

INTERNATIONAL

U.S. and U.S.S.R.

Cross Fishery Problems

American and Soviet fishery experts concluded a week of technical discussions on July 30 devoted to problems of conservation and the use of fishery resources off the United States coast. The delegations agreed to recommend exchanges of personnel aboard fishing and research vessels in Atlantic and Pacific areas and suggested they begin within a month.

It was also recommended that the U.S.S.R. take action to ease problems produced by the concentration of vessels on fishing grounds commonly used by American fishermen--with immediate attention given to the area off Oregon and Washington. A recommendation was also made that there be no Soviet fishing within 12 miles of the Washington-Oregon Coast, except for research vessels. The Soviet delegation agreed that instructions would be issued to the Soviet fleet in this area repeating earlier instructions not to fish for salmon.

The conferees noted the conflict in the Shumagin Islands area where fishermen of the two nations are using different types of fishing gear. It was decided that the problem be handled within the framework of the existing agreement covering similar gear problems in the Kodiak area.

The experts recommended that scientists and technical experts meet in Moscow in mid-December to continue their work. (State Department.)



International Pacific Halibut Commission

HALIBUT FISHING ENDS IN AREAS 1, 2, 3A, and 3B

The 1966 season for the main Pacific halibut fishing areas ended at 6:00 p.m., P.S.T., August 25 for Areas 1 and 2; August 26 for Area 3A; September 17 for Area 3B. The International Pacific Halibut Commission

announced the closure to coincide with the attainment of quotas: 23 million pounds for Area 2; 33 million pounds for 3A; and 3.5 million pounds for 3B. (Area 1 is not subject to quota.)

Areas 3C and 4D (in the vicinity of the Bering Sea) remained open until November 15, without catch limits. Area 4B was open only from September 1-10. The other northern fishing areas had only a spring season this year.

The 1966 season was 28 days shorter than 1965 in Area 2 and 19 days in Area 3A. The 1966 quota in 3A was down a million pounds from 1965; Area 2's quota was the same as 1965.

Fishing areas in 1966 were: Area 1--south of Willapa Bay, Washington; Area 2--between Willapa Bay and Cape Spencer, Alaska; Area 3A--between Cape Spencer and the Shumagin Islands; Area 3B--the Shumagin Islands to Atka Island, not including the Bering Sea; Area 3C--west of Atka Island, not including the Bering Sea; Area 4A--the Bering Sea edge, Unimak Pass to the Pribilof Islands; Area 4B--Fox Islands grounds, Bering Sea; Area 4C--between the Pribilof Islands and 175° W. longitude; Area 4D--east of 175° W. longitude and north of a line between St. Paul Island and Cape Newenham and waters of the Bering Sea west of 175° W. longitude; and Area 4E--the flats east of Area 4A and south of the Cape Newenham line.

Note: See *Commercial Fisheries Review*, April 1966 p. 50, Nov. 1965 p. 41.



Fish Oil

WORLD EXPORTS SET RECORD IN 1965

The world's gross exports of fish oil (including fish-liver oil) set a record of 520,400 short tons in 1965--12 percent above revised 1964 total and slightly above previous high in 1963. The volume of exports was nearly 2½ times average annual exports in 1955-59. This indicates a rather rapid rate of expansion. Most of this expansion reflected increased output in Peru, Iceland, Norway, and

World Gross Exports of Fish Oil (Including Fish-Liver Oils) ^{1/} , Average 1955-59, Annual 1960-1965							
Continent and Country	^{2/} 1965	1964	1963	1962	1961	1960	Average 1955-59
	(1,000 Short Tons)						
North America:							
Canada	7.6	15.8	6.4	3.2	4.4	15.2	8.0
Mexico . . . . .	.3	.5	.3	.3	.8	3/	
United States	51.9	75.7	131.2	61.5	61.2	71.8	64.0
Total	59.8	92.0	137.9	65.0	66.4	87.0	73.0
South America:							
Argentina . . . . .	.4	.8	.5	.4	.6	1.0	
Chile	9.9	15.1	12.7	12.0	5.1	6.6	4/
Peru	151.3	121.9	138.3	166.0	112.8	38.6	5/
Total	161.6	137.8	151.5	178.4	118.5	46.2	6/
Europe:							
Denmark	57.1	33.5	22.9	16.8	10.5	7.4	12.0
France	2.1	2.8	4.0	2.8	2.7	2.4	1.0
Germany, West	15.2	22.2	22.7	22.9	25.3	26.2	17.0
Iceland	97.6	68.6	71.2	72.5	35.2	54.5	21.0
Netherlands ^{7/ 6/}	1.7	2.7	2.8	2.6	5.2	7.8	10.0
Norway	59.4	22.3	21.2	18.6	24.0	18.4	21.0
Portugal	10.3	7.5	10.5	6.7	7.4	4.9	5.0
Sweden	3.3	4.0	3.4	2.0	3.4	2.5	2.5
United Kingdom	1.9	2.2	2.7	2.6	3.2	3.7	3.0
Others (incl. U.S.S.R.) ^{7/}	2.8	2.8	2.6	2.9	2.8	2.0	1.7
Total	251.4	168.6	164.0	150.4	119.7	129.8	97.4
Africa:							
Angola	5.2	8.1	3.4	2.9	3.3	7.3	8.1
Morocco	1.4	5.8	5.7	4.9	4.5	5.7	2.7
South Africa Republic ^{8/}	38.9	49.2	35.3	50.4	50.3	37.4	15.2
Total	45.5	63.1	44.4	58.2	58.1	50.4	26.0
Asia and Oceania:							
Japan	1.3	2.3	2.0	3.2	2.7	3.8	5.0
Others ^{7/} . . . . .	.8	.8	.8	.7	.8	1.0	1.0
Total	2.1	3.1	2.8	3.9	3.5	4.8	7.0
World Total	520.4	464.6	500.6	455.9	366.2	318.2	209.7

1/Hardened fish oils have been included wherever separately classified in export statistics.
 2/Preliminary.
 3/Under 50 tons.
 4/1959 only.
 5/May include some whale oil prior to 1960.
 6/Excludes sizable quantities of hardened fish oils exported annually, which are not separately classified in trade returns.
 7/Includes estimates for minor exporting countries.
 8/Including territory of South-West Africa.
 Note: Does not include whale and other marine-mammal oils.
 Source: U. S. Foreign Agricultural Service, Prepared or estimated on basis of official statistics of foreign governments, other foreign source materials, reports of U. S. Agricultural Attachés and Foreign Service Officers, results of office research, and related information.

Denmark; in aggregate, they accounted for about 70 percent of total exports, compared with less than 30 percent in 1955-59.

Exports from the United States, the world's leading supplier of fish oil prior to 1960, declined for the second consecutive year because of a reduced catch. In quantity, the 1965 exports were one-fifth below annual exports in 1955-59, and only about two-fifths the record 1963 exports.

According to customs data, Peru, the world's major producer and exporter of fish oil, expanded 1965 exports by nearly one-fourth--to 151,300 tons--the highest since 1962, when exports reached record 166,000 tons. The increase may have reduced stocks from high level of January 1965. Output in 1965 declined sharply from the record 1964

output estimated at 220,000 tons. (World Agriculture Production and Trade, U. S. Department of Agriculture.)



Fish Meal

WORLD PRODUCTION ROSE 11% IN JANUARY-JULY

The world's production of fish meal in the first 7 months of 1966 increased about 11 percent from the same period in 1965. Output in 1966 was up sharply in Peru, Chile, and Norway.

Most of the principal producing countries submit data monthly to the International Association of Fish Meal Manufacturers (IAFMM) (see table).

Country	June	July	Jan.-July	
	1966	1966	1966	1965
	. . . . . (Metric Tons).			
Canada	7,190	12,690	46,541	44,059
Denmark	15,554	10,265	60,825	65,446
France	1,100	1,100	7,700	7,700
German Fed. Repub.	5,187	6,006	41,758	38,161
Netherlands	1/	1/	2/1,510	3,375
Spain	1/	1/	1/	13,247
Sweden	422	196	2,070	4,482
United Kingdom	6,984	6,883	54,030	48,161
United States	30,540	29,449	3/95,452	131,480
Angola	2,982	1/	4/23,511	23,743
Iceland	19,134	15,812	76,450	67,689
Norway	56,972	45,528	277,627	189,789
Peru	5,922	506	969,397	892,653
South Africa (including S. Afr.)	47,549	29,620	206,760	232,822
Belgium	375	375	2,625	2,625
Chile	19,698	17,675	153,147	47,142
Morocco	1/	1/	1/	7,900
Total	219,609	176,105	2,019,403	1,820,474

1/ Data not available.
 2/ Data available only for January-April 1966.
 3/ R/ Data.
 4/ Data available only for January-June 1966.
 Note: Spain does not report production to the IAFMM.

FISH PRODUCTION AND EXPORTS

The member countries of the Fish Meal Exporters' Organization (FEO) which account for about 90 percent of world exports of fish meal report a rise in production and a drop in exports during January-July 1966--compared to the same period in 1965. The FEO countries are Chile, Angola, Iceland, Norway, Peru and South Africa/South-West Africa.

Table 1 - FEO Exports of Fish Meal, Jan. -July 1966

Country	July		Jan. -July	
	1966	1965	1966	1965
	. . . . . (1,000 Metric Tons)			
Chile	25.8	1.0	117.0	51.3
Angola	1/	2.8	2/ 22.7	27.2
Iceland	16.0	14.7	81.3	64.2
Norway	17.7	24.6	129.6	117.3
Peru	111.0	110.3	858.3	1,029.5
South Africa (including S. Africa)	15.7	20.2	89.7	132.7
Total	186.2	173.6	1,298.6	1,422.2

Table 2 - FEO Production of Fish Meal, Jan. -July 1966

Country	July		Jan. -July	
	1966	1965	1966	1965
	. . . . . (1,000 Metric Tons)			
Chile	17.7	2.2	153.1	47.1
Angola	1/	3.0	2/ 23.5	23.7
Iceland	15.8	14.0	76.5	67.7
Norway	45.5	46.2	277.6	189.8
Peru	0.5	12.4	969.4	892.7
South Africa (including S. Africa)	29.6	39.4	206.4	231.6
Total	109.1	117.2	1,706.5	1,452.6

1/ Data not available.
 2/ Data available only for Jan. -June 1966.



Oceanography

"OCEANOGRAPHER" SAILS ON 14,000-MILE EXPEDITION

The "floating laboratory" of the U. S. Coast and Geodetic Survey, the Oceanographer, sailed from Jacksonville, Fla., October 3, for an 11-week, 14,000-mile scientific expedition to the South Atlantic.

The 303-foot, 3,800-ton, \$9.2 million air-conditioned vessel is the largest and most completely automated oceanographic research vessel in the United States. It will conduct a wide range of marine scientific studies off the east coast of South America and participate in observations of a total eclipse of the sun on November 12.



Oceanographic track of the trip of the Oceanographer which was designated "Operation Eclipse".

The expedition's objectives are to make a scientific observation of the total eclipse and conduct research along the continental margins of Brazil, Uruguay, and Argentina. South American scientists were invited to participate in various phases of the expedition. The Oceanographer will seek evidence to evaluate the suggestion that the earth's continents were once part of one or two supercontinents that split aeons ago and have been adrift since. Its work may shed light on the idea that South America and Africa were once one continent.

The studies will determine the topography of continental shelf and slope in this area and the nature of the ocean's subbottom. Measurements of the earth's magnetic and gravitational forces will be conducted as an aid to understanding earth's crust. Bottom samples will be taken to study the nature of the sea floor.

The Oceanographer was scheduled to reach Buenos Aires on November 6 and prepare for the solar eclipse. It will be stationed directly in the path of the total eclipse, about 200 miles east of Buenos Aires and 150 miles off the Argentine coast. During the 2-minute total eclipse, an effort will be made to determine whether the ocean's deep scattering layer can be detected.



Joint Coral Sea Survey Under Way

The Royal Australian Naval Experimental Laboratory and the U. S. Naval Oceanographic Office are participating in a year-long oceanographic survey operation in the Coral Sea.



Study Earth's Magnetic Field

The U.S. Naval Oceanographic Office (NOO) is conducting an airborne geomagnetic survey--called Project Magnet--of all accessible ocean areas of the world. Geophysicists have long sought greater knowledge of the earth's magnetic field. A NOO plane left early October on a 44-day round-the-world trip.



Mariners Warned of Dangers in Commercial Fishing Techniques

The expansion of the world's fishing fleets and the development of complex harvesting techniques pose new dangers to ship and boat owners, warns the October 1966 Pilot Chapter of the U. S. Naval Oceanographic Office.

A danger facing a maritime watch officer or pleasure boat owner is the offshore fishing line that runs up to 15 miles or more. Although glass-buoyed float lines and marker pennants are generally used, an unwary mariner might foul his propeller in the extensive gear.

In coastal waters, natural estuaries, inlets and rivers, watch officers should be alert to dangers presented by weirs, pound nets, and fish traps, the publication advises.



SEDIMENTATION MAY TRANSFORM GULF OF MEXICO INTO A CONTINENT

"Some of the world's small ocean basins (such as the Gulf of Mexico, the Bering Sea, the Sea of Okhotsk, and the western Mediterranean Sea) may eventually become so filled with sediment that they become continents," said H. W. Menard, Office of Science and Technology, Executive Office of the President, of the annual meeting of the American Geophysical Union in Washington, D. C.

These basins have only small areas, but they contain nearly as much sediment as the enormous basins of the world and a far greater volume of sediment than the deep-sea trenches. Thick layers of sediment and sedimentary rock accumulate on the oceanic crustal bottom to depths of more than six miles. If sedimentation continues, these basins will fill up eventually and become part of the continents. (Reprinted, with permission from Science News, weekly summary of current science, c 1966 by Science Service, Inc.)

FOREIGN

EUROPE

European Economic Community

FISHERIES POLICY DRAFTED

The European Economic Community (EEC), faced with a mounting bill for fish imports, has drafted a common fisheries policy to enable the fishermen of their member nations to increase production. The catch by EEC fishermen has remained relatively unchanged at 2 million tons per year, while world output has increased markedly. EEC imports of fishery products in 1963 were about \$195 million.

The draft proposal would harmonize support systems of member nations for their commercial fishing industries; stabilize their fishermen's income; establish uniform market regulations and quality standards; and create a framework for modernizing the fishing fleets. Fishermen displaced by automation would be retrained. The overall policy would resemble policies for the agriculture sector of EEC economies: using price support and intercommunity levies until desired prices are realized.



European Free Trade Association

CATCH IS 2½ TIMES EEC'S

Over 5 million metric tons of fish were landed in 1965 by countries of the European Free Trade Association: Denmark, Norway, Portugal, Sweden, United Kingdom, Switzerland and Austria. Per-capita consumption averages 26.5 pounds a year. In the European Economic Community, the annual total catch is about 2 million tons; per-capita consumption is about 13 pounds.

The main fishing grounds of the EFTA countries are the coastal and international waters of the North Atlantic area.

Cod and herring account for most of the fish caught. The former, and related species such as hake and haddock, are particularly

important to Britain (two-thirds of the total catch), to Norway and Portugal, and to Greenland and the Faroe Islands.

The herring catch is less evenly distributed. It accounts for only a small part of the British landings, but it is of great importance to the Nordic countries. Sardines, classified with herring, are traditionally important for Portuguese exports, but their share in the total Portuguese catch has fallen since 1940.

Fish other than the cod and herring groups are gradually becoming more important because they are generally of greater value. The present healthy position of the Danish fishing industry owes much to its production of trout, plaice, Atlantic salmon, and shellfish, all of which bring good prices.

The countries that catch most fish are also those that eat the most. This is partly tradition, and partly the natural result of geography and economics. Only recently, with the rise of quick-freezing, has it become possible to provide ocean fish in good condition to inland markets, and even now good fish are cheapest near fishing ports. An average of 40 pounds of fish a year is consumed by each citizen of Norway, Sweden, and Portugal; Icelanders eat more. Denmark, Finland, and the United Kingdom are somewhat less enthusiastic, but still eat much more than the non-EFTA European average. Consumption in Austria and Switzerland, although rising rapidly with the development of cold-distribution systems, remains low at about 8 pounds a year.

Exports and Imports Balance

In most years, EFTA exports and imports of fish are roughly in balance at \$350-400 million. There is significant trade among EFTA nations themselves. Since fishing vessels of one EFTA country frequently land catches in another, the trade is sometimes in both directions; for example, between Denmark and Sweden.

Exports of fish are of special importance to three EFTA countries: Norway, Portugal, and Denmark. Norway until recently accounted regularly for half or more of total EFTA exports of fish; now it is responsible for a little

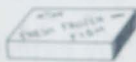
EFTA (Contd.):

over two-fifths; her fishery export earnings of \$156 million in 1964 were about 13 percent of total exports. For Portugal, fish sales abroad earned \$49 million or 10 percent of her total exports. For Denmark, the figures were \$100 million and 5 percent, respectively. Britain and Sweden, each with total exports of about \$26 million in 1964, are the only other EFTA exporters of significance.

About 40 percent of total EFTA exports of fish are either fresh or frozen. Exports of fresh or frozen fish—and especially fish fillets—more than doubled in value between 1948 and 1964, rising from \$68 million to \$156 million.

Exports of salted, dried, and smoked fish have fallen substantially since World War II. Most such exports are shipped from Norway, which still finds its traditional market for dried and salted cod in Portugal, Brazil, Italy, and Spain. More important today are exports of canned fish. Portugal accounts for about 50 percent of the EFTA total (mostly sardines, anchovies, mackerel and tuna) and Norway 30 percent (mostly canned herring and sprat). Norway also earns substantial sums from exports of fish meal and marine oil.

Three-fifths of all EFTA imports of fish and fish products go to the British market. Sweden comes next, but far behind Britain, with 11 percent. Denmark and Switzerland each imports about 6-7 percent of the EFTA total. Somewhat less than half of Britain's total imports of fish are bought from her EFTA partners; Norway and Denmark are in roughly equal position as the main suppliers. (EFTA Reporter, August 8, 1966.)



Denmark

1968 INTERNATIONAL FISHERIES FAIR PLANNED

The Danish fishing industry is sponsoring the Sixth International Fisheries Trade Fair, which will be held in Esbjerg, April 24-May 5, 1968. Scheduled originally for Copenhagen in 1967, plans for the fair were changed so that it could be tied in with the centenary of the fisheries harbor in Esbjerg.

The recently constructed Exhibition Hall in Esbjerg will provide an area of 8,000 square meters to display the latest developments in fishing and processing equipment. Modern fishing vessels can be shown in the harbor.

Denmark's Fifth International Fisheries Trade Fair held in Copenhagen, September 1964 attracted 200 exhibitors from 14 countries. It is expected that the European fishing industry will be well represented at Esbjerg in 1968.

Note: See Commercial Fisheries Review, Dec. 1964 p. 91.



Soviet Union

FISHES FOR TUNA IN INDIAN OCEAN

The tuna factory mothership Svetlii Luch departed the fishing base on Shikotan Island at the end of August 1966 for several months of fishing in the Indian Ocean. Its first stop was in the southern Kuril Islands (where a large Soviet fishing fleet catches Pacific saury) to obtain bait. It is seeking tuna and, for the first time, squid.

The Luch was bought from Japan in 1965 with 4 other identical vessels, for about US\$20 million. The terms were 30 percent down, and the rest in semiannual payments of 5 percent of the total price. The Luch-class has a capacity of about 5,300 gross tons and accommodations for a crew of 180. It is 115 meters (377 feet) long and can operate for about 4 months without resupplying. (Additional technical details available on request.) She went on maiden cruise to the tropical Pacific in May 1965 for 4-5 months. The second trip began in October 1965 and ended in early April 1966. During that voyage, about 400 metric tons of tuna were caught and canned.

Canned tuna, costing 0.80 rubles (\$0.89) for a 7-oz. can, is prominently displayed in Moscow fishery products stores.

RESEARCH VESSELS ARE ACTIVE

Two TINRO research vessels, the Adler and the Iskatel, returned to Vladivostok in late August and early September, and two others sailed from the port on research mis-

Soviet Union (Contd.):

sion TINRO is the Pacific Scientific Institute for Fisheries and Oceanography. From about February 1966, the Adler studied fishery resources and their potential off U. S. and Mexican Pacific coasts. Crisscrossing the east-Pacific between Vancouver, B.C., and Baja California, she used the former as a port of call for supplies until the Canadian Government enforced existing regulations prohibiting a foreign vessel with fishing gear aboard from entering her ports except in emergencies.

Early in 1966, the Iskatel¹ found large anchovy resources off the Mexican and U. S. coasts. She then went on a 2-month expedition to the Aleutian Islands, where she explored for Pacific ocean perch stocks and studied the biology of Alaska pollock and sablefish.

Leaving Vladivostok when the 2 TINRO vessels returned were the Akademik Berg, flagship of the Pacific fishery research fleet, a recently built large stern freezer trawler. Her destination was the central Bering Sea to study deep-water stocks of halibut and sablefish. She will trawl for those species at 400-1,500 meters (1,200-4,500 feet). A second vessel, the Seskar, replaced the Iskatel¹ in searching for ocean perch, sablefish, and halibut in an unspecified area off the U. S. Alaskan coast.

* * * * *

STUDIES PACIFIC SAURY

During February-October 1965, the research vessel Ogon of the Pacific Scientific Institute for Fisheries and Oceanography (TINRO) studied the distribution of saury stocks off the Pacific Northwest. No commercial-size stocks were observed during June-July. But from August to October, the saury occupied a 13,000-square-mile area about 50-70 miles off U. S. coasts. Sometimes they stretched to a maximum length of 4.5 miles, from northern Washington to Eureka in northern California, or between 41° and 48° N. latitude--and to a maximum width of 10 miles. The distribution was irregular; most dense concentrations were noted between 42°18' and 44°22' N. latitude or off southern Oregon, where the size of fish averaged 26 to 30 cm. (10 to 11 inches) and weighed 100 grams (3.53 lbs.) each. North of that area, saury concentrations were less dense; south of the area, the size was much smaller (18-22 cm. or 7-9 inches).

According to Soviet scientists, saury assemble off the Pacific Northwest to feed and spawn in August, and probably remain until November. (Rybnoe Khoziaistvo, No. 7, 1966, pp. 20-21.)

The TINRO fishery research vessel Krym left Vladivostok in mid-September 1966 on a 3-month cruise. Her scientists will study the biology of the Pacific saury during their winter migrations.

* * * * *

DEVELOPS NEW OCEAN PERCH FISHERY

In August, the Soviet Far Eastern Fisheries Administration began to fish for Pacific ocean perch off the North Kuril Islands (south of Paramushir Island). This fishery is still in an experimental stage and only 1 or 2 Sakhalin large stern freezer trawlers are fishing there. Average daily catches run about 50 metric tons; the highest daily catch exceeded 70 tons. Other vessels will probably be sent to the area. Because the size of the resource is not known, it is not known how many vessels it will support.



East Germany

EXPANDS HER FISHERIES

In mid-September, the factory stern trawler ROS 312-Bodo Uhse which had been operating on Georges Bank was joined by another large stern trawler. (Ostsee-Zeitung, August 31, 1966.) This is the first time since 1962 that East Germans have fished on Georges Bank. In 1962, 3 large factory trawlers were sighted in September-December, and 10 medium trawlers in June. East Germany's ICNAF fishery is traditionally conducted south of Greenland, in the Labrador Sea, and off Newfoundland. Along with their advance to the south in the Northwest Atlantic, they began to fish off South-West Africa in the eastern Atlantic. One factory trawler, ROS 311-Rudolf Leonhard was reported fishing in Walvis Bay in early September 1966. At the same time, the research vessel Ernst Haeckel was conducting studies in the South Atlantic.

East Germany is the last East European nation to expand her traditional post-World War II fishing grounds. Commercial Fisheries Review has reported the previous expansion of

East Germany (Contd.):

fishing effort, mostly in the Atlantic, of Romania, Bulgaria, Poland, Yugoslavia, and the Soviet Union. Except for Yugoslavia, other East European nations coordinate their research and operational plans very closely with the U.S.S.R.

There are many reasons for the late entry of East Germany in this race to southern fishing grounds. Most important is that immediately after the war the East Germans were persuaded by the Soviets to construct fishing vessels for their fleet. A large portion of the initial Soviet high-seas fleet--hundreds of medium side trawlers in the SRT and SRTR classes--were built in East German shipyards. East Germany herself has no more than about 50-60 medium trawlers ranging from 260 to 940 gross tons. She has only 1 or 2 modern (1964-1965) base ships in addition to 2 older ones (1950 and 1956).

In the early 1960s, construction of large factory stern trawlers began in the Wismar and Stralsund shipyards. The Wismar-built, 3,000-gross-ton Bertold Brecht class was constructed for the East German fishing fleet; the Stralsund 2,600-gross-ton Tropik class for the Soviets. By 1966, over 60 Tropiks were delivered to the Soviets and only about 15 Bertold Brechts to the domestic fleet. These largely self-sufficient factory trawlers, however, make it possible now for East Germany to extend her high-seas fishing operations to greater distances.



Iceland

REPORTS FISHERY LANDINGS AND HOW USED, JANUARY-MARCH 1965 and 1966

Species	Jan. -Mar.	
	1966	1965
	..... (Metric Tons)	
Cod	73,249	80,659
Haddock	8,669	21,123
Saithe	5,968	12,007
Ling	1,520	2,100
Wolfish (catfish)	3,821	3,140
Cusk	948	1,145
Ocean perch	2,468	4,634
Halibut	154	175
Herring	17,394	48,815
Capelin	123,742	48,797
Shrimp	721	394
Other	1,289	742
Total	239,943	223,731

Note: Except for herring, which are landed round, all fish are drawn weight.

How Utilized	Jan. -Mar.	
	1966	1965
	..... (Metric Tons)	
Herring and Capelin^{1/} for:		
Oil and meal	135,814	82,953
Freezing	2,919	10,972
Salting	1,452	3,111
Fresh on ice	937	5,111
Groundfish^{2/} for:		
Fresh on ice	10,033	12,811
Freezing and filleting	40,274	54,611
Salting	25,603	34,211
Stockfish (dried unsalted)	18,416	19,711
Canning	2	
Oil and meal	484	411
Crustaceans for:		
Freezing	710	311
Canning	11	511
Home consumption	3,273	3,611

^{1/}Whole fish.
^{2/}Drawn fish.
 Source: Aegir, June 1966.



Italy

INDUSTRY SEEKS RISE IN DUTY-FREE QUOTA OF FROZEN TUNA

The tuna industry has asked the government to begin negotiations immediately to have present restrictions on frozen tuna imports liberalized. In 1965, following negotiations at Brussels with other EEC nations, Italy was permitted to import from non-EEC countries 14,000 metric tons of frozen tuna duty free, assess an ad valorem duty of 0.5 percent for imports between 14,000-40,000 metric tons, and 15 percent over 40,000 tons.

Beginning in 1970, under the Treaty of Rome, Italy will adopt a common external tariff policy. At that time, under the Common Market tariff schedule, she will be permitted to import 14,000 tons of tuna duty free--but must assess an ad valorem duty of 35 percent for imports exceeding that amount. That high tariff is expected to seriously hurt the canned tuna industry, which presently imports annually about 40,000 tons of tuna, mostly from Japan. For this reason, the industry seeks to have the 14,000-ton duty-free quota raised to 40,000 tons. (*Nihon Suisan Shim-bun*, September 5, 1966.)



Norway

CANNED FISH EXPORTS REPORTED FOR JANUARY 1-JULY 16, 1966

As of mid-July, exports of canned brisling in 1966 were running about 13 percent higher than the same period of 1965, but shipments of canned sild were down due to a disappointing catch. Exports of canned kippered herring also declined slightly while exports of soft herring roe went up substantially. The United States and Great Britain are Norway's leading markets for canned brisling and sardines.

Products	Jan. 1-July 16, 1966	Jan. 1-July 17, 1965
. . . (1,000 Standard Cases 1/4) . . .		
Brisling	236	208
Sardines	392	442
Kippered herring	141	148
Herring roe	60	43
1 1/4 lbs of 48 1/4 cans.		

In mid-July 1966, small sild for canning was in very short supply; brisling landings were good. (Norwegian Cannery Export Journal Aug. 1966.)



Romania

TRAWLER RETURNS FROM NORTHWEST ATLANTIC

The Galati has returned from fishing on Georges Bank off New England. The trip lasted from May 17 to August 23; 54 of the 99 days were spent fishing. The total catch was about 2,000 metric tons (species not specified). The crew of about 100 averaged 8-10 hours of fishing a day. The record catch was 40 tons a day and catches of 30 tons a day were not uncommon. (The Galati is one of 2 large stern freezer trawlers bought in Japan 2 years ago.) (U. S. Embassy, Bucharest, September 9, 1966.)



ASIA

Japan

FISHERMEN SEEK 12-MILE ZONE

Disturbed by increasing foreign competition in recent years, the fishermen of Hokkaido now are seeking to establish an exclusive fishing zone beyond the 3-mile territorial sea limit. They blame the increased operations of Soviet saury fleets off northern Japan and of South Korean vessels off Hokkaido which use Japanese ports to unload their catches.

Supported by the Hokkaido Prefectural Assembly Fisheries Committee, the fishermen are preparing to launch a vigorous movement to unify Japanese views toward establishing a 12-mile exclusive fishing zone. They claim it is necessary because foreign vessels are threatening to ravage coastal fishery resources, disrupt orderly fishing, and may destroy Hokkaido's fishery economy. Faced with this pressure, the Government, despite its traditional adherence to the 3-mile concept, may need to reevaluate its policy. (Suisan Keizai Shimibun, September 15, 1966, and other sources.)

TRAWLER COMMITTEE PROPOSES EXPLORATION OFF U.S. EAST COAST

The Japanese Overseas Trawler Association was expected to review the recommendations of its study committee that selected the most promising fishing grounds not now exploited by Japan. The committee reportedly agreed on September 16 that priority be given to surveying the Atlantic grounds off North and South America because they held the greatest potential. It noted the Soviet fleet's operation off northeastern United States as indicating the possible potential of such resources as codlike fish and other deep-swimming species in nearby waters.

The Association's members recently agreed to pool resources to conduct explorations for new fishing grounds. The Association is expected to select a suitable 1,000-ton trawler for the survey from one of its member firms. (Suisan Keizai Shimibun, September 19, 1966.)

Japan (Contd.):

JOINT WHALE SURVEY
IN ANTARCTIC PLANNED

The three whaling companies have agreed to cooperate in a joint survey of the Antarctic Ocean whale resources. They plan to send the 750-ton Chiyoda Maru No. 5 to grounds not previously explored or exploited to study the abundance of fin and sei whales. One objective reportedly is to determine the reliability of whale stock assessments.

According to scientists, the whale stocks are being seriously depleted and face extinction if not protected. Based on their findings, the international whale catch quota has been reduced over the years. For the 21st Antarctic whaling season, December 1966-April 1967, the quota was slashed by 1,000 blue-whale units (BWU), from 4,500 BWUs to 3,500 BWUs. Following a September meeting in Tokyo to discuss quotas, the three active nations, Japan, Norway, and the Soviet Union, reached a provisional one-year accord on quotas: Japan--1,633 (46.66 percent); Soviet Union--1,067 (30.48 percent), and Norway--800 (22.86 percent).

The Japanese press reported that the Japanese whaling industry feels that present stock assessments, based only on catch data, may not necessarily be correct because there may exist unexploited resources. If unexploited resources are found by the survey vessel, it would mean that the assessment of stock conditions should be reevaluated.

The Chiyoda Maru was scheduled to depart Yokohama November 18 and conduct the survey from December 11, 1966 to March 20, 1967. Principal grounds are Area 3 East and Areas 5 and 6. (Suisan Keizai Shimbun, September 12, 1966, and other sources.)

* * * * *

EXPLORES FOR SALMON IN
CHUKCHI SEA WITH POOR RESULTS

The 200-ton Japanese fishing vessel Dairin Maru No. 8, sent to the Chukchi Sea this summer to explore for salmon, returned to Tokyo September 4 after an 80-day trip. Fifty-two days were spent on the fishing grounds. She gill-netted about 25,000 salm-

on, almost all chums, averaging 3.2 kilograms (7 lbs.) per fish. The total catch was about 80 metric tons (176,000 lbs.). Most of the catch was salted; six tons were frozen. The catch per shackle of net ranged from 0.1-1.5 fish, with average of 0.8.

Because of the Arctic nights--darkness did not set in--it was difficult to select best time to set and retrieve gear. Fishing in unfamiliar waters during only slightly over 50 days, personnel were not able to clearly determine salmon migration routes and sea conditions and got only a rough picture of conditions on the fishing grounds.

The Japanese firm was reported to have suffered a fairly large financial loss but intends to send a vessel to the Chukchi Sea again next year. It plans to study this year's data carefully and compare them with salmon landings made at nearby Alaskan shore installations--to determine relations, if any, to timing of the runs and migration routes. (Suisan Tsushin, September 17, 1966.)

* * * * *

SET NEW EXPORT PRICES FOR SALMON

The Japan Canned Salmon-Crab Sales Company announced on September 16 new export prices for canned "tidbit" red, silver, and king salmon:

Product	Can and Case Size	Price/Case for Shipments to:			
		Europe ^{1/}		Australia ^{2/}	
		New	Old	New	Old
Red . . .	1/2 -lb. 48's	16.65	16.25	123	121/3
Red . . .	1/4 -lb. 96's	21.20	20.80	156	153
Red . . .	1/4 -lb. 48's	10.75	10.55	79/3	77/9
Silver . .	1/2 -lb. 48's	14.75	13.35	109/6	99/6
King . . .	1/2 -lb. 48's	14.25	12.80	105/9	95/9

^{1/}F.o.b. price. Excludes shipments to United Kingdom.
^{2/}C. & f. price.
^{3/}One shilling = 12 pence = approx. US\$0.14. One pence = US\$0.0117.

Shipments must be loaded on board carriers by December 31, 1966. However, trading firms contracting for over 10,000 cases of "tidbit" reds will have until February 28, 1967, to ship their products--but must ship over 70 percent of their contracted quantities by December 31. The last day for submitting buy offers was September 26.

Japan (Contd.):

Completion of the coming sale is expected to cost about clean out this year's pack. (Suisan Tsushin, September 19, 1966.)

* * * * *

FISHERY RELATIONS WITH SOUTH KOREA MAY BE REEXAMINED

The advance of South Korea into the North Pacific salmon and trawl fishery and the recent entry of her vessels into Japanese ports to load catches have reportedly strengthened the view of Japanese fishery circles that the Government should reexamine its thinking about South Korea's expansion program. The program is based largely on Japanese assistance. They maintain the Government's curb on port entry by South Korean vessels is only temporary and will not effectively check the expansion.

A trade journal editorial noted disunity in the industry, the absence of long-range planning concerning South Korea, and urged formulation of a basic long-term policy to regulate vessel and gear exports, imports of fishery products from South Korea, and creation of joint ventures with her.

The Japanese Embassy in Seoul reported that South Korea's present fleet numbers about 50,000 vessels totaling 190,000 gross tons. Of these, about 7,000 vessels (14 percent) are motorized; the remaining 86 percent are unpowered craft. Vessels under 5 gross tons comprise 86 percent of the fleet; 66 percent are under 2 tons.

South Korea, with Japan's aid, plans to increase tonnage within next five years by about 100,000 gross tons to 300,000 tons. Japanese interests fear this would inevitably lead to competition in offshore fisheries. (Nato Shimbun, September 13, 1966, and other sources.)

* * * * *

PLANS TO BUILD FLOATING SUPPLY BASE FOR TUNA FLEET

The Japan National Federation of Tuna Fishermen's Cooperative Associations (NIKKATSUREN) is planning to construct a 100-gross-ton "floating supply base" to provide fuel, provisions, and medical serv-

ice to tuna vessels at sea. Now in the blueprint stage, the vessel will cost about 280 million yen (US\$777,778) and have a 21-man crew, plus accommodations for 2 NIKKATSUREN representatives, 1 doctor, and 2 patients. It is scheduled to begin operations in 1968, initially in the eastern Pacific Ocean.

This venture is another attempt by the Federation to improve management of tuna vessel operations to offset growing trend among coastal fishing countries to extend fishing zones and restrict use of ports. In 1963 and 1964, NIKKATSUREN successfully operated chartered tankers to conduct high-seas refueling operations in the Pacific Ocean. (Suisan Keizai Shimbun, September 15, 1966, and other sources.)

* * * * *

FROZEN TUNA EXPORT PRICES UP

The Japanese frozen tuna export market was becoming firm in mid-September 1966--compared to preceding weeks--with prices for both yellowfin and albacore up about \$30 a short ton. Trading firms contracted for delivery of frozen tuna to California at the following prices: yellowfin, gilled and gutted US\$470-475 a short ton c.i.f.; albacore, round \$520 a short ton c.i.f. (Suisan Tsushin, Sept. 30, 1966.)

* * * * *

CANNED MACKEREL EXPORTS, JANUARY-JULY 1966

During January-July 1966, the equivalent of 67,203 cases of 1-lb. tall 48's, natural, and 1,068,556 cases of 1/2-lb. 48's (Japanese can size--flat No. 2 48's), other than natural, were cleared for export, according to the Ministry of Finance. In first-half 1965, exports of 1-lb. tall natural totaled 400,999 cases, and of 1/2-lb. other than natural 418,507 cases. Of total exports, the equivalent of 3,219 cases of 1-lb. tall natural, and 14,003 cases of 1/2-lb. other than natural, were exported to the United States. (Suisan Tsushin, September 13, 1966.)



Communist China

NEW RESEARCH VESSEL BUILT

Communist China's first marine research vessel was built early in 1966. The 2,500-gross-ton vessel Tung Fang Hung ("East is Red") is equipped for biological, hydrological, meteorological, geological, physical, and chemical marine research. She has specialized laboratories and modern oceanographic equipment.

The Chinese have entered the tuna fisheries with a vessel bought from Japan. They have begun whaling with a specialized vessel built at home. It is also reported that a plant for manufacturing echo-sounders is in operation.

Though available data are sketchy and hard to interpret, there is little doubt that Communist China's high-seas fisheries are in the take-off stage of development. They are about where the Soviet fisheries were in early 1950s.



South Korea

SETS UP MARINE PRODUCTS OFFICE

The Ministry of Agriculture and Forestry showed the nation's interest in promoting fishing interests by elevating the former Fisheries Bureau to a semiautonomous Office of Marine Products. The new office is headed by O Chong-kun, who was given vice ministerial rank. The former bureau had 6 sections; the new office has 3 bureaus (10 sections) and an office of planning. (U.S. Embassy, Seoul, September 2, 1966.)



North Vietnam

FISHERMEN TRAIN IN U.S.S.R.

On or about August 22, 1966, North Vietnamese fishery students arrived at Nakhodka, the largest fishing port in the Soviet Far East, to study modern fishing techniques and processing technology. The visit may be related to increased technical aid recently promised North Vietnam by the Soviet Government. In

early 1966, the Soviets delivered 3 medium freezer trawlers under the U.S.S.R.-North Vietnam technical assistance program.



CANADA

FIRST-HALF 1966 LANDINGS ARE DOWN BUT VALUE IS UP

Landings during first-half 1966 totaled 808.2 million pounds valued at C\$52.2 million, compared with 834.2 million pounds worth C\$51.2 million during the same period of 1965.

Sea fisheries landings (including Newfoundland) during June 1966 amounted to 242.2 million pounds, an ex-vessel value of C\$18.6 million compared to 238.0 million pounds valued at C\$19.1 million in June 1965. The figures come from the June 1966 "Monthly Review of Canadian Fisheries Statistics."

Landings and ex-vessel values of principal species were:

Species	June			
	Landings		Value	
	1966	1965	1966	1965
	. (1,000 Lbs.)		. (1,000 C\$)	
Atlantic Coast:				
Cod	87,443	83,047	3,709	3,228
Haddock	6,688	6,170	478	419
Pollock	2,989	5,044	119	182
Flounder and sole ..	24,639	27,286	800	884
Herring	28,870	25,810	471	344
Swordfish	217	800	117	336
Lobsters	7,320	10,932	4,151	6,580
Scallops	1,528	1,772	578	981
Pacific Coast:				
Halibut	8,210	6,547	2,890	2,126
Herring	18,579	19,539	307	262
Salmon	5,716	3,679	2,383	1,596

Species	Jan. - June			
	Landings		Value	
	1966	1965	1966	1965
	. (1,000 Lbs.)		. (1,000 C\$)	
Atlantic Coast:				
Cod	219,877	208,093	9,764	8,273
Haddock	65,085	51,892	4,648	3,399
Pollock	18,353	26,346	723	925
Flounder and sole ..	88,874	75,356	3,016	2,505
Herring	108,066	93,025	1,500	1,178
Swordfish	627	1,346	378	613
Lobsters	20,127	23,489	11,754	14,789
Scallops	7,527	6,751	2,906	3,845
Pacific Coast:				
Halibut	14,929	15,619	5,145	4,747
Herring	137,517	221,205	2,299	2,904
Salmon	7,510	5,384	3,290	2,487

Canada (Contd.):

NEWFOUNDLAND BAIT SERVICE EXPANDS

The Newfoundland Bait Service is being further improved by the extension of refrigerated bait storage facilities to serve areas receiving this service, the consolidation of existing storage units, and revised prices. The Bait Service, provided by the Federal Government under terms of Newfoundland's

1949 union with Canada, supplies bait to fishermen in areas not adequately served by private enterprise. The service supplies Newfoundland and Labrador fishermen with close to 5 million pounds of bait annually through 19 depots and 38 holding units, 8 of which are going into operation for the first time this year. The government also operates the Arctic, which delivers bait supplies from depots to units in fishing areas.



DIET TRICKS WITH FISH STICKS

It takes no special tricks to fix fish sticks. Just follow the simple directions on the package. There's no trick to getting your family to eat them either; fish sticks have been an American favorite for years. The trick comes when you top piping hot fish sticks with a cold caper sauce to present a dieter's dream. Four fish sticks with a generous serving of this different, easy-to-do topping amount to about 240 calories.



This quick-fix seafood slimmer, Fish Caper, will delight the dieter, fascinate the fastidious, and haul in a netful of compliments for the clever cook.

Fish Caper is from a new, 16 page, full-color, diet booklet just released by the United States Department of the Interior's Bureau of Commercial Fisheries. This publication, Seafood Slimmers, is available for 25¢ from the Superintendent of Documents, Washington, D. C. 20402.

FISH CAPER

- 24 frozen fried fish sticks
- ($\frac{3}{4}$ to $1\frac{1}{4}$ ounces each)

Caper Sauce

Place frozen fried fish sticks in a single layer on a greased cookie sheet, 15 x 12 inches. Bake in a hot oven, 400° F., for 15 to 20 minutes or until heated through and crisp. Serve with Caper Sauce. Serves 6.

Caper Sauce

- | | |
|------------------------------|----------------------------------|
| 1 cup yogurt | 1 tablespoon chopped parsley |
| 2 tablespoons chopped capers | 2 teaspoons instant minced onion |
| 1 tablespoon lemon juice | 1 teaspoon grated lemon rind |

Combine all ingredients and mix thoroughly. Chill. Makes approximately $1\frac{1}{4}$ cups of sauce.

LATIN & SOUTH AMERICA

Mexico

SHRIMP PRODUCTION IMPROVES

Shrimp production continued at good level during second quarter of 1966. Although the catches in May and June 1966 were slightly below those months in 1965, landings in April were so much greater than last April's that they brought the quarter's total up to 7.1 percent above 1965. Following the 4.3-percent increase over 1965 during the first quarter, 1966 looks like a fairly good year.

According to preliminary figures of Department of Fisheries, total shrimp catches--weights are as landed, including heads-on, heads-off, etc.--for the second quarter were:

Month	1966	1965
	... (Metric Tons) ...	
April	2,545.3	1,962.5
May	2,447.3	2,491.8
June	2,285.6	2,340.9
Total	7,278.2	6,795.2

During first-half 1966, Mexico shipped 11 percent more shrimp to the United States than during first-half 1965. Shipments during January-June 1966 were slightly over 28 million pounds, compared to 25.2 million pounds in 1965 (mostly heads-off weight).

The industry at Mazatlan was looking forward to a somewhat better year when the trawling season opened on September 15. Although production last season was below peak years, "nearly everyone made a little money," one operator said. The reason was high prices. These averaged 25 percent higher than before.

The entire West Coast fleet was ready when the season opened. As the fishermen say, "The first week tells the story. If it is good, the whole season will be good."

The fishery in the lagoons opened somewhat inauspiciously on September 1. Although conditions are excellent in most lagoons, with plenty of water from heavy and timely rains, the shrimp taken during the first week were unexpectedly small. They ran 70 to 80 to the pound, with some as small as 90, instead of the usual 40 to 60. However, preseason sampling indicated that

many larger shrimp left the lagoons for the ocean early, where they should be available to the fleet.

Last year's contract between boat owners and crews who are members of cooperatives continues in effect, so fishing will not be delayed by negotiations that kept the industry in turmoil last year. Most individual owners who believed the terms unfavorable sold their boats to the cooperatives; the co-ops now own about 90 percent of the Mazatlan fleet. The former boat owners still own the processing plants, which they operate only as a service for packaging and freezing the cooperatives' shrimp.

Throughout the shrimp industry, the real profit opportunities lie in vessel ownership. Last year, with very high prices and fair catches (average 55,000 pounds a boat), the cooperative owners showed a profit. A drop in either catches or prices would be a severe test of the cooperative system's ability to survive. On the other hand, an excellent season would test the willingness of the co-ops to reinvest earnings in new vessels and better equipment to better meet hard times, if and when they come.

Unofficial reports say new contract will run for 3 years and give fishermen moderate benefits to meet increased living costs. (Fisheries Attaché, Mexico D. F., September 15, 1966.)

* * * * *

CURRENT EXPORT POTENTIAL OF MEXICAN FISHERY PRODUCTS

Extensive exports of canned sardines to the United States are not likely for 3 reasons: the only species eligible for sale as sardine in the United States under Food and Drug Administration regulations has become very scarce; by far the greatest part of production is ineligible species; the increased domestic demand for "sardines" absorbs the entire production of existing canneries.

Exports of frozen tuna have decreased in recent years largely because the growing domestic demand for canned tuna has resulted in packing almost everything the Mexican fleet catches. Only an unlikely large increase

Memo (Contd.):

in the fleet and catch will produce any appreciable surplus for export. Two products capable of larger export--and whose production the Mexican industry is trying to increase--are spiny lobsters and frozen fish fillets. (Fisheries Attaché, U. S. Embassy, Mexico, D. F., August 20, 1966.)

* * * * *

ENSENADA'S FISHERMEN ARE HAVING GOOD YEAR

Ensenada, center of Baja California's fishing industry, is having a successful year. Baja California is Mexico's third largest fish-producing state by value and first by volume. The first quarter of 1966 for Ensenada's fishermen was followed by an excellent second quarter that insures a successful 1966.

Ensenada has the largest fish cannery in Mexico. During first-half 1966, it increased its production capability by 25 percent; it expects further increases during the second half as domestic and foreign demand continues to exceed production.

The spiny lobster catch for the season ended in March was excellent. Prospects for next season appear to be even better due to the continuing introduction of more efficient production methods and closer surveillance to prohibit illegal catches during the off-season. Several United States companies have already begun bidding for the 1967 catch at prices averaging US\$.09 a pound higher than last year.

An Ensenada group has been considering entering the high-seas fishing business. The possibility of Yugoslavia providing 5 vessels was discussed with a Yugoslav trade mission. The Mexican Federal Government is reportedly ready to allocate 75,000,000 pesos (US\$6,000,000) to buy fishing vessels. (United States Consulate, Tijuana.)

* * * * *

MAZATLAN HAS SHIPBOARD FISH PLANT

Mazatlan boat owner is highly pleased with his trial installation of a miniature fish meal plant aboard a former shrimp trawler. The plant, of Mexican design, is both simple and lightweight. It weighs about 1 1/2 tons and

is mounted on deck. It consists essentially of a grinder and hot-air dryer with an auxiliary diesel engine. The fish are tossed into a hopper leading into the grinder. Within a few seconds, the ground fish is passed in front of a hot-air blast and carried by a blower to sacks. The regular fishing crew can operate the plant.

On a 24-hour basis, with a continual flow of raw fish, the plant can handle 20 metric tons. Under present working conditions, the plant processes up to 15 tons of raw fish in a 20-hour day. One ton of meal is recovered per 5 tons of raw fish and usual production is 3 tons per day.

In September 1966, the shipboard plant was handling sea catfish (bagre) almost entirely. Although this fish is rather dry, the plant was able to recover about 5 percent oil. The meal was 61 percent protein--comparing rather favorably with the 65 to 70 percent of the top-grade Peruvian anchovy meal with which it will have to compete. Because Mazatlan's climate is humid, the meal must be run through the dryer twice to reduce it to moisture content of 7 or 8 percent. The second drying was being done aboardship, but the owner planned to install an auxiliary dryer in his shrimp-freezing plant to eliminate the extra shipboard work.

As the fish go directly from trawl nets to hopper, they are extremely fresh; in fact some of the sea catfish are still alive. So there is no toxicity problem. Ten-day trips are usual because the vessel has a carrying capacity of 30 tons of meal.

The operator has so far produced about 100 metric tons of fish meal and has not tried to sell any. The crew will share in the sales proceeds, whatever the price will be; meanwhile, it is being paid on the basis of estimated price. Whether this operation becomes a financial success remains uncertain.

Another shipboard installation was reported ready to operate at Mazatlan. That vessel will not fish, but it will circulate among the shrimp fleet to pick up scrap fish caught incidentally with the shrimp. The plant itself is said to be larger and it is aboard a larger vessel. (U. S. Embassy, Mexico, September 10, 1966.)



Chile

FISH MEAL AND OIL PRODUCTION SOAR

From January through July 1966, total production of fish meal was 151,356 tons--double the total annual production of 1965 (70,580 tons) and nearly equal to the annual production of 1964 (156,638 tons).

The anchovy catch in northern Chile during July 1966 reached 91,781 metric tons--compared to 12,100 tons in 1965 and 36,800 tons in 1964. The port of Arica handled 75 percent; Iquique 25 percent. The catch from January to July 1966 was 834,700 tons of anchovy, compared to 281,259 tons in 1965.

Arica continues as the most active area. The fishing zones are located between 2 and 30 miles in Corazones (facing the port) and Chacalluta. Part of the Iquique fleet also operated there. In Iquique, the fishing sites most used were: Punta Quera, Chipana, Caleta Buena, San Marcos, and Punta Pichalo. During July, the 7 Arica plants operated for average of 17 working days; Iquique's 18 plants operated for average of 9 days. Two plants in Pisagua, 3 in Iquique, and 1 in Tocopilla did not operate.

Production of fish meal from anchovy during July 1966 was 17,600 metric tons, compared with 2,190 tons in 1965 and 6,980 tons in 1964. The average yield during July was 1 ton of meal to 5.2 tons of anchovy.

Prices paid for anchovy in July fluctuated between E^o 52 (US\$12.50) and E^o 56 (US\$13.50) a metric ton.

Fish meal production in July from species other than anchovy--hake, sardine, and jack mackerel--was 2,000 metric tons. It brought 1966 production of this type of fish meal to 17,700 tons for the first 7 months, compared to 14,600 tons in 1965 during same period.

Oil produced during July was 1,670 tons, compared with 42 tons in 1965 and 900 tons in July 1964. The average yield of oil was 1.8 percent. Production of fish oil during the first 7 months of 1966 was 16,164 tons, compared to 5,838 tons during same 1965 period. (U. S. Embassy, Santiago, September 7, 1966.)

* * * * *

HER RICHES ARE JUST OFF COASTS-- BUT FAR FROM MARKETS

Chile covers the southwest coast of South America, reaching all the way into the Antarctic waters of the Magellen straits. It is 2,600 miles long and averages 150 miles wide. The southernmost thousand miles are a maze of channels and islands similar to the fjords of Norway. These extend for more than 700 miles and end in windswept Chilean Patagonia.

The land's configuration is vitally important to Latin America's future. The very fragmentation of the coast in the south provides one of the greatest, relatively undeveloped fishing grounds on earth. And in the very near future it will have to be exploited. Dr. Hernán Santa Cruz, Assistant Director-General for Latin American Affairs, United Nations Food and Agriculture Organization (FAO) has said: "In the next 20 years this region's population will increase from 200 to 360 million... the total demand for agricultural products will have doubled by 1980." However, there is an alternative to this immense and very nearly impossible growth in agriculture--fish. That is why officials of the Freedom from Hunger Campaign (FFHC) have begun to look to Southern Chile.

But Latin America's "fisheries alternative" poses a problem. Although the region's fisheries production rose nearly 10 times between 1952 and 1962--compared with 68 percent in the rest of the world--most of the fish were not caught for human consumption. Almost all protein wrested from the sea was used in fish meal for animal feed and was exported to North American and European countries to earn considerable foreign exchange. According to one scientist's estimate, George Borstrom's, four-fifths of the protein produced by fisheries along the North and South American coasts is being used for animal feeding in North America and Western Europe, which consume 2 to 3 times as much protein as Chile and Peru.

The Anchovy Dominates Production

The explanation is that anchovy accounts for most of the fish produced in western Latin America. The anchovy is almost never used for anything but poultry and stock food in the form of fish meal. The producing countries

Chile (Contd.):

could not possibly use it all, even if they wanted to. However, the coasts of Latin America--especially western Latin America--are extremely rich in edible seafood. To eliminate the present protein consumption deficit by 1980 in all of Latin America, it would be necessary to increase fish production by 2,000,000 metric tons edible weight, or about 4,000,000 tons of fish, round weight.

These figures caused the California Freedom from Hunger Committee to consider means of assisting the small fishermen of Puto Montt, Chile, and neighboring Chiloe and Anglo islands at the beginning of the vast southern archipelago.

FHC observers quickly noticed that troubles in the fishing centers just outside Puto Montt did not come from any lack of fish. There is great variety there and many shellfish, including oysters, scallops, sea urchins, hard clams, soft shell clams, razor clams, king crabs, lobsters, giant mussels, araucos, or giant acornshell. But with poor equipment it was sometimes difficult to catch them and, above all, to preserve and ship them. No one yet has been able to estimate the hundreds of thousands of tons of fish that could be taken from these incredibly rich southern waters without impoverishing them. But today there are no facilities for preserving or shipping them properly to distant markets. One FAO report estimates that in some seasons probably half the catch becomes spoiled and is thrown back into the sea. Realizing this, the California Committee of the Freedom from Hunger Campaign decided to establish a Fisheries Rehabilitation Project after the disastrous 1960 earthquake in Southern Chile.

Rehabilitation Project Started

The Committee has donated diving suits for the oyster fishermen and has studied the possibility of erecting salting and drying sheds and an ice plant. The difficulties in carrying out any ambitious crash programs are in some ways peculiar to the region in that the region owes its rich sea life to its remoteness and the corresponding near-impossibility of getting fish to any sizable market. Drying sheds, or tunnels, for instance, are not needed primarily to reduce the fish's weight for shipping--not to conserve fish, which can be done almost as effectively with salt.



Fig. 1 - Diver collecting oysters in waters off Southern Chile. They are so plentiful that diver can fill a basket in a few minutes.

(Photo by S. Larrain)



Fig. 2 - Shellfish are held in the recurring tides to keep them alive before they are marketed by a fishermen's cooperative in Southern Chile.

(Photo by S. Larrain)

FFHC officials envisage the final stage of the project as the building of the first ice plant. All these projects would use local labor and thus would assist the economy.

While the project is still modest, some idea of its possible future importance can be seen in the fact that even now on the west

Chile (Contd.):



Fig. 3 - Fisherman of Southern Chile selling his catch directly from his boat at low tide. (Photo by S. Larrain)

coast of Latin America--in Chile, Peru, and Ecuador--one-fifth of the people's total animal protein consumption comes from fish. In Ecuador, 40 percent more than the present meat production would be necessary to replace fish consumption--and this is considered far too little. Preserving and shipping fish for human food from the one region in western Latin America with a great supply can have important long-range effects.

Long Haul May Bring Disaster

Apart from shellfish, the sea in the immediate vicinity of Puerto Montt is especially rich in hake. This species may weigh as much as 10 or 15 pounds each, and may sell for as little as 5 cents per fish. Yet when the fish has changed hands once or twice, and is no longer fresh, it may cost as much as 50 cents. If it ever gets to a market as far away as Santiago, its price is "sky-high." Two

years ago, during Holy Week, the cooperative sent railway cars loaded with fish 600 miles up to Santiago, but lost the whole shipment when the cars were shunted to a siding and arrived 3 weeks late. Generally, the cooperative manages to get 150 to 180 boxes of fish into Santiago 3 times a week in trucks.

Much the same situation prevails with the shellfish, which are plentiful in the Puerto Montt region. Shellfish may live out of water for some time, preferably on beaches washed regularly by tides. But they die in fresh water. They must be kept cool, and so salt-water ice should be used when packing to minimize losses. Without the necessary plant, this is impossible--because the shellfish have to be packed tightly in boxes and rushed to markets hundreds of miles away in the hope that they will survive. So, in Santiago, a dozen shellfish on a plate cost as much as an entire box weighing 10 or 15 pounds in Puerto Montt. The causes of the bottleneck are always the same: lack of facilities for drying and icing, or lack of transportation, and often both.

Puerto Montt's Cooperative

The cooperative in Puerto Montt is fairly well equipped with boats. It has 70 small ones, mostly rowboats, and 11 larger craft with 8.5 horsepower engines. It also rents a 30-gross-ton privately-owned boat, and 5 more of 15 to 18 gross tons. It is already doing quite well, though it could do much better. The Government finances a quarter of the housing, and in a few years the cooperative expects to erect a large new school. Although no school exists as yet, only 8 percent of the families are illiterate.

The cooperatives receive other material advantages from the Government. They pay only half of the regular export tax, and they are allowed to import foreign equipment, especially machinery, free of duty. Loans may also be obtained from the Corporacion de Fomento de la Produccion, but these are generally used to buy foreign equipment and have to be repaid in dollars. Average earnings per member within the cooperative come to about \$30 a month. It is a relatively small wage, but with cheap housing and plenty to eat--including all the fish they can use--the families live fairly well. United Nations officials have learned that a good way to contact the fishermen is through their cooperative.

(Contd.):

Even projects of modest dimensions can have important effects. One day, the great archipelago of Southern Chile will become a reservoir of protein for itself and its neighbors. Then Latin Americans will eat fish on four days than Friday. (FAO, June 3, 1966.)

* * * * *

REVIEW OF THE FISHING FLEET

At the end of 1965, the fishing fleet included 7,130 units of which 430 units belonged to the industrial fishery and were larger than 10 gross registered tons (GRT); 680 units were small open boats of less than 10 GRT used in traditional fishing. The total value of the fleet was estimated at \$47.8; of this, about 86 percent, or \$41.0 million, belonged to the primary industrial fleet.

Most of the fleet is represented by vessels whose length ranges between 12.5 and 25 meters (41-92 feet). The most frequent length is 20 to 22.5 meters (65.6-73.8 feet) and includes 170 units (or about 40 percent) of the total. The industrial fleet consists of vessels of 10 to 550 GRT, with the majority between 60 and 120 GRT.

Of the industrial fleet, about 300 vessels use purse-seine gear, the most common fishing gear along the Chilean coast. Seventy-two percent of these vessels fished anchovy, 20 percent sardines, and only about 3 percent tuna and bonito. The second major fishing method is trawling, used by 70 units. The third is the harpoon used for whale hunting.

The fleet is concentrated in 4 ports: Arica, Iquique, Valparaiso, and Talcahuano. Based on tonnage and number of vessels, Iquique is the principal fishing port, Valparaiso is second.

Over 300 units of the existing fleet were constructed in national shipyards; the remaining 125 units abroad. About 69 percent of the total fleet is made of steel and 31 percent of wood. The construction of the new steel fleet of 180 vessels began in 1962 at 5 national shipyards in Iquique, Antofagasta, San Antonio, and Valdivia.

Sixty-eight percent of the fleet is 5 or less years old: less than 2 years--27 per-

cent; 2 to 5 years--41 percent; 6 to 10 years--14 percent; over 10 years--18 percent.

Based on tonnage, the annual increase rate of the fleet during the past 5 years was: 1961--8 percent; 1962--16 percent; 1963--34 percent; 1964--78 percent; 1965--15 percent. From 1961-1965, the anchovy fleet increased 5.9 times; the sardine fleet 1.8 times; the fleet trawling for shrimp and spiny lobster 2 times. The number of trawlers for hake fishing and vessels used for whale-hunting remained the same. (U. S. Embassy, Santiago.)



Ecuador

FISHERY INDUSTRY GREW IN APRIL-JUNE 1966

The fishing and fish packing industries were among segments of the economy reporting significant developments during the second quarter of 1966.

A new subsidiary of a U. S. firm began exporting frozen tuna from Manta. While it builds its freezing plant, the subsidiary will freeze the tuna on board a vessel it will acquire. Another firm in Manta applied for classification under the Industrial Development Law to build a plant for packaging fish fillets, smoked fish, anchovies, and other products.

A small freezing plant of the fishermen's cooperative opened in Esmeraldas. Another firm, with American investment capital, was planning to operate in the same town. In Guayaquil, a firm with American capital planned to install a tuna cannery.

The Director of the Institute of Fisheries recently predicted that the industry would one day surpass the banana industry as the leading export earner. To hasten that day, the government in July 1966 granted duty-free entry of fishing supplies and equipment. (U. S. Embassy, Quito, July 29, 1966.)

* * * * *

FISHING INDUSTRY FREED FROM SOME IMPORT DUTIES

A government decree frees local fishing companies from all import duties and munic-

Ecuador (Contd.):

ipal taxes for the importation of fishing equipment on List I (essential imports). The decree also reduces income taxes on all earnings used to buy new, or improve existing, equipment. The new legislation affects only the "extractive" phase of the industry and grants no special privileges to processing or marketing operations. Equipment acquired under the new law may not be sold or rented without authorization of the Ministry of Industries and Commerce. (U. S. Embassy, Quito, July 26, 1966.)



Brazil

DRAFTS REVISION OF BASIC FISHERIES LAW

President Castello Branco in late August 1966 forwarded to the Brazilian Congress the draft of a basic fisheries law for action within 60 days. Modifications must be approved by both the Chamber of Deputies and the Senate within that period or it automatically becomes law. It was drawn up by the Superintendency for Development of Fisheries (SUDEPE) in consultation with representatives of interested Government Ministries (Agriculture, Navy, Industry and Commerce, Planning and Finance) and technicians of the Superintendency for Development of the Northeast (SUDENE), and the Food and Agriculture Organization of the United Nations. Because of this sponsorship, the bill is expected to prove less controversial than other draft bills prepared by SUDEPE in recent years. None of these reached the Congress.

The proposed legislation revokes the obsolete 1938 Fishing Code and incorporates many provisions of Decree No. 58696, June 22, 1966. The decree classified fishing and fish processing as a basic industry and provided incentives for developing commercial fisheries operations. It is expected to remain in effect to complement the new law.

There are provisions in the draft bill that hold major interest to United States and other foreign investors. Some provisions stipulate that foreign vessels may undertake commercial fishing activities in Brazilian waters when registered and authorized by

SUDEPE and also specifically authorized by executive decree. The bill establishes Brazilian fisheries jurisdiction over inland and territorial waters and the high seas and Continental Shelf in accordance with international treaties and conventions ratified by Brazil. It is expected that the Brazilian Government will shortly ratify four Geneva Conventions: on Fishing and Conservation, High Seas, Continental Shelf, and on Territorial Seas.

Among other important modifications of existing legislation: (a) duly authorized foreigners may engage in professional fishing, but Brazilian nationals shall continue to predominate in crew composition; (b) the operation of fishing vessels and processing industries will be controlled to accelerate development; (c) sets up a practicable system to protect fisheries resources; (d) establishes incentives for developing fisheries industry: exemption for 5 years from publication date of law from import, consumption, and other federal taxes on fishing boats, equipment, and spare parts when imported by firms with development projects approved by SUDEPE. The same benefits cover imports of machinery and equipment to manufacture fishing nets and similar products. Brazilian fishing firms would be exempted from income tax for five consecutive years on income reinvested in development projects. Finally, investments in the form of subscription to the capital of fishing companies with approved projects would also be exempt from income tax through 1971. (U. S. Embassy, Rio de Janeiro, September 6, 1966.)

* * * * *

CATFISH FOR SALE

According to a reliable source, the Regional Delegation of Superintendency for Development of Fisheries (SUDEPE) in Belem reports large supplies of catfish available for export from that area. The Regional Delegation understands that a number of United States firms are interested in importing catfish and will be glad to put inquirers in touch with Belem exporters. The species available are "Piramutaba" and "Mapara."

Inquiries to: Delegacia da Sudepe, Rua Dr. Assis, 62, Belem, Para, Brazil. (U. S. Embassy, Rio de Janeiro, September 8, 1966.)

Panama**NEW DECREE REGULATES
FISH MEAL INDUSTRY**

On July 20, 1966, President Marco A. Robles signed Decree Law No. 168 designed to insure orderly development of fish meal industry. The decree establishes 5 fishing zones off Pacific Coast and stipulates that vessels of not more than 2 fish meal plants, including existing plants, may fish in any one zone. The decree limits the number of fishing vessels that can be used by Panama's 2 existing plants. It also specifies that the size of new plants and fleets must be approved by the Ministry of Agriculture, Commerce and Industries. Final approval for plants will be contingent on conduct of exploratory purse-seine operations to determine maximum extent of fisheries--and to prove that anchovy and thread herring stocks will not be overfished as a result of proposed fishing operations. Exploratory fishing must be conducted at expense of applicants for licenses. Licensing fees, fines, and other aspects of fisheries regulations are described.

Apparently, the decree was prepared at request of Panama's Director of Fisheries. It is based on recommendations of members of the Inter-American Tropical Tuna Commission (IATTC) and the United Nations Food and Agricultural Organization (FAO). (U. S. Embassy, Panama, August 11, 1966.)

**Panama****FISH MEAL PRODUCTION
PROSPECTS GOOD**

On September 1, 1966, anchovy fishing started up again after a three-month closed season to conserve the resource. Many of the country's 140 plants and estimated 1,800 fishing vessels were not quite ready. To make matters worse, rough seas kept the vessels in harbor on the northern and central coasts. In the south, fishing was reported excellent from the standpoint of catches and size of fish. The forecast is for excellent fishing at least through December 1966, though producers still complain about the prospect of increased costs. (U. S. Embassy, Panama, September 11, 1966.)

**Foreign Fishing Off U. S. Coasts,
September 1966****IN NORTHWEST ATLANTIC**

For the third consecutive month, poor weather conditions on Georges Bank and vicinity limited aerial observations of foreign fishing.

Soviet: In September, there was no significant change in the estimated 65 to 70 Soviet fishing and support vessels on Georges Bank. Slightly over 100 Soviet vessels were reported a year ago, but they included many more smaller vessels than were present this year.

Sixty-six individual vessels sighted in September were identified as 31 factory stern trawlers, 18 large refrigerated side trawlers, 8 medium side trawlers, 5 refrigerated fish transports, one factory base ship, one fuel and water carrier, and one tug.

The fleet, while scattered, was generally divided into two groups: 30 or more vessels (mostly large side trawlers and processing ships) were fishing in a 15- to 20-mile area about 40 miles south of Nantucket Island (south of Cape Cod, Massachusetts). Heavy to moderate catches of fish appeared to be primarily whiting and incidental quantities of red hake. An equal number of vessels was widely dispersed over a 60-mile area along the northern slopes and shoals of Georges Bank (90 to 120 miles east of Cape Cod). Moderate catches visible on deck were primarily herring. The Soviet Union seems to be using more vessels in the herring fishery this year. In 1965, its herring catch on Georges Bank was limited to 36,000 metric tons.

Romanian: One factory stern trawler was sighted among the Soviet vessels on Georges Bank. Two such vessels were observed in 1965.

Polish: One stern trawler was sighted on Georges Bank. Two additional stern trawlers were fishing between Georges Bank and eastern Nova Scotia areas.

Early in October, the Polish stern trawler Pegaz entered Boston harbor to obtain emergency medical aid for a crewman.

East German: Early in September, a large freezer stern trawler began to fish on Georges Bank and was joined in mid-month by another sistership. Both vessels belong to the Bertold Brecht class of stern trawlers (3,000 gross tons) and were built in 1965 in East German shipyards. This is the first time since 1962 that the East Germans have fished on Georges Bank. Like the Soviet Union in the early 1960s, East Germany has begun to expand its fisheries into the southern ICNAF area, and even in the southern Atlantic.

Cuban: One fishing vessel came to Georges Bank late in September. Purchased in Spain for the expanding cod fisheries, the 1,100-gross-ton vessel is based in Havana.

Japanese: The Japanese Overseas Trawlers Association announced in mid-September that its members would jointly send a 1,000-ton trawler to explore for new fishing grounds in the Atlantic Ocean off the east coasts of North and South America. It did not say when the vessel would begin operations.

OFF MID-ATLANTIC

Soviet: No fishing vessels sighted off the U. S. mid-Atlantic coast during September except a few in transit headed north or south.

IN GULF OF MEXICO

Soviet: No fishing vessels were sighted near U. S. coasts in September. Two medium freezer trawlers (600 gross tons, class Maiak) were sighted by the U. S. Coast Guard: one on September 12 in the Old Bahama Channel (north of Central Cuba); the other on September 14 near Anguilla Cays in the Santaren Channel (160 miles south of Miami). No information is available on whether they fished or were simply in transit.

A sizable fleet (about 15 vessels) continued fishing for herring-like fish on the Campeche Banks off Yucatan. No details are available.

Cuban: In September, no fishing vessels were sighted near U. S. coasts; 17 of them (probably including duplications) were sighted hand-lining and trapping in the Santaren Channel, the Old Bahama Channel, and off Camaguey Archipelago. Species taken were not identified.

Mexican: The September 17, 1966, issue of Mexico City News reported that "at least

28 Mexican shrimpers are already operating in international waters off the Texas coast, according to the Governor of Campeche State. Although in early August shrimp trawlers were sighted fishing off Texas, none was sighted in September.

OFF ALASKA

Japanese: The usual departure of many fleets during the fall of each year reduced the number vessels engaged in the fisheries off Alaska to about 25 by the end of September.

In early September, another small trawler joined the Gulf of Alaska ocean perch fishing fleet. By month's end, however, at least 3 factory trawlers had departed for Japan; this reduced the Gulf fleet to no more than 10 trawlers. Operations of the trawlers and a few supporting reefers were concentrated on Albatross Bank southwest of Kodiak Island.

The perch fishing fleet of one factoryship and 10 trawlers had been operating in the western Aleutians, but it moved to the area west of the Pribilof Islands in early September. That fleet was scheduled to depart for Japan by mid-September.

One king crab factoryship achieved her catch quota of 90,533 cases of king crab and sailed for Japan on September 10. The second king crab fleet of 1 factoryship and 5 trawlers continued fishing north of Unimak Island. That fleet, delayed about a month in getting to the grounds, was expected to continue operations into October to reach the assigned quota of 94,467 cases.

The 4 fish-meal factoryships and their 10 trawlers left for Japan during September.

The shrimp fishing fleet, which consistently operated north of the Pribilof Islands, ceased operations and departed in early September.

The two remaining Japanese whaling fleets left the Alaskan area by mid-September for Japan.

Korean: The fisheries training ship Baek Kyung Ho called at Kodiak for reprovisioning in early September. Personnel said they were returning to Pusan after leaving Kodiak. The vessel stopped in Tokyo on September 25.

Soviet: A gradual decline (first reported in July 1966) in the number of Soviet fishing vessels sighted off Alaska continued during September. Only 30 to 35 vessels were sighted by the end of the month. By mid-month, the level of Alaska ocean perch effort was reduced to a few factory stern trawlers fishing south-west of Chirikof Island.

Perch fishing along the Aleutian Islands continued throughout September. About 15 large factory stern trawlers (serviced by a few refrigerated fish transports and other support ships) were scattered from the Fox Islands to the western Aleutians, but fished mainly south of Umnak Pass (in the Segoum Pass region) and in the shoal areas west of Kiska Island. One haul of 4,000-5,000 pounds of Pacific ocean perch was observed aboard a Soviet vessel in late September near Umnak Pass.

The shrimp fishery near the Shumagin Islands was expanded during September. Reported in August, that fishery attracted about 10 medium freezer trawlers and 2 refrigerated vessels. Observers noted one haul aboard a vessel of about 400-500 pounds of shrimp (presumably mostly pink shrimp).

Trawling fleets discontinued their operations off U. S. coasts during the month.

PACIFIC NORTHWEST
(Washington and Oregon)

Soviet: The number of fishing and support vessels (about 80) off the Pacific Northwest did not change from August to September. The thirds were medium side trawlers and the rest stern trawlers and support vessels. The number of large stern factory trawlers, reduced in August and early September to no more than 6, increased during the latter part of September. By the month's end, about 12 stern trawlers operated in scattered formations from Cape Flattery (Wash.) to Heceta Head (Oreg.). This was a considerable increase in total fishing effort because a stern factory trawler fishes an average 6-7 times more than a medium side trawler during the same period.

In the first week of September, most vessels moved from the Oregon coast north to the waters off southern Washington, where they concentrated near the Columbia River (11 vessels) and off Grays Harbor (60 vessels). They apparently moved to where fish

were concentrating and worked until the schools were fished out or scattered. Then the fleet moved to new locations. By mid-month, almost half the fleet returned to Oregon grounds.

By September 20, 1966, the fleet was divided into two major groups: 34 vessels (including 6 stern trawlers) were fishing for hake off Oregon's coast between Heceta Head and Yaquina Head, or about 12 to 40 miles west of Newport; another 48 vessels, also taking primarily hake, were fishing off Washington's coast between Grays Harbor and Destruction Island. One pair of mid-water trawls and 2 factory stern trawlers were observed in the second group. This was the fleet deployment also at the end of the month--except that on September 30, the fleet off Oregon consisted of 40 vessels, most of which came south from the fishing grounds off Washington.

The species landed during September were primarily Pacific hake. However, BCF agents saw on occasion ocean perch and various rockfish (orange, green, and others) mixed with hake catches--but they comprised only a small part of the total catch.

Early in September, the personnel carrier Smolnii was sighted off the Pacific Northwest. She brought replacement crews from the Soviet Union. The Soviets use personnel carriers to transport replacement crews because they believe this method is cheaper than having a fishing vessel return to port to rotate crews.

The fishery research vessel Ogon conducted studies, mostly off Washington, throughout the month.

On September 25, 1966, a gear conflict occurred near Destruction Island between the U. S. troller Mermaid and a Soviet trawler. In darkness, the Soviet trawler crossed Mermaid's bow and picked up her anchor line with its trawl. Towing the much smaller Mermaid for half an hour, the Soviet captain did not see the Mermaid's signals to stop. The latter finally worked herself free but lost her anchor. The case was reported to U. S. Coast Guard authorities in Seattle.

