjack, tuna-like species <sup>2</sup>	Totals
	Quantity	Value		
1970	291,017	231,901	522,918	
1971	307,965	191,656	499,621	
1972	318,090	253,936	572,026	
1973	341,818	356,343	698,161	
1974	348,950	373,573	722,523	

<sup>1</sup>Includes albacore, bluefin, yellowfin, bigeye tuna, and young tunas.

<sup>2</sup>Includes skipjack and frigate mackerel (*Auxis thazard*). Source: Japanese Ministry of Agriculture and Forestry, "Gyogo Yoshokugyo Seisan Tokei Nempo," 1976.

**Table 3.—Japan's tuna imports, 1974-May 1976, by quantity (1,000 mt) and value (US\$ million).**

From	1976		1975		1974	
	Quantity	Value	Quantity	Value	Quantity	Value
Korea	24.0	41.0	50.1	67.9	28.9	36.5
Taiwan	3.7	8.6	19.4	27.0	9.9	14.1
USA	0.1	0.04	1.2	2.8	0.2	1.2
Others	7.0	4.7	20.2	16.5	7.7	8.0
Total	34.8	54.3	90.9	114.2	46.6	59.8

Source: Japanese Ministry of Finance, "Japan Exports and Imports: Commodity by Country," 1974, 1975. Published by the Japan Tariff Association.

**Table 4.—Japanese exports of frozen round tuna, 1974-75.**

Country	1975		1974	
	Quantity	Value	Quantity	Value
	1,000 mt	US\$ million	1,000 mt	US\$ million
USA	2.8	1.3	59.0	45.8
Puerto Rico	6.5	3.0	37.0	20.0
Canada	0	0	0	0
European Communities	<0.5	<0.001	5.1	5.2
Others	23.1	6.3	36.7	12.0
Total	32.4	10.6	137.8	83.0

Source: Japanese Ministry of Finance, "Exports and Imports: Commodity by country," 1974, 1975. Published by the Japan Tariff Association.

**Table 5.—Japanese exports of canned and processed tuna, 1974-75.**

Country	1975		1974	
	Quantity	Value	Quantity	Value
	1,000 mt	US\$ million	1,000 mt	US\$ million
USA	19.9	40.8	19.5	43.3
Puerto Rico	0	0	0	0
Canada	6.8	14.9	6.7	16.1
European Communities	12.4	22.1	10.2	20.5
Others	7.7	15.4	9.4	20.0
Total	46.8	93.2	45.8	99.9

Source: Japanese Ministry of Finance, "Exports and Imports: Commodity by country," 1974, 1975. Published by the Japan Tariff Association.

## Icelandic Firm X-rays Fish Blocks for Bones

The Icelandic Freezing Plants Corporation, also known as SH, is now X-raying fish blocks to improve the quality control of its frozen fish exports which are mainly shipped to the United States, according to the NMFS Office of International Fisheries.

Quality control of frozen fish products for the U.S. market has been difficult to implement. To spot check the production of frozen blocks it has been necessary to thaw out the fish to ascertain its quality. The X-ray equipment, which both X-rays fish blocks and immediately produces the picture of the product, makes control more extensive and more reliable as it reveals the bones remaining in the fish block. A special vehicle, owned by SH, now takes this equipment throughout Iceland and the blocks are X-rayed in all of the corporation's freezing plants.

Halldor Gislason, an SH engineer who developed the X-ray technique, had originally hoped that it would be possible to also reveal parasites in the products on the X-ray pictures, but that hope failed. However, fish bones can be clearly seen. It is hoped that this new technique can be further developed



so that a great number of fish blocks could be X-rayed at once and rapidly without unwrapping the product. Gislason also stated that there are no health dangers from the

radiation. "Soft" X-rays and short exposure time produce no more radiation than the fish receive in a 6-month period from natural radiation sources.

emergency, proclaimed in July, still existed. Peruvian school teachers staged a strike on 17 November in support of the fishermen.

## World Fisheries Developments Listed

The Division of International Fisheries Analysis, which follows trends in world fisheries for the National Marine Fisheries Service (NMFS), has prepared the following summary of the recent developments in world fisheries.

**Japan's Fisheries Agency changed** its Director-General on 5 November 1976. Makoto Okayasu replaced Hoshihide Uchimura as head of the Agency. In a press conference on 5 November, Uchimura spoke of "imminent adversity," an apparent reference to extensions of fishery jurisdictions.

**Ambassador Malcolm Toon** has been selected by the White House as the new U.S. envoy to the Soviet Union. Toon, a career diplomat, replaces Walter J. Stoessel, Jr., who left Moscow because of health problems and is now Ambassador to the Federal Republic of Germany.

**U.S. and USSR representatives** on 26 November 1976, signed a Governing International Fisheries Agreement (GIFA) relating to fishing activities of the Soviet Union off the U.S. coasts.

**Mexico and the United States** signed a fisheries agreement on 26 November 1976, in Mexico City. The agreement establishes fees and catch limits for U.S. fishermen who wish to operate in the 200-mile Exclusive Economic Zone claimed by Mexico.

**Japan's prestigious newspaper**, the *Asahi Shimbun*, on 15 November criticized the "stubborn" U.S. position regarding establishment of a 200-mile fishing zone and, in a strongly worded editorial, called for Government-industry contact with President-elect Carter and an appeal to the American people. According to the paper, the U.S.-Japan fishery negotiations had ended in failure and nothing more could be accomplished at the working level.

**Japan's Communist Party demanded** on 12 November that the Japanese Government declare a 12-mile territorial sea. On the same date, the JCP presented a request to the Soviet Ambassador in Tokyo for his Government to take effective measures to

implement the June 1975 bilateral agreement on fishing operations and thus promote friendly relations between the Soviet and Japanese people.

**The Australia-Japan fishery agreement**, set to expire on 27 November, was extended by Australia for 2 months, until 26 January 1977. The extension allowed both countries to discuss outstanding fishery issues after Japan's general election on 5 December, and during their bilateral ministerial talks scheduled for Tokyo in January.

**Norway and the Common Market (EC)** held two rounds of discussions in Brussels in November on reciprocal fishing privileges in each other's fishery jurisdictions.

**A Polish Parliament committee**, the Sejm, has studied the national fisheries marketing program to determine the volume of catch needed to satisfy rising consumption: from 7.2 kg per capita in 1976 to an estimated 10 kg in 1980. Limitations on fishing imposed by the extension of fishing limits by many countries will require a search for new fishing grounds and species.

**Mexico and COMECON** (Council on Mutual Economic Assistance) held the first session of their Joint Commission for Cooperation in Moscow on 19-20 October. An agreement was reached to create a working group for fishery problems.

**Peru's anchovy catch** through 24 November 1976, amounted to 3.3 million t, exceeding the 1975 catch of 3.1 million t. During this same period in 1976, over 710,000 t of fish meal and 70,000 t of fish oil were produced.

**Though Peru's fishermen's strike** continued, many fishermen went back to work and 88 anchovy seiners were operating on 2 November. The number of vessels increased to 176 on 17 November, but declined to 144 on 24 November. The average Peruvian anchovy seiner can catch approximately 250 t of fish per trip.

**The Peruvian Ministry of Labor** warned striking anchovy fishermen that their strike was illegal because a state of

**Iceland's Marine Research Institute** has recommended that no more than 275,000 t of cod be taken annually from Icelandic waters in 1977 and 1978. The 1976 cod catch is estimated to be about 340,000 t.

**Norway's Foreign Minister** met with France's Foreign Trade Minister and other officials in Paris on 24-25 October to discuss French-Norwegian economic cooperation. Among the topics discussed were a fisheries agreement and the French fishery in the waters off Norway and Spitzbergen.

**Norway's Fisheries Minister**, Eivind Bolle, met with the chairman of the Polish Council of Ministers, Piotr Jaroszewicz, in late November to discuss Polish-Norwegian fisheries cooperation.

**Iceland's trade agreements with Czechoslovakia and Poland** have been renewed for another year with no significant changes. Considerable quantities of frozen fish fillets are shipped to Czechoslovakia, while Poland buys fish meal and salted herring.

**Canadian Maritime Province landings** in the first 9 months of 1976 were 366,000 t, valued at \$107.2 million. Landings for the same period in 1975 were 373,000 t, valued at \$91 million.

**Japanese seafood importers** contracted to buy about \$17 million worth of shrimp, other shellfish, and finfish from the People's Republic of China at the Canton Trade Fair. Details of the contract and names of the Japanese companies were not reported, but according to a Japanese source, a contract for 1,200 t of shrimp at about \$10,000 per ton was signed.

**Japan's Minister of Agriculture and Forestry** on 21 November ordered a study aimed at increasing Japan's food imports and lowering tariffs following criticism from the EC about Japanese trade policies. An EC joint message delivered in Brussels on 16 November called upon Japan to revise its trade policies and redress a trade imbalance which is now in Japan's favor.

**Two Japanese trawlers began** exploratory fishing off Bangladesh in the Bay of Bengal on 14 October. Under an agreement with the Government of Bangladesh, two private Japanese companies will pay for this trial operation.

**Prime Ministers of Sri Lanka** and Japan met in Tokyo on 17 November and the Japanese Government agreed to extend loans for a fishing gear factory and other development projects in Sri Lanka.

**Thailand has proposed** that a fishery joint venture with Indonesia begin in January 1977 with a 4-month survey of marine resources. The joint venture is a result of Government-level talks, but it will be operated by private companies in the future.

**The USSR received the** 185th and last *Atlantik*-class freezer factory trawler from the German Democratic Republic (GDR) on 24 October 1976. The *Atlantik*-class, developed by the GDR and USSR, was in production for 10 years. The 3,200 gross-register-ton trawlers were also exported to Romania, Bulgaria, and Cuba.

**Two Soviet whaling flotillas** left for Antarctica: the *Sovetskaia Ukraina* on 16 October, and the *Sovetskaia Rossiia* on 21 October. The trip will last about 7 months.

**Polish and Danish scientists** are conducting joint research to expand the supply of marine foods. The results of the studies will be used in the determination of fisheries policy and in marine culture programs.

**The average price index** of fishery products in Poland during 1970-75 remained steady despite a 59 percent increase in average salaries. Heavy government subsidies to the fishing and food industries (\$6 billion annually) account for low prices. Recently proposed increases in food prices were strongly protested by Polish consumers and were subsequently withdrawn.

**Per capita consumption** of fishery products in Poland nearly doubled during 1960-75, from 4.5 to 7.2 kg. Consumption of marine fish increased by 60 percent from 4.0 to 6.4 kg, while per capita consumption of salted herring decreased by 50 percent.

**Libya is placing a high priority** on the development of its marine fisheries during the 1976-80 planning period. A special council has been established under the Ministry of State for Nutrition and Marine Resources for this purpose.

**Angola's fishing fleet has been** greatly reduced due to the Civil War disturbances and natural disasters. Recent reports indicate that the only fishery commodity available in the Luanda markets is squid and even that only irregularly. There have been no known deliveries of fish from the Cuban and Soviet trawlers which operate in the southern Atlantic.

## Russia Tells U.S. Pacific Coast Fish Catch

The All-Union Scientific Research Institute of Marine Fisheries and Oceanography in Moscow has provided the National Marine Fisheries Service with preliminary catch statistics for fishing areas off the U.S. Pacific Northwest, California, and Alaska (see table).

For the first 8 months of 1976, Soviet fishermen reported a total catch of 415,279 metric tons (t). This total is 7,300 t, or 1.7 percent, less than for the comparable period in 1975. The Alaska pollock fishery provided the largest proportion of the catch, 175,205 t (42 percent). The Pacific hake fishery off

Washington, Oregon, and California was also significant, with a recorded catch of 127,041 t, or 31 percent of the total.

In the first 8 months of 1975 the hake fishery amounted to 37 percent of the total, while Alaska pollock made up only 34 percent. Rockfishes, Atka mackerel, flounders, cod, herring, halibut, and incidental catches of unspecified fish account for the remaining 27 percent. The Soviet fleet has been fishing pollock off Alaska since the beginning of 1975; the hake fishery off California began in March 1975.

Soviet preliminary fisheries catch off the U.S. Pacific coast, January-August, 1976.

Species	Percentage of total catch	Fishing area	Quantity in metric tons	Percentage by fishing area
Alaska pollock	42.0%	E. Bering Sea	152,135	86.8%
		Aleutian	3,073	1.8
		Western Alaska	19,286	11.0
		Eastern Alaska	711	0.4
		Total	175,205	100.0
Pacific hake	31.0	Wash., Oreg., Calif.	127,041	100.0
Flounders	6.7	E. Bering Sea	26,067	93.1
		Aleutian	271	0.9
		Western Alaska	1,444	5.2
		Eastern Alaska	110	0.4
		Wash., Oreg., Calif.	122	0.4
Total	28,014	100.0		
Rockfishes	6.3	E. Bering Sea	14,377	54.9
		Aleutian	6,691	25.5
		Western Alaska	3,370	12.9
		Eastern Alaska	133	0.5
		Wash., Oreg., Calif.	1,633	6.2
Total	26,204	100.0		
Atka mackerel	4.8	E. Bering Sea	674	3.3
		Aleutian	10,338	50.9
		Western Alaska	8,978	44.2
		Eastern Alaska	304	1.5
Total	20,294	100.0		
Cod	3.2	E. Bering Sea	12,046	88.4
		Aleutian	228	1.7
		Western Alaska	1,275	9.4
		Eastern Alaska	75	0.6
Total	13,624	100.0		
Herring	1.7	E. Bering Sea	7,226	100.0
Pacific halibut	0.02	E. Bering Sea	47	66.2
		Aleutian	2	2.8
		Western Alaska	22	31.0
Total	71	100.0		
Other, not otherwise specified	4.2	E. Bering Sea	11,390	64.7
		Aleutian	397	2.3
		Western Alaska	3,887	22.1
		Eastern Alaska	124	0.7
		Wash., Ore., Calif.	1,802	10.2
Total <sup>1</sup>	17,600	100.0		
Grand total <sup>1</sup>	100.0		415,279	

<sup>1</sup>Totals may not add because of rounding.