



International

ATLANTIC FISHERIES REGULATION

PLANS FOR NORTHEAST ATLANTIC FISHERIES (POLICING) CONFERENCE:
 A Northeast Atlantic Fisheries (Policing) Conference is tentatively scheduled for the fall of 1965. A number of interested countries have been invited to send fisheries experts to London on April 6, 1965, to frame an agenda for the forthcoming conference. Invitations to the preliminary meeting in April were sent by the host country (Great Britain) to France, Germany, Italy, the Netherlands, Belgium, Denmark, Norway, Portugal, Sweden, Iceland, Ireland, Spain, the U.S.S.R., Finland, Canada, the United States, and Japan.

The British invitation stems from a resolution adopted at the European Fisheries Conference (held in London, December 1963 through March 1964) which called upon the United Kingdom to convene a conference to draw up rules for the policing of fishing in the Northeast Atlantic. (United States Embassy London, February 5, 1965.)

INTERNATIONAL COMMISSION FOR THE NORTHWEST ATLANTIC FISHERIES

15TH ANNUAL MEETING TO BE HELD AT HALIFAX:

The 15th Annual Meeting of the International Commission for the Northwest Atlantic Fisheries (ICNAF) will be held June 7-12, 1965, at Halifax, Nova Scotia (Canada), at the Sea Scotian Hotel.

Various preliminary meetings will be held prior to the Annual Meeting. They are: (1) Fishery Assessment Subcommittee, May 28-29; (2) Herring and Other Pelagic Fish Subcommittee, May 29; (3) Research and Statistics Committee, May 31-June 4; (4) Scientific Advisers to Panels, June 5.

See Commercial Fisheries Review, August 1964 p. 49.

INTERNATIONAL PACIFIC HALIBUT COMMISSION

NORTH PACIFIC HALIBUT REGULATIONS FOR 1965:

Fishing for halibut will begin May 1, 1965, at 6 p.m. for the most important North Pacific areas (Areas 1, 2, and 3A), except in the Bering Sea (Areas 3B Northeast, 3B Northwest, and Area 3B North Triangle), and waters west of Area 3A not including the Bering Sea (Area 3B South), according to the recommendation of the International Pacific Halibut Commission to the Governments of the United States and Canada for the 1965 fishing season. The regulations this year contained several important changes from 1964.



Fresh halibut being unloaded with a cargo net from the hold of a halibut fishing vessel at Seattle, Wash.

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March 25, was the opening date for fishing in Area 3B Northeast and Area 3B Northwest. In 1964, the area designated as Area 3B North (now divided into 2 areas--3B Northeast and 3B Northwest) was opened to fishing on the same date. This year fishing in Area 3B North Triangle began on April 4, 10 days later than the opening date of March 25 last year. Area 3B South was opened to fishing on April 12 this year, 6 days later than last year's opening date on April 6. The opening date of May 1 for Areas 1, 2, and 3A is the same as last year.

The opening and closing of the various regulatory areas shall be 6 p.m. Pacific Standard Time of the date indicated, except in Areas 3B North Triangle, 3B Northeast, and 3B Northwest where the opening shall be 3 p.m. and the closing 6 p.m. local time.

Fishing areas shall be: Area 1--south of Willapa Bay, Washington; Area 2--between Willapa Bay and Cape Spencer, Alaska; Area 3A--between Cape Spencer and Shumagin Islands; Area 3B South--waters west of Area 3A, not including Bering Sea; Area 3B North Triangle--waters between a line from Unimak Pass to the Pribilof Islands north of the Aleutian Islands and east of 170° W. longitude; Area 3B Northeast--waters in Bering Sea east of 175° W. longitude and outside of Area 3B North Triangle; Area 3B Northwest--all the remaining waters in Bering Sea.

In Area 1 the fishing season, without catch limit, shall end at the same time as that in Area 2. (Last year Area 1 was open to September 15, the date on which Area 2 closed.)

In Area 2 the fishing season shall end at the time of attainment of the catch limit of 23 million pounds or on September 15, whichever is earlier. This is 2 million pounds less than last year's quota of 25 million pounds, and is 5 million pounds less than the 28-million-pound quota in 1963. The catch limit in Area 2 in 1964 was not attained by September 15 when the season closed. As of September 2, the Area 2 catch was only 17.6 million pounds. The final catch was about 5 million pounds less than the quota.

In Area 3A the fishing season shall end at the time of attainment of a catch limit of 34 million pounds or on October 15, whichever is earlier. The catch limit is the same as

last year. In 1964 Area 3A closed on August 19.

In Area 3B South the fishing season shall end at the time of attainment of a catch limit of 4 million pounds or on October 15, whichever is earlier (the closing date last year was October 15 and the catch limit was the same).

In Area 3B Northeast the fishing season, without catch limit, shall end on June 20, and in Area 3B Northwest the fishing season, also without catch limit, shall end on November 15. Last year fishing in the area designated as 3B North ended on October 15.

In Area 3B North Triangle the fishing season shall end on April 11 after a fishing period of 7 days. Last year Area 3B North Triangle had a catch limit of 6,393,340 pounds or closure on October 15, whichever was earlier. That catch limit was to be shared among Canada, the United States, and Japan. Fishing in Area 3B North Triangle was very poor in 1964 with only 1.6 million pounds taken by United States and Canadian fishermen as of September 2. In 1964 fishing ended October 15 and only about one-third of the quota had been caught.

The Commission in 1965 will provide 10 days' notice of closure in Areas 1 and 2, 18 days' notice of closure in Area 3A, and at least 18 days' notice of closure in Area 3B South.

The Commission's recommendations for the 1965 season were announced on January 21 at the conclusion of its 41st annual meeting at Vancouver, B.C., Canada, with Chairman Harold E. Crowther of Washington, D.C. presiding.

The Halibut Commission is responsible to Canada and the United States for the investigation and regulation of the halibut fishery of the northern Pacific Ocean and Bering Sea. Its function is the development of the halibut stocks to levels that will permit the maximum sustained yield. Its decisions regarding regulation are based on scientific findings of its staff.

A public session was held on January 19 at which time the research conducted by the scientific staff and this past year's fishery were reviewed. On January 21, a meeting was held with the Conference Board, which consists of representatives of fishermen's unions

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vessel owners, and with representatives of dealer organizations, at which time the Commission received various industry proposals for regulation of the fishery in 1965.

During executive sessions the Commission dealt with administrative matters and approved a research program for 1965 which will include several fish tagging operations in Hecate Strait, and in the Gulf of Alaska and Bering Sea. In addition to those field activities, monitoring of the effects of foreign fishing on the stocks of Pacific halibut will also be greatly increased.

The Commission announced that the 1966 annual meeting will take place at Seattle, Wash. The date was not specified. Dr. William M. Sprules of Ottawa, Ontario, was elected chairman and Harold E. Crowther, vice-chairman, for the ensuing year.

Since in the past the United States and Canadian Governments have accepted the recommendations of the Commission without changes, it is fairly certain that the 1965 regulations as recommended by the Commission will be approved by the two Governments.

See Commercial Fisheries Review, May 1964 p. 43.

INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION

REGULATIONS FOR 1965 SOCKEYE AND PINK SALMON FISHERY NORTH PACIFIC:

The tentative suggestions for regulatory control of the 1965 sockeye and pink salmon fishery in North Pacific Convention waters, submitted to the fishing industry on December 11, 1964, were reconsidered on the basis of suggestions made by the Advisory Committee at a meeting of the International Pacific Salmon Fisheries Commission on January 29, 1965.

Action taken by the Commission in view of the Committee's recommendations is as follows:

The closure to all net fishing in both Canadian and United States Convention waters lying westerly of the Angeles Point-William Head line originally recommended to be "June 23 (6:00 a.m.) to July 31" was changed to read "June 27 to July 31."

An official policy was adopted on the weekly fishing time for gill nets and purse seines in those

Canadian Convention waters lying westerly of the William Head-Angeles Point line: namely, that gill nets would start first each week for the fishing season of 1965 as originally recommended on December 11, 1964. Purse seines would start first in 1966 with the weekly starting time for each gear alternating each year thereafter.

3. Commencing September 5 the fishing time for gill nets in Canadian Convention waters lying westerly of the William Head-Angeles Point line was changed to read 7:00 p.m. to 7:00 a.m. and purse seines to 7:00 a.m. to 7:00 p.m.

4. To achieve conformity in the precedence of fishing time for purse seines, reef nets, and gill nets in United States Convention waters, the scheduled period for purse seines and reef nets starting first each week was changed from "June 27 to July 31" to "June 27 to August 7." Commencing August 8 and extending to the end of Commission controls gill nets would start first for each weekly fishing period.

5. The date for relinquishing control in any section of Convention waters will be reconsidered at appropriate times throughout the fishing season.

CANADIAN CONVENTION WATERS:

West of William Head-Angeles Point Line and East of Bonilla-Tatoosh Line:

- June 27 to July 31 - Closed to all net fishing.
- August 1 to August 14 - Gill nets open daily 6:00 p.m. to 6:00 a.m. Sunday afternoon to Tuesday morning of each week
- Purse seines open daily 6:00 a.m. to 6:00 p.m. Monday and Tuesday of each week
- August 15 to September 4 - Gill nets open daily 6:00 p.m. to 6:00 a.m. Sunday afternoon to Wednesday morning of each week.
- Purse seines open daily 6:00 a.m. to 6:00 p.m. Monday, Tuesday, and Wednesday of each week.
- September 5 to September 18 - Gill nets open daily 7:00 p.m. to 7:00 a.m. Sunday afternoon to Wednesday morning of each week.
- Purse seines open daily 7:00 a.m. to 7:00 p.m. Monday, Tuesday, and Wednesday of each week.
- August 13 to September 19 - Closed to commercial hook-and-line fishing on Saturday and Sunday of each week.
- Relinquish control.

East of William Head-Angeles Point Line Including Areas 17, 18, That Portion of Area 19 Lying Easterly of the Referenced Line and District No. I:

- June 27 to August 28 - Open 8:00 a.m. Monday to 8:00 a.m. Wednesday of each week.

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August 29 to
October 9 Open 8:00 a.m. Monday to
8:00 a.m. Tuesday of each
week except for the week
commencing September 12
when all net fishing will be
prohibited.

October 10 - Relinquish control.

Special Troll Restrictions:

Fishing for sockeye or pink salmon other than by angling or trolling for the purpose of personal consumption and not for sale or barter shall be prohibited in these Convention waters of Canada (the waters of Howe Sound excepted), lying easterly and inside of a straight line projected from Gower Point at the westerly entrance to Howe Sound to Thrasher Rock light, thence in a straight line to Salamanca Point on the southerly end of Galiano Island, thence in a straight line to east Point on Saturna Island, thence in a straight line towards Point Roberts light to the intersection with the International Boundary line, thence following the International Boundary line to its intersection with the mainland from the 22nd day of August to the 9th day of October, both dates inclusive, except at the times that net fishing other than with spring salmon nets may be permitted within that area.

UNITED STATES CONVENTION WATERS:

West of Angeles Point-William Head Line and East of Bonilla-Tatoosh Line:

June 27 to July 31 - Closed to all net fishing.

August 1 to
August 7 - Gill nets open daily 7:00 p.m.
to 9:00 a.m.
Monday afternoon to Wednesday
morning of each week.

- Purse seines open daily 5:00
a.m. to 9:00 p.m.
Monday and Tuesday of each
week

August 8 to
August 28 - Gill nets open daily 7:00 p.m.
to 9:00 a.m.
Sunday afternoon to Tuesday
morning of each week

- Purse seines open daily 5:00
a.m. to 9:00 p.m.
Monday and Tuesday of each
week.

August 29 to
September 18 - Gill nets open daily 7:00 p.m.
to 9:00 a.m.
Sunday afternoon to Wednesday
morning of each week.

- Purse seines open daily 5:00
a.m. to 9:00 p.m.
Monday, Tuesday, and Wed-
nesday of each week.

August 13 to
September 13 - Closed to commercial troll-
ing on Saturday and Sunday
of each week.

September 19 - Relinquish control.

East of Angeles Point-William Head Line:

June 27 to
August 7 - Gill nets open daily 7:00 p.m.
to 9:00 a.m.

Monday afternoon to Wednes-
day morning of each week.

- Purse seines and reef nets
open daily 5:00 a.m. to 9:00
p.m. Monday and Tuesday
of each week.

August 8 to
August 28

- Gill nets open daily 7:00 p.m.
to 9:00 a.m.
Sunday afternoon to Tuesday
morning of each week.

- Purse seines and reef nets
open daily 5:00 a.m. to 9:00
p.m. Monday and Tuesday
of each week.

August 29 to
October 2

- Gill nets open daily 7:00 p.m.
to 9:00 a.m.
Sunday afternoon to Wednes-
day morning of each week.

- Purse seines and reef nets
open daily 5:00 a.m. to 9:00
p.m. Monday, Tuesday, and
Wednesday of each week

September 5 to
September 18

- Waters westerly of a straight
line projected true south
from Lily Point to the inter-
section with the Internation-
al Boundary line will be
closed to all net fishing.

September 19 to
October 2

- Waters westerly of a straight
line projected from Iwer-
sen's dock on Point Robert
towards Georgina light at
Active Pass to the intersec-
tion with the International
Boundary line will be closed
to all net fishing.

October 3 - Relinquish control.

Notes: (1) Times are based on Pacific Daylight Saving Time.

(2) See Commercial Fisheries Review, March 1965 p. 60; April 1964
p. 45.

KING CRAB

U. S.-SOVIET AGREEMENT ON
KING CRAB FISHING ON U. S.
CONTINENTAL SHELF OF NORTH PACIFIC

An agreement on fishing for king crab on the U. S. Continental Shelf in the North Pacific was signed by the United States and the Soviet Union on February 5, 1965, at Washington, D.C. Signing of the agreement concluded several weeks of consultations between the two countries.

The two countries agreed that in accordance with the provisions of the United Nations Convention on the Continental Shelf, the king crab is a resource of the Continental Shelf over which the coastal nation has sovereign rights for the purposes of exploration and exploitation. The consultations took into account that the Soviet Union has maintained a king crab fishery for several years on the United

International (Contd.):

ates Continental Shelf in the eastern Bering Sea and in other areas of the Northeastern Pacific, and that United States fishermen have present only a small fishery for king crab in the eastern Bering Sea. Because of those factors, the United States agreed that Soviet fishermen may continue to fish in the eastern Bering Sea for two years at a reduced level catch. Soviet fishermen will not fish for king crab in other areas of the United States Continental Shelf.

The agreement also provides for conservation measures to be applied to the crab fishermen of both countries in the eastern Bering Sea for continued and intensified scientific study of the king crab resource there, and for enforcement of the terms of the agreement. The agreement specifies a substantial sub-area in which only crab pots, the type of gear used by United States fishermen, will be used for commercial crab fishing. The two Governments will hold further consultations prior to the end of the two-year period.

The desirability of consultation with other countries prior to implementation of the U.S. Continental Shelf provisions of Public Law 88-308 (so-called Bartlett Act) was pointed out by President Johnson in his statement on July 20, 1964, when he signed the law. Consultations were held between the United States and Japan in fall 1964 regarding the Japanese king crab fishery in the eastern Bering Sea, and an interim two-year agreement was signed on November 25, 1964.

See Commercial Fisheries Review, February 1965 p. 51.

FISH MEAL

WORLD PRODUCTION, NOVEMBER 1964:

World fish meal production in November 1964 was up about 43 percent from the same month in 1963 due mainly to a sharp increase in Peruvian output. (Editor's Note: The Peruvian Government is reported to be con-

Country	Nov.		Jan.-Nov.	
	1964	1963	1964	1963
. (Metric Tons).				
Canada	5,971	8,338	50,594	72,921
Denmark	8,881	5,559	104,526	92,729
France	1,100	1,100	12,100	12,100
German Fed. Rep.	5,239	4,775	68,784	68,567
Netherlands	1/	700	2/6,700	6,300
Spain	I/	2,875	1/	21,687
Sweden	I,005	783	5,978	5,957
United Kingdom	5,286	4,894	69,093	68,651
United States	8,093	12,079	3/183,768	207,458
Angola	5,241	2,990	52,716	24,384
Iceland	3,177	750	118,486	79,017
Norway	13,099	12,076	175,729	121,983
Peru	181,673	116,167	1,371,235	1,019,604
So. Afr. (incl. S.-W. Afr.)	9,700	4,269	260,628	237,341
Belgium	375	375	4,125	4,125
Chile	9,641	3,698	134,620	79,575
Morocco	350	1/	3/18,450	1/
Total	258,831	181,428	2,638,532	2,122,399

1/Data not available
 2/Data available only for Jan.-Oct. 1964.
 3/Revised.
 Source: International Association of Fish Meal Manufacturers.
 Note: Japan does not report fish meal production to the International Association of Fish Meal Manufacturers at present.

sidering the introduction of catch limits to conserve fish resources.)

World fish meal production in the first 11 months of 1964 was considerably above that in the same period of 1963. The increase was due largely to expanded production in Peru which accounted for about 52 percent of world output during January-November 1964. Higher production during January-November 1964 was also reported in Norway, South Africa, Chile, Iceland, Angola, and Denmark. The increase was partly offset by lower production in Canada and the United States.

MARINE OIL

WORLD PRODUCTION, 1960-1964 AND FORECAST 1965:

World production of marine oils in 1964 was up slightly from 1963, but below output in 1961 and 1962. A steady decline in baleen whale oil production since 1961 has not been

World Marine Oil Production^{1/}, Average 1955-59, Annual 1960-1964, Forecast 1965

Item	Forecast 1965	2/ 1964	1963	1962	1961	1960	Average 1955-59
. (1,000 Short Tons)							
Baleen whale oil	230	250	295	390	428	418	427
Min whale oil	155	170	149	130	120	122	119
Land fish-liver oil	735	710	655	750	669	511	428
Total	1,120	1,130	1,099	1,270	1,217	1,051	974

Data are estimates based on official statistics of foreign governments, other foreign source materials, reports of U. S. Agricultural Attaches and Foreign Service Officers, and other sources.
 Preliminary.

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offset by the modest increase in sperm oil production. Fish oil output has held fairly steady since 1961 with production averaging close to 700,000 short tons annually.

Total production of marine oils in 1965 is expected to be about the same as in 1964. World productive capacity for fish oil increased slightly in 1964. This could result in somewhat higher output of fish oil in 1965 if catch results and yields are favorable. Any increase in fish oil, however, will probably be offset by lower production of whale oil in the Antarctic. (U. S. Department of Agriculture, World Agricultural Production and Trade, January 1965.)

Note: See Commercial Fisheries Review, October 1964 p. 46.

EUROPEAN ECONOMIC COMMUNITY

FISH LANDING RIGHTS IN MEMBER COUNTRIES:

A new regulation of the European Economic Community (EEC) allows its fishermen to land fish in any member country by obtaining a certificate known as D. D. 5. The "D. D. 5" regulation came into force November 1, 1964.

French fishermen claim the new regulation is a threat to their minimum price structure, and the French Government has requested the postponement of the regulation.

In reply to the French opposition, spokesman for EEC Headquarters in Brussels said, "The right to land fish in member countries has existed ever since the Treaty of Rome came into effect, but the new regulation insures that minimum prices maintained in the various countries will be recognized." (The Irish Skipper, December 1964.)

Note: See Commercial Fisheries Review, December 1964 p. 93.

LATIN AMERICAN FREE TRADE ASSOCIATION

FOURTH ANNUAL CONFERENCE:

The Fourth Annual Conference of the Latin American Free Trade Association (LAFTA) was held late in 1964 at Bogota, Colombia. The Conference resulted in various tariff cuts by individual countries and also produced the group's first common schedule. The common schedule (products which will be completely free of duties in intra-LAFTA trade by 1973) was signed by all members of LAFTA, except Uruguay. An escape clause mechanism was created for agricultural imports within

LAFTA after 1973. The common schedule includes 113 products which account for slightly more than 25 percent of present intra-LAFTA trade.

The Conference also approved a resolution on goals other than tariff reduction. The resolution sets forth some ambitious programs for LAFTA including a study for the establishment of a credit system for LAFTA trade, and a LAFTA policy on the location of new industry.

Some of the proposals presented at the Conference, such as automatic linear tariff reductions and LAFTA payments system, were not seriously considered by the negotiators but simply passed on to the permanent organization for study.

A meeting of the Foreign Ministers of the LAFTA countries, accompanied by other ministers in charge of LAFTA affairs, is scheduled to take place some time between April 1 and August 31, 1965. The Fifth Annual LAFTA Conference will be held in Montevideo, Uruguay, from October 19 to December 4, 1965. (International Commerce, January 25, 1965.)

FOOD AND AGRICULTURE ORGANIZATION

SYMPOSIUM ON INCREASING FISH CONSUMPTION HELD AT 11TH SESSION OF INDO-PACIFIC FISHERIES COUNCIL:

A symposium on "Increasing Fish Consumption by Improved Handling and Distribution" was held during the 11th Session of the Indo-Pacific Fisheries Council (IPFC) at Kuala Lumpur, Malaysia, October 16-31, 1964.

Some 37 papers on 9 main topics were given at the symposium which among others included: (1) technology and economics of fish production; (2) handling and icing fresh fish aboard vessels and at shore; (3) use of preservatives to extend keeping time of fresh fish; (4) marketing, cooperatives, etc.; (5) inspection and quality control; and (6) consumer education.

Conclusions arrived at from the symposium were that working papers and discussions have provided ample material on the present state of research done in the fields considered, as well as on practical developments in the region covered. But what is urgently required, it was felt, is the application of the knowledge that is available, and taking into consideration the

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specific influence of local conditions, social structure, consumer demand, etc.

It was proposed that a Working Party on Fresh Fish Preservation be established and the member Governments compile information on fresh fish handling and distribution for consideration by the Working Party. (FC Current Affairs Bulletin No. 41, December 1964.)

See Commercial Fisheries Review, March 1965 p. 64.

INTERNATIONAL INDIAN OCEAN EXPEDITION

FISHERY OBSERVATIONS DURING RESEARCH VESSEL "ANTON BRUUN" CRUISE OFF EAST AFRICA:

During September-November 1964, the oceanographic research vessel Anton Bruun operated off the east coast of Africa as part of the International Indian Ocean Expedition. Observations of a U. S. Bureau of Commercial Fisheries scientist who participated in the cruise follow:

In Durban harbor (South Africa) in late September 1964, there were 3 long-line vessels (2 of Taiwan and 1 of Japanese registry) handling frozen tuna for storage and transport for a Japanese company. The 2 vessels from Taiwan were older than the one in Japan but all had facilities for blast-freezing their catches and for separate frozen fish storage. All had conveyor-belt arrangements for transfer of gear from the working area forward to the storage area in the stern.

A great amount of fishing is done out of Durban. In September some whales were beached. They were towed from catcher boats to a marine railway near the mouth of the harbor where they were unloaded and moved (on flat cars) to a plant where they are

efficiently disassembled. One new product being produced from the whales is something like a beef bouillon cube.

From the time the Anton Bruun left Durban on September 25 until arrival at Mombasa on November 9, no commercial fishing vessels larger than a rowing skiff were seen other than one of the long-line vessels previously seen in Durban Harbor.

Fishing trials during this cruise did not produce much to indicate the presence of exploitable fishery resources. But there were indications of the presence of good concentrations of penaeid shrimp and "European" lobsters (Nephrops) in depths of 200-250 fathoms off Delagoa Bay (Lourenco Marques) Mozambique. A catch of very large shrimp (Peneus) was made off Formosa Bay, Kenya, in shallower water

Note: See Commercial Fisheries Review, September 1964 p. 16.

UNITED NATIONS

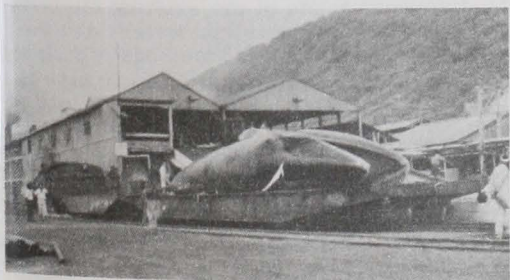
SPECIAL FUND ASSISTS FISHERY RESEARCH IN LOW-INCOME COUNTRIES:

Assisting research into the seas' resources and to the development of fishing industries is only a small part of the wide range of activities of the United Nations Special Fund. Such assistance is designed to accelerate economic progress throughout the world.

World food production has increased only slowly in recent years and has not been able to keep pace with the rapid increase in the world's population. If further and increasingly widespread malnutrition and hunger in the low-income countries is to be prevented, new sources of food must be developed. To feed their growing populations, nations are turning more and more to the sea. Because the sea is a potential economic resource of great magnitude, the United Nations Special Fund has been helping Governments exploit the resources and wealth within their seas. This is done under that organization's program of assistance by providing surveys of natural resources, applied research, and training. The total cost of the program is now more than \$1 billion, which represents a partnership investment with funds provided through the voluntary contributions of 112 Governments and by the recipient countries themselves.

The Special Fund is presently assisting 16 ocean and inland fisheries projects at a total cost of \$39 million. Eight of those projects are already under way; 8 more projects have been authorized by the Governing Council of the Special Fund and work on them is about to commence. All of those projects are being executed for the Special Fund by the Food and Agriculture Organization (FAO) of the United Nations.

FISHERY EXPANSION IN LATIN AMERICA: The fishery industries of Latin America's Pacific Coast have rapidly expanded in recent years. Chile, Peru, and Ecuador are all countries that have in the past depended heavily on exports of a single major product. In spite of long coastlines, those countries have had no tradition as seafaring nations. In the last five years,



Shows a finback whale being transported by flat car to a Durban processing plant.

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however, all this has changed and the economy of the three countries has been transformed by a great "rush to the sea."

PERU: To a great extent, the lead in this development was given by Peru's fishing industry, and in each case the process of transforming traditional patterns and methods into modern techniques is being accomplished by similar means. At the beginning of major economic development of the fishing industry it was realized that it would be necessary to set up a special controlling institute to supervise the development of those fisheries and to gather information by research that could then be analyzed and published as routine statistics.

The situation in Peru is unique in the unusually heavy dependence of the fishing industry on anchoveta, the raw material for fish meal production which represents 98 percent of Peru's fishery catch. With an export value in 1962 of \$100 million, anchoveta are Peru's largest foreign currency earner. That fishery is such that even a slight change in the abundance or the distribution of fish could violently shake the structure of the whole industry. This could be brought about by factors so slight as an infinitesimal change in the temperature of the water, or a small movement of the dominant offshore currents. The unique feature of the \$1.7 million Peruvian Sea Institute, which was established in 1960 and is being assisted over a four-year period by the Special Fund, is that it was built not to develop an industry, but to study the biological basis of an already established industry and extend the potential of its development.

The Institute's research is being carried out with two vessels, the *Unanue* and the *Explorador*. The biological and oceanographic information that has been collected is then analyzed by six laboratories. The work undertaken by the Institute recently took on an added importance in view of a marked decline in anchoveta catches. Information that was obtained while investigating this catch decrease showed that seasonal changes in the trade-wind pattern affected the upwelling of nutrient-rich waters and as a result, the concentration of marine organisms. The need for systematic information on seasonal variations in the Peruvian Sea-region was emphasized. The continuing reports of the Institute are proving of great value in interpreting sea conditions and fishing prospects.

CHILE: With its extremely long coastline stretching 2,600 miles from the tropics to the Antarctic, Chile has access to abundant fish resources, capable of supporting a large fishery industry. Although the development and utilization of those resources is important for the nourishment of a population of 8 million, expansion and new investment have hitherto been hampered due to: (1) a lack of detailed biological and economic knowledge, (2) lack of modern vessels and fishing gear, and (3) inadequate methods of catching, processing, and marketing.

The \$4.5 million Fisheries Development Institute, which began operations in November 1963, is providing the Government of Chile with the technical basis for accelerated development within the current ten-year development plan. Studies are being made of the nature, distribution, and density of marine resources, the improvement of fishing methods and the economics of exploitation. The Special Fund is assisting the Institute over the first four years of operation. During those

years, emphasis is given to studies of the anchovy fishery in Northern Chile because of its importance to the fish meal industry and of the "merluza" in Southern Chile in view of the possibility of substantial exports of that fish species.

Two laboratories have been established in Northern Chile. One is being used for quality control based on chemical analysis of fish meal and oil. The other laboratory, located in one of the fish meal factories, is investigating methods of utilizing stickwater. Another laboratory is scheduled to be built at the Institute's headquarters in Santiago.

ECUADOR: The first real direct exploration of the waters off Ecuador's coast is being promoted by the \$1.3 million National Fishery Institute which was established in 1960, and is being assisted over a four-year period by the Special Fund. That Institute has conducted extensive studies on the distribution and density of marine resources and the best means of exploiting those resources. Among a wide range of activities the Institute is sponsoring has been the improvement of the quality of shrimp exports by individual rather than bulk freezing, and the use of dried and salted fish.

REGIONAL PROGRESS: Apart from their national work the three Institutes are also taking part in a joint oceanographic program which also includes Colombia, Panama, and the Inter-American Tropical Tuna Commission. This consists of a study of the periodic warming of coastal waters known as the "El Niño Phenomenon," which is thought to have a considerable effect on the distribution of fish in the Pacific.

NIGERIA: Like the Pacific, the Eastern Atlantic Ocean has wide areas of underexploited fishing grounds. In Nigeria, for example, half of the estimated 100,000 metric tons of fish that is consumed annually is imported. The present inadequacy of marketing arrangements has resulted in a shortage of fish in the interior markets of that country. There is an urgent need to improve production through modern fishing methods and through raising the quality of the fish catch.

The Special Fund is assisting the Governments of the western and mid-western regions of Nigeria with a four-year survey of their available fishery resources. The cost of the survey is \$829,000 and is being carried out in two phases. The first phase will be devoted to the collection of basic information to determine the most economic way of catching fish and then distribution of the catch from a central collecting point. The second phase will involve demonstration and pilot schemes in both inland and ocean fishing.

The general fisheries survey was completed in June 1964. Studies were made of the existing methods and equipment used in both the inland waters and the trawl fishery in Lagos. The present methods of fish handling, storing, marketing, and distribution were also appraised. A report is to be prepared on that survey. At the same time in Lagos and Avietore, demonstrations and training were given by experts in the construction and operation of various types of fish nets and of fish smoke-drying.

ZAMBIA AND RHODESIA: In the Central African area the Governments of Zambia and Rhodesia are giving their support over four years to the \$1 million Lake Kariba Fisheries Research Institute. With the aim of fostering the sound development of a fishing industry and ancillary activities in the Lake Kariba area, the

International (Contd.):

Institute has since October 1963 been conducting a physio-chemical and biological survey of the Lake. Studies have been made both of methods of fishing and the types of fish and their size. When those studies are completed, the surveys will provide valuable data for the development of a major inland fishing area.

INDIA: The present diet of the great majority of the population of India is too heavily dependent on the single staple product of grain. The development of a modern fishing industry would go a good part of the way towards remedying such a deficiency. With this end in view, the Government of India established in 1958 a committee to review the training of fisheries officers. The Special Fund is assisting that Government for three years with the establishment of a \$1.3 million Fisheries Training Institute in Bombay, to train District Fishing Officers for both the Central and State Governments, and managers for the fishing industry. Through the work of the Institute, leaders are being provided who are trained in the techniques of development and exploiting inland and marine fisheries.

Good results have already been achieved by the Institute. The Mysore State Government has been so impressed by what has been achieved in the first training courses that it has ruled that recruits for supervisory posts in its fisheries department must have a diploma from the Fisheries Institute. It is believed that other States will shortly make similar rulings.

KOREA: The fishing industry of Korea was built up after 1952 with extensive United Nations assistance. For the most part, the industry still is a small operation and present fishing grounds are all near the coast. If Korea is to take a place among the modern large-scale fishing countries, "offshore" fishing will have to be developed. Surveys indicate that this will be possible over the next ten years.

The Korean fishing industry will directly benefit from a \$2.26 million Deep-Sea Fishing Center in Pusan which has just been established by the Government and which is being supported by the Special Fund during the first five years. This Center will become the basis of the country's fishery training system and will offer technical training both ashore and at sea, to graduates of colleges and other vocational schools as well as the fishermen. It is hoped that the trainee output of the Center will be between 50 and 75 graduates a year, a number that should be immediately absorbed by the industry.

OTHER SPECIAL FUND FISHERY PROJECTS: In addition to other areas, Special Fund fishery projects have been approved and will shortly be carried out. In the Caribbean a major investigation of fishing techniques and marketing is being assisted by the Special Fund for four years at a cost of \$2.2 million. That project will, it is hoped, lead to the expansion of fisheries through the exploitation of fish species that are presently untouched. Deep-sea fishing in the Philippines, which in spite of considerable offshore resources is present heavily dependent upon imports of fish, will be promoted through studies and training that will be carried out on several experimental fishing vessels with Special Fund assistance over five years at a cost of \$2 million.

Another six fishery development projects in the new program of 66 requests for Special Fund assistance have recently been approved by the 13th Session of the Governing Council of the Special Fund. In Taiwan, the Special Fund is giving assistance over a four-year period to the establishment of a \$7.5 million Institute at Taipei, which will work for the modernization of the shipping industry and will train cadet officers for the merchant marine service.

A \$2.2 million fishery research unit in Ghana will be supported during its first five years and will carry out the studies required for forming the basis of a rapid increase in fishery production from available resources. A survey of the fisheries in East Pakistan will also be made over a five-year period at a cost of \$1.6 million which will assess the potential for increased production, and develop a core of competent and skilled fishermen.

The development of the fishing industry in Argentina will be assisted over five years at a cost of \$3 million through exploratory and experimental fishing conducted with associated biological and hydrographic studies. The Special Fund will also assist Governments with two regional projects: (1) one costing \$4 million designed to assist for six years the strengthening of fishery administrations in Central America and to improve processing and marketing methods; (2) the other aimed at the development and management of fresh-water fisheries in Kenya, Uganda, and the United Republic of Tanzania over a five-year period at a total cost of \$1.3 million. (United Nations, New York.)



Australia

TUNA SURVEY OFF TASMANIA PLANNED FOR 1965:

Hopes are high that the planned joint tuna searching program off Tasmania in 1965 will further stimulate that Australian State's fishing industry. The survey will be undertaken between January and June by two chartered tuna vessels supported by a spotting aircraft.

A joint statement by the Commonwealth Minister for Primary Industry and the Tasmanian Minister for Agriculture said that the cost of the survey would be shared equally by the Commonwealth (from the Fisheries Development Trust Account) and the State.

With the reopening of canning factories in Tasmania, the processing of tuna (should the fishery become established in waters adjacent to Tasmania), barracouta, and Australian salmon should no longer present problems.

Other major developments in the Tasmanian fishing industry during 1964 included: (1)

Australia (Contd.):

The extension of scallop dredging to new areas off the east coast, leading to an extension of the season; (2) the construction of 8 new vessels for the State's spiny lobster fishery (those replace vessels which have transferred to Victoria, and others sold to fishermen in other Australian States); and (3) the development of facilities for fishermen at fishing ports. (Australian Fisheries Newsletter, January 1965.)

Note: See Commercial Fisheries Review, November 1964 p. 75.

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TUNA FISHERY TRENDS, 1936-64:

Australia's tuna landings increased spectacularly in the 1963/64 season, with a record catch of 9,000 short tons, more than double the tuna catch in the previous season. The tuna catch is now the greatest in quantity of any finfish landed in Australia.

Most of the tuna is canned in factories at or close to the two main tuna ports--Port Lincoln in South Australia and Eden in New South Wales. The canned product is practically all sold on the local market, with only small exports mainly to the Pacific Islands. Production of canned tuna in 1963/64 was about 4.7 million pounds, an increase of 135 percent over the 1959/60 output of 2 million pounds. Consumption of canned tuna in Australia has risen from about 3.2 ounces per capita in 1959/60 to about 7.5 ounces in 1963/64.

Frozen tuna (round) has been exported from Australia for several years, mainly to the United States. In 1963/64, Australia's total exports of frozen round tuna amounted to 3.3 million pounds, worth A£204,000 (US\$457,000).

The presence of tuna in Australian waters in possible commercial quantities was established in 1936 when aerial surveys of pelagic fish were pioneered. But until 1949 Australian fishermen neglected tuna, mainly because sporadic catches could not justify a canning industry and because trolling (which was then the only known way of catching tuna) was relatively slow. Canneries were in operation at Narooma and Eden, but both of them concentrated on Australian "salmon" (*Arripis trutta*). The canneries merged in 1949 and New South Wales fishermen, who were then experiencing a lean time, were offered 6 pence a pound live-weight for tuna landed. Tuna production

in 1949, using trolling gear, was about 1,000 tons of bluefin.



Fig. 1 - Australian tuna vessel.

In 1950/51, the Australian Commonwealth Government chartered the 63-foot United States-Fijian tuna clipper *Senibua*, which spent four months in Australian waters assessing the value of the pole-and-live-bait fishing method. Results were encouraging, and the industry began to gear itself to take advantage of the annual tuna runs off the southern New South Wales coast.

The first Australian vessel built especially for tuna pole fishing was the *Fair Venture*, which was launched in late 1951. After a disappointing first season in New South Wales, the vessel went to South Australia. The first tuna poled by a commercial vessel in South Australia were taken by the *Fair Venture* in 1952. Facilities to handle the catch were then inadequate, and further development of the South Australian fishery was delayed until 1956. In that year, two Californian tuna fishermen were invited by the South Australian Government to undertake exploratory pole-fishing for tuna. Other South Australian vessels followed suit, and after a few seasons of preparation and consolidation, the fishery began to assume its present proportions.

Australia (Contd.):



Fig. 2 - Pole-and-line fishing for bluefin tuna off southern Australian coast.

The Australian tuna fleet in 1963/64 consisted of 37 vessels in New South Wales, ranging between 21 and 105 feet in length, and 14 vessels in South Australia, from 48 to 88 feet long.

The mainstay of the tuna fishery since its inception in Australia has been the southern bluefin (*Thunnus thynnus maccoyii*). The schools are exploited during their surface-swimming phase, when their weight ranges between 20-80 pounds. As they grow larger, they move into deeper water layers, at which time they become the target, along with other species, for Japanese long-liners in the east Indian Ocean and the southwest Pacific. Southern bluefin tuna is thus the basis of an international fishery exploited in two distinct ways.

Yellowfin tuna (*Neothunnus macropterus*) is known to frequent Australian waters, and

have been taken in southern New South Wales waters. The spatial distribution of yellowfin in that area makes them more accessible to long-line fishing. Since 1963, a small but developing fishery for large adult yellowfin has been operated by Australian fishermen, using a modified long line.

Striped tuna or skipjack (*Katsuwonus pelamis*) occur on a definite seasonal pattern between Coff's Harbour (New South Wales) and St. Helen's (Tasmania). In 1963, experimental fishing with monofilament nylon gill nets was undertaken for skipjack off Lakes Entrance, Victoria, with some success. Marketing difficulties at present inhibit the further development of that fishery, which produces fish of from 8 to 16 pounds, which canneries regard as smaller than can be economically handled at the standard prices paid for tuna.

Australian tuna vessels range in size from 21-foot trolling vessels to 105-foot clippers. Most of the tuna is caught by the live-bait-pole fishing method with small quantities taken



Fig. 3 - U. S. tuna fishing expert unloading bluefin tuna from the Port Lincoln vessel Tacoma.

Australia (Contd.):

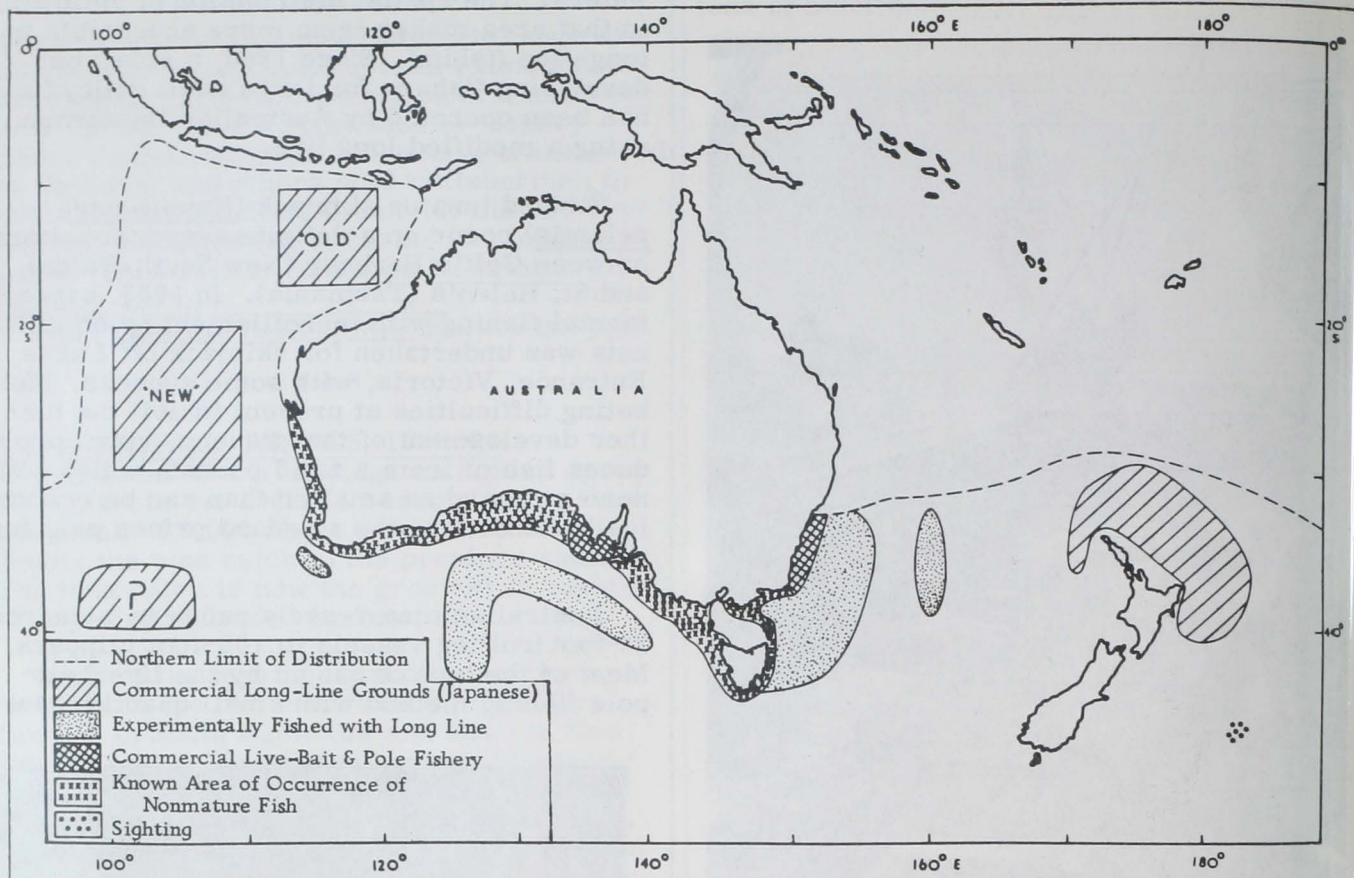


Fig. 4 - Southern bluefin tuna (*Thunnus thynnus maccoyii*) distribution and fishing grounds in waters off Australia and New Zealand.

by trolling, and some striped tuna being caught with monofilament nylon gill nets.

Although many small vessels have live-bait tanks, the major portion of the catch is taken by vessels of from 60 to 100 feet long, some of which have been designed specifically for tuna fishing, others being conversions from various types of vessels. The larger vessels use refrigerated sea water to hold their catch for periods of up to 5 or 6 days, and smaller vessels, which generally make shorter trips, and often return to port daily on the east coast, use ice as required. (Australian Fisheries Newsletter, January 1965.)

Note: See Commercial Fisheries Review, November 1964 p. 75; September 1964 p. 56.

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FISHERIES TRENDS, FISCAL YEAR 1963/64:

Highlights: During fiscal year 1963/64, Australian fishermen developed new scallop

grounds off Victoria and landed record tuna catches in New South Wales and South Australia to boost total Australian landings of fish and shellfish to a record level. The value of Australian exports of fishery products also rose to a record level in 1963/64 as new markets were developed for scallops and abalone. But Australian imports of fishery products continued to exceed fishery exports in 1963/64, because domestic landings could not satisfy the growing demand in Australia. There is a particularly strong demand in Australia for imported frozen fillets in consumer packs.

Landings: Australian fishery landings for fiscal 1963/64 (July 1963-June 1964) were up 10 percent in quantity and 5 percent in value from the previous fiscal year. Main reasons for the increase were larger catches of tuna and scallops.

The Australian tuna catch rose from 11 million pounds in 1962/63 to 17.9 million

Australia (Contd.):

Table 1 - Australia's Fishery Landings by States, 1962/63 and 1963/64^{1/}

Species	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
	1963/64	1962/63	1963/64	1962/63	1963/64	1962/63	1963/64	1962/63	1963/64	1962/63	1963/64	1962/63
Fish	32,819	31,598	13,448	12,611	8,919	9,041	20,357	16,137	8,807	8,017	2,774	2,879
Spiny lobster	400	498	823	1,531	10	31	4,325	4,650	18,500	21,380	3,572	3,310
Shrimp	6,107	6,623	-	3	5,118	4,971	-	-	2,118	1,017	-	-
Crab	103	228	-	-	571	571	-	-	26	36	-	-
Scallop	12,462	12,604	50	63	170	330	404	-	6	28	2	1
Scallop	-	-	10,967	-	846	627	-	-	18	-	4,260	5,871
Crab shellfish	64	22	536	867	114	119	1,699	-	221	8	-	-
Total	51,955	51,573	25,824	15,075	15,748	15,690	26,785	20,787	29,696	30,486	10,608	12,061

See table 2 for footnotes.

Table 2 - Australia's Fishery Landings with Ex-Vessel Value, 1962/63 and 1963/64^{1/}

Species	1963/64			1962/63		
	Quantity	Value		Quantity	Value	
	1,000 Lbs.	AL	US\$	1,000 Lbs.	AL	US\$
Fish	87,373	6,580	14,608	80,589	6,146	13,644
Spiny lobster	27,630	5,715	12,687	31,393	6,018	13,360
Shrimp	13,344	2,182	4,844	12,616	1,914	4,249
Crab	704	73	162	843	83	184
Scallop	13,094	1,232	2,735	13,030	1,122	2,491
Scallop	16,091	357	793	6,498	244	542
Crab shellfish	2,634	174	386	1,016	39	87
Total	160,870	16,313	36,215	145,985	15,566	34,557

Footnote: (1) Landed weights are shown. Total landings in table 2 are greater than the combined total landings in the individual tables which do not include landings in the Northwest Territory. (2) AL 1.00 equals US\$2.22.

landings in 1963/64. There are also indications that the Australian catch of salmon (*Arripis trutta*) was up about 2 million pounds in 1963/64.

Scallops were landed in significant quantities in Victoria for the first time in 1963/64. During that period, the new Port Phillip Bay fishery yielded 10,967,000 pounds of scallops with an ex-vessel value of A£200,000 (\$444,000). That greatly outweighed a decline in scallop landings in Tasmania.

Australian shrimp landings in 1963/64 reached a record 13.3 million pounds due to heavier landings in western Australia.

A gain was also recorded for abalone as new markets were developed for that item. Spiny lobster landings, however, were down 1 percent from the previous year.

Exports: Australian exports of fishery products in 1963/64 were valued at A£8.3 million (\$18.4 million), an increase of about

12 percent from the previous year. The main reasons for the increase were improved prices for Australian spiny lobster tails in the United States, expansion of the scallop market in France, and an increase in frozen tuna exports to the United States.

Spiny lobster products make up the bulk of Australian fishery exports. Other export items are shrimp, scallops, abalone, and tuna. Pearls, pearl shell, whale products, and a small quantity of canned fish are also included in Australia's marine exports.

The main markets are the United States (for spiny lobster, tuna, and shrimp), France (for scallops and spiny lobster), and Japan (for shrimp, pearls, and pearl shell).

Table 3 - Australian Imports of Fishery Products, 1962/63 and 1963/64

Item	1963/64			1962/63		
	Quantity	Value		Quantity	Value	
	1,000 Lbs.	AL	US\$	1,000 Lbs.	AL	US\$
Frozen Products:						
Fish	37,989	4,583	10,174	32,579	3,564	7,912
Shrimp	1,656	489	1,086	723	213	473
Other shellfish	532	120	266	328	46	102
Canned Products:						
Fish	24,200	4,394	9,755	20,911	3,815	8,469
Shellfish	887	290	644	619	224	497
Smoked and Dried Products	8,522	956	2,122	8,945	835	1,854
Other products	2,164	265	588	1,899	235	522
Total	75,950	11,097	24,635	66,004	8,932	19,829

Note: AL 1.00 equals US\$2.22.

Imports: Australian imports of fishery products in 1963/64 were up 15 percent in quantity and 24 percent in value from the previous year. Canned and frozen fish continue to be the main fishery import items. The bulk of the frozen fish imports are South African hake fillets, and British bream and

Australia (Contd.):

cod fillets packed in 1-pound and 5-pound cartons.

Domestic Consumption: Australian consumption of fishery products increased from 112 million pounds valued at A£9.7 million (\$21.5 million) in 1962/63 to 122 million pounds valued at A£11.0 million (\$24.4 million) in 1963/64. Imported frozen fillets accounted for a large part of the increase in domestic consumption. The demand for fish fillets is met by imports since the Australian fishing industry produces only small quantities of fish for filleting. It appears that a domestic fillet-processing industry could be developed with trawl fish from New South Wales and Victoria. (Australian Fisheries Newsletter, January 1965.)

Note: See Commercial Fisheries Review, Jan. 1965 p. 63, and Oct. 1964 p. 51.

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DEVELOPMENT OF SPINY LOBSTER INDUSTRY SPURRED BY FOREIGN DEMAND:

Australia's export of spiny lobster (tails and whole boiled) has for more than 10 years been the leading edible fishery export item. The Australian home market for that product is small and the spiny lobster industry, which has been established and developed as a result of constant overseas demand, is largely dependent on foreign markets.

The Australian spiny lobster industry has enjoyed a period of rising prices practically since it started--interrupted only for short periods, the most recent being in 1962/63. But in 1963/64 record wholesale prices of up to \$2.30 a pound were paid in the United States for Australian frozen spiny lobster tails.

Less dependence on the United States market has been a recent feature of Australia's overseas market for spiny lobster. France, which was a minor buyer five years ago, now imports nearly 2 million pounds of Australian spiny lobster tails and whole boiled spiny lobster a year. Canada, Belgium, Luxembourg, Italy, and Japan are also increasing their imports of Australian spiny lobster.

Despite this widening demand on world markets, the United States still remains, by far, Australia's best customer, taking about 80 percent of the total exports. Market con-

ditions in the United States have an important influence on the spiny lobster industry in Australia. The United States market is influenced by the level of inventories and the availability of supplies from local and other overseas sources. Both those factors suggest the high prices will continue. Inventories in the United States of spiny lobster tails were low early in 1965, and in September 1964 they were the lowest for 1964.



Fig. 1 - Two larger specimens of Australian spiny lobster.

While the market outlook for the Australian spiny lobster industry is generally satisfactory, the supply position is possibly less attractive. Leading fishing authorities have suggested that production from known Australian sources is probably approaching the optimum and that supplies for export have reached their peak. In Western Australia, in particular, the trend suggests there has been some reduction in the average size of spiny lobster produced. Midget sizes are becoming an increasing portion of the total harvested while medium and jumbo sizes are declining.

In other Australian States, although no detailed figures are available, preliminary figures show that production in 1964 will be down from the previous year. The concern at production levels is reflected in a variety of management measures in force throughout Australia. Unexploited stocks still exist, particularly in the north, where the "painted" spiny lobster is known to exist.

Australia appears to have an assured market for all the spiny lobster it can produce.

Australia (Contd.):

High overseas demand should keep prices high but the main immediate problem could be maintaining supplies. The Australian spiny lobster industry has been developed on a basis of rising prices and increased catches. If the management measures to be undertaken for any reason either too little or too late, some production decline may occur.

Australian spiny lobster fishermen use a number of methods for holding them aboard their vessels. Small vessels (18 to 35 feet), working inshore and returning to port or tying up each night, generally hold them in bags and unload them daily. Many of the small vessels used in Western Australia are built of marine plywood and have a "V" bottom. The shallow-draft "scoota boats" are most popular and suitable for working around inshore reefs and in the shallow waters of the Abrolhos Islands area. Larger vessels, from 30 to 85 feet long, make trips of from 2 or 3 weeks up to 5 or 6 weeks and hold their catch in net wells, open to the sea water, or in tanks with sea water pumped through them.

A number of processing vessels from 52 to over 100 feet long operate in Western Aus-

tralia. The catch is processed aboard and the tails are quick frozen in boxes of 25 pounds ready for export.

The beehive type pot is the most commonly used gear. A rectangular or "D" shaped trap is used on the New South Wales coast and a rectangular pot constructed of wooden battens is popular in the Geraldton and Abrolhos Islands area of Western Australia. Although the size and shape of the beehive pot does not vary greatly, materials used in its construction range from cane to cane and timber, to steel frames covered with wire or synthetic netting.

Mechanical hauling winches, driven from the main engine or an auxiliary, are found on most vessels. The pot line is hauled over a roller on the rail, through a snatch block attached to a davit, or through a roller on a pot tipper which is hinged on the rail of the boat. The tipper is in a vertical position during hauling and when the pot comes up to it and trips a release, it tips inboard into a horizontal position with the pot sitting on top of it.

Synthetic pot lines have been introduced to the industry and may eventually replace natural fibers. (Australian Fisheries Newsletter, January 1965.)

Note: See Commercial Fisheries Review, January 1965 p. 61.

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**SHRIMP FISHERY
CONTINUES TO EXPAND:**

Australia's modern shrimp fishery is a very recent development. Prior to 1947, Australian fishermen took shrimp only in estuaries and inshore waters. Then offshore shrimp grounds were discovered and explored off both the east and west coast of Australia. As a result, Australian shrimp landings nearly doubled between 1959 and 1964.

Efforts are now being made to develop new Australian shrimp fishing grounds. In 1964, a shrimp fishery was begun at Exmouth Gulf in Western Australia. In early 1965, an exploratory shrimp fishing survey was under way on the north coast in the Gulf of Carpentaria. The north coast survey is a joint project of the Commonwealth and the Queensland Governments.

Discovery of new shrimp grounds in the Gulf of Carpentaria, and in other areas off

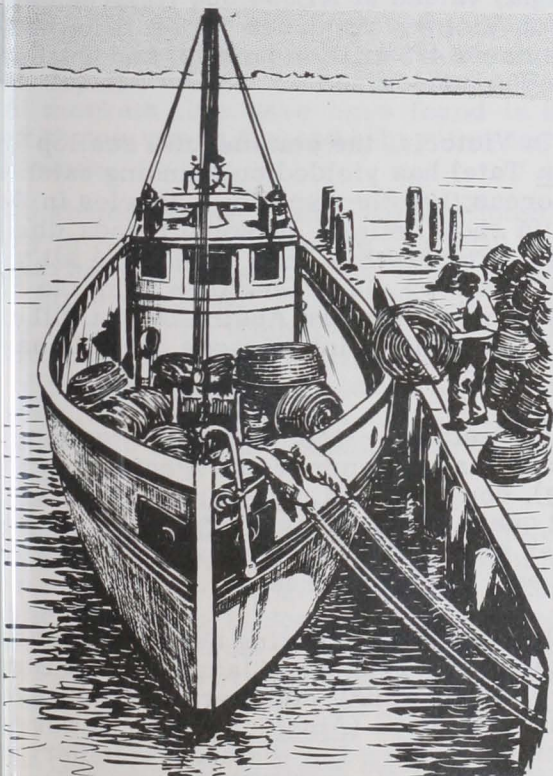
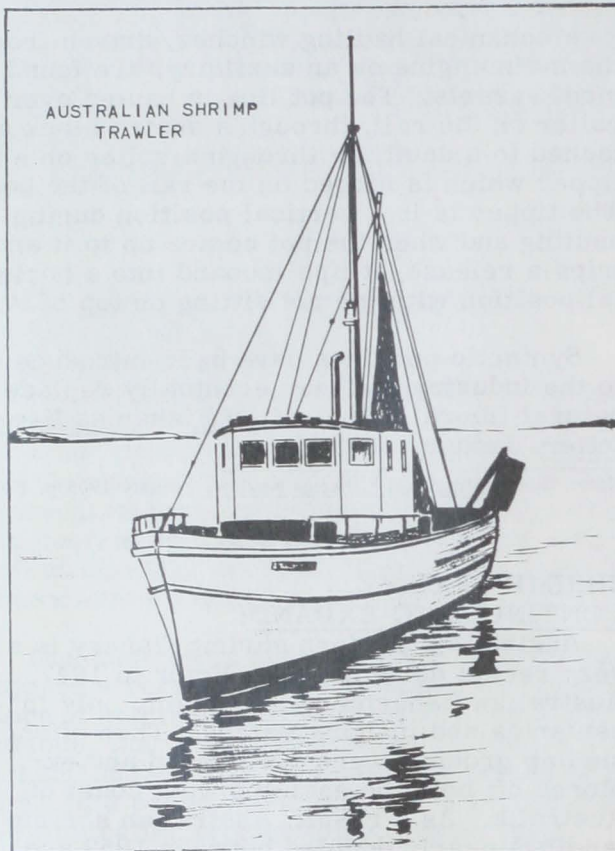


Fig. 2 - Australian spiny lobster boat taking on beehive-type pot.

Australia (Contd.):

northern Australia, could help relieve the pressure on existing grounds, but care in managing any new fisheries would be required to avoid excessive concentration of fishing effort.

Australian shrimp trawlers range in size from small launches used in the estuaries and bays to vessels of about 85 feet in length that work in offshore waters in depths of up to 150 fathoms. Most of the offshore shrimp vessels are powered by diesel engines and many are equipped with echo-sounders and radio transmitters.



On offshore shrimp vessels, the trawl is set and hauled from the stern of the vessel, the cod end being lifted over the side by the boom tackle and emptied on a sorting table or into a pound on the deck.

An overhead method of hauling the trawl warps is generally used in which the warps are led from the winch to blocks positioned above the winch drums and then to the gallow blocks, leaving headroom beneath the warps where they pass over the deck. (Australian Fisheries Newsletter, January 1965.)

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SCALLOP EXPORTS CONTINUE TO GROW:

Most of the scallops produced in Australia were absorbed by the domestic markets until fairly recently. But with the opening up of new beds in Victoria a growing export trade for them has been started.

Official Australian statistics do not record exports of scallops separately, but it is estimated that the quantities of scallop "meat" exported amounted to 23,400 pounds in 1961, 91,000 pounds in 1962/63, and 761,000 pounds in 1963/64. Exports to France during 1963/64 were 657,000 pounds or 86 percent of the total exports of scallop meats.

For the past 10 years up to 1962/63, Tasmania provided over 80 percent of Australia's scallop production, the remainder being produced by Queensland. The "in-shell" weight of scallops produced in Tasmania ranged from 3.8 million pounds in 1953/54 to 5.9 million pounds in 1962/63.

Recent growth in the newly established scallop fishery in Victoria, on beds in Port Phillip Bay, has greatly increased overall production. Preliminary data for 1963/64 show that Australian scallop production amounted to 15.4 million pounds (in-shell weight) valued at A£354,000 (US\$793,000), of which Victoria produced 10.9 million pounds, Tasmania 4.3 million pounds, and Queensland 170,000 pounds.

In Victoria, the commercial scallop (*Pecten alba* Tate) has yielded outstanding catches. Whereas the other scallop fisheries in Australia show definite seasonal trends, the Port Phillip fishery has been productive all year. Scallops have also been taken from the Shark Bay area of Western Australia, but full commercial exploitation of those grounds has not yet begun.

In Tasmania--the traditional scallop-producing State--commercial (*Pecten meridionalis*), dough boy (*Mimachlamys asperrim*), and queen (*Equichlamys bifrons*) scallops are taken from D'Entrecasteaux Channel, and on the east coast of the island.

When shrimp trawling began in offshore waters near Yeppoon, Gladstone, and Bundaberg (Queensland), commercial catches of saucer scallops (*Amusium ballotti*) were made simultaneously. But the scallop fishery has not yet attained commercial importance because the shrimp fishery is more profitable

Abalonia (Contd.):

It is, however, an important addition to Queensland's fisheries.

Scallops are taken by two methods in Australia--by otter trawl and dredges. In Queensland, shrimp trawlers are used with modified shrimp trawl net, and in Victoria and Tasmania a wide variety of vessels from 25 to over 50 feet long use the standard scallop dredge or the Baird type, which is commonly called the "sputnik" dredge. (Australian Fisheries Newsletter, January 1965.)

See Commercial Fisheries Review, November 1964 p. 77; October 1964 p. 51; September 1964 p. 58.

ALBALONE FISHERY PROMISING:

Another fishery in Australia showing increasing commercial importance is for abalonia. Export data for 1962/63 show that about 1,100 pounds of abalonia (meat weight) was sent to Hong Kong. During the 1963/64 season an estimated 180,000 pounds valued at \$140,000 (\$112,000) was exported to Japan, and another 2,300 pounds was shipped to Hong Kong. A small market for abalonia was also opened up in New Caledonia.

Market prospects are reported to be very favorable in Malaysia where there is considerable demand for the canned product. Potential markets also have been found in the United States where demand is best for canned abalonia.

The abalonia fishery has an interrupted history in Australia. Abalonia (*Haliotis* spp.) is a marine gastropod or snail which inhabits rocky foreshores and reefs. The edible portion is regarded by many people, especially in Asia, as a delicacy. Little is known of the status of the abalonia stocks, and some concern has been felt that Australian abalonia might be depleted to the same extent as in California.

Abalonia is taken in the Australian States of New South Wales, Victoria, and Tasmania, where a minimum size of 5 inches is in force. Abalonia harvesting is done by shore-based divers and from small vessels of all types. Dredge gear is generally used, and "hooka" gear has been tried from small boats. (Australian Fisheries Newsletter, January 1965.)

See Commercial Fisheries Review, December 1964 p. 82

QUEENSLAND FISHERY TRENDS, 1963/1964 SEASON:

Productive shrimp (king) fishing grounds were discovered by the shrimp trawling fleet out of Queensland, Australia, in 1964 as it extended its operations in deeper water than formerly fished.

The discovery of new unexploited shrimp grounds has stimulated the construction of larger vessels designed to remain at sea despite changes in weather, and to operate in waters as deep as 150 fathoms. In 1964, the construction of larger vessels increased by about 25 percent, and in 1965 at least 12 more large vessels are being built. One of them is 70 feet long.

Research is producing useful results in the shrimp and mullet fisheries largely as a result of close and continuing cooperation between the fisheries staffs of the Queensland and Commonwealth Governments. Such cooperation is also extended by the Commonwealth Scientific Industrial Research Organization (CSIRO).

The shrimp research unit, which has been working in the Gulf of Carpentaria since August 1963, is now planning an extension of its work to include studies of the East Coast shrimp stocks. Knowledge which has already been gained in the Gulf is expected to be of considerable value in furthering those studies.

Studies which were started several years ago into the mullet stocks of the Noosa Lakes have been stimulated by the assistance given by CSIRO and also by the advice given by an officer of the Food and Agriculture Organization's (FAO) Fisheries Division during his visit to Queensland in October 1964. The study, which is to be published, will be used in compiling a wider thesis on the mullet stocks of the Eastern Australian seaboard.

Tuna, which is known to be abundant offshore, where it is caught by long-lining, cannot at present be caught profitably by Australian vessels using that gear. Experiments in the south with a modified long line are being watched with interest and a survey is being planned to determine when and where tuna occur closer to the coast in shoals which feed at the surface and which can be caught by other and more profitable fishing methods than the long-line method.

A further development which will be of great value to the Queensland fishing fleet is

Australia (Contd.):

the provision of a harbor at Mooloolaba where moorings, a fish dock, and other facilities have been approved. Construction of those facilities is scheduled for this year. (Australian Fisheries Newsletter, January 1965.)

Note: See Commercial Fisheries Review, November 1964 p. 76.

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FISHERY TRENDS IN SOUTH AUSTRALIA, 1953-64:

Fisheries production in the State of South Australia has more than doubled in the past 10 years. In 1953/54 it was 12.1 million pounds and in 1963/64 it climbed to 25.5 million pounds.

The establishment of a tuna industry has accounted for the substantial increase and, during the last 10 years tuna production has grown from only 6 short tons (1953/54) to 6,043 tons (1963/64).

While the tuna fishing industry has been developing in a spectacular fashion, that State's Director of Fisheries and Game said that aggregate production in other commercial fisheries is static notwithstanding fluctuations which may occur from year to year in production of certain species. The chance of developing new fisheries in inshore waters is not particularly encouraging, he said.

With the exception of tuna, little is known of the fisheries potential in offshore waters. Exploratory fishing in the Great Australian Bight would suggest that demersal fisheries are there, but who has the capital to risk another venture in those waters, he added. Therefore, in the immediate future, it would appear that development opportunities in offshore waters are dependent on tuna.

Provision of adequate port facilities for fishing fleets is said to be an acute problem. During recent years the South Australian Government has spent some A£500,000 (US\$1.1 million) on facilities for the special use of fishermen. Consideration is being given to lengthening docks in the southeast area, the building of a dock at Port Lincoln for the tuna fishing industry, shelter harbors at Ceduna and Port Adelaide, and a number of other projects.

Under the South Australian "Loans to Producers Act," funds continue to be available

both to fishermen and those at a secondary level in the industry. Those funds have assisted in the maintenance of the spiny lobster fishing industry and also have been a prime factor in the development of the South Australian tuna industry. (Australian Fisheries Newsletter, January 1965.)

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VICTORIA FISHERY TRENDS IN 1963/64 SEASON:

The development of fisheries out of Victoria, Australia, for scallops, striped tuna, and abalone were among the more notable achievements in that State's fishing industry in 1963/64, reported the Director of Fisheries and Wildlife at Victoria. That State's Fisheries and Wildlife Department together with the Underwater Explorers Group paved the way to the development of the scallop fishery by an underwater survey of Port Phillip Bay beds. This stimulated the interest of a few Tasmanian fishermen, who crossed Bass Strait to start commercial scallop fishing in September 1963. The fishery developed rapidly, and 90 boats dredged for scallops in the Bay in 1964 to supply local and export markets.

During 1963/64, the striped tuna fishery was developed, using monofilament nylon gillnets. The fishery operates from Lakes Entrance during the summer and autumn, and three boats supply a Melbourne fish cannery. The Victorian State Government provided funds to finance fishermen equipping boats in the striped tuna fishery.

Promising local and export possibilities are reported for the abalone fishery, which is operated by divers along the coast.

Port facilities in Victoria were improved at a number of important fishing centers. New slipways were built at Lakes Entrance, Queenscliff, and Port Fairy, and vessel harbors were improved at Port Welshpool, Port Phillip, Port Melbourne, Port Phillip, Port Phillip, Geelong. Harbors at Port Phillip, Geelong, Port Fairy, Apollo Bay, and Portland were deepened by dredging.

Marine research programs are in progress in the scallop, black bream and King George whiting fisheries, and data are being collected for the Australian salmon (Arripis trutta) and southern spiny lobster programs of the Commonwealth Scientific and Industrial Research Organization (CSIRO).

Australia (Contd.):

Mussels, squid, and abalone were designated as fish for the purpose of the Fisheries Act so that catch and processing returns can be collected as a preliminary to research work on those species.

In the future it is anticipated that a blue-fina fishery using live bait pole-fishing may be developed in Victorian waters. Also trawler operations may be introduced with the aid of echo-sounding equipment to fish shoals. (Australian Fisheries News Letter, January 1965.)

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FISHERY TRENDS IN WESTERN AUSTRALIA, 1963/64 SEASON:

Spiny lobster fishing--the largest single fishing enterprise in Australia--and Western Australia's main fishery, continues to be a profitable and sound money earner.

In 1963 there were 2,526 fishermen engaged in spiny lobster fishing in Western Australia, and total production was 21 million pounds valued at A£4 million (US\$9 million).

At its peak in 1961/62, exports of spiny lobster and spiny lobster tails were valued at 10.5 million, but due to a price drop in the United States market in 1962/63, exports dropped to \$8.9 million. In addition to tails, markets have been established for whole cooked spiny lobster. More shipments are now being made to France, Singapore, and Western Germany.

The Shark Bay shrimp fishery in Western Australia, which started in 1963, is said to be making satisfactory progress. Production in the first season was 1.2 million pounds of tiger and king shrimp, and this climbed to 2 million pounds in 1964. The fishery has extended to Exmouth Gulf, where "banana," as king and tiger shrimp are fished. Total production in the Gulf in 1963 was 39,000 pounds and in 1964 it was 36,000 pounds. There is a ready market for king and tiger shrimp, but banana shrimp were difficult to sell.

Humpback whaling has now stopped in Western Australia, in accordance with the decision of the International Whaling Commission. The two whaling companies there have now turned to sperm whaling. The Car-

narvon station will in the near future be transferred to Fremantle. The Albany company has obtained a third chaser vessel and substantially increased its take of sperm whales. There was a decided fall in the price of sperm oil on the world's markets in 1964.

Recent improvements at Western Australian fishing ports from public funds include: (1) A much enlarged fishing vessel harbor, with ancillary services, at Fremantle; (2) harbor and dock facilities for fishing vessels at Geraldton; (3) improved handling facilities at Shark Bay; (4) a jetty for use by fishermen at Port Denison (Dongara). In addition, privately-owned facilities have been installed at several places.

The Western Fisheries Research Committee has continued its work, and research on spiny lobster, shrimp, Australian salmon (Arripis trutta), and tuna is proceeding under the supervision of that committee. (Australian Fisheries Newsletter, January 1965.)

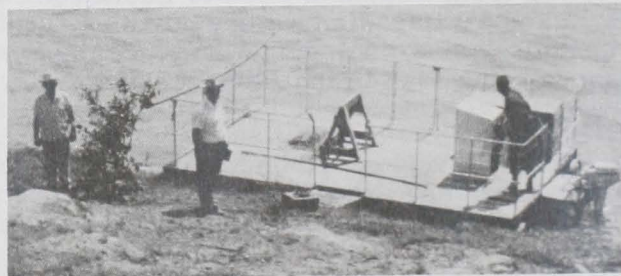


Brazil

U. S. AID FOR DEVELOPMENT OF FRESH-WATER FISHERIES:

The Alliance for Progress plans to help finance, with a contribution of \$60,000, the building of 16 reservoirs in Northeast Brazil for production of fresh-water fish. This is the result of the work done by the U. S. Bureau of Commercial Fisheries five-man mission to Brazil in 1964. The study was made in cooperation with the U. S. Agency for International Development (AID) and the Alliance for Progress.

In addition, AID has agreed to sponsor an investment survey on fishery resources in Brazil and Argentina. The survey is to be



Research raft used by Division of Hunting and Fishing, State of Sao Paulo, on Limerao Reservoir.

Brazil (Contd.):

done by a Tennessee fishery company which is interested in the production potential of a brackish water catfish reported to be plentiful in both Brazil and Argentina.

Note: See Commercial Fisheries Review, March 1965 p. 68.



Burma

BIDS INVITED ON CANNED MACKEREL AND SAURY:

The Burmese Government purchasing agency invited foreign firms to submit tenders on January 18, 1965, for 42,300 cases (can size not designated) of canned saury in tomato sauce (for February shipment) and 28,200 cases (1-lb. oval) of mackerel in tomato sauce (for March shipment). Japanese canned fishery products reported to be available for sale by the Japan Canned Sardine and Saury Sales Company include 36,000 cases (1-lb. tall) of canned saury in tomato sauce and approximately 110,000 cases of canned mackerel in tomato sauce, consisting of 50,000 cases of 1-lb. oval, 40,000 cases of 8-oz. oval, and about 16,000 cases of 5-oz. tall. (Suisan Tsushin, January 7, 1965.)



Canada

OTTER TRAWLING IN CERTAIN "LOBSTER" WATERS OFF NEW BRUNSWICK BANNED:

Otter-trawl fishing in the New Brunswick section of Passamaquoddy Bay at the southern end of the Bay of Fundy has been prohibited by the Canadian Fisheries Minister. The order was announced February 12, 1965, and became effective immediately. The restriction applies to "all waters north of a straight line drawn from Deadman Head to East Quoddy Head and all Canadian waters north of Campobello Island, including all waters of Passamaquoddy Bay in the Province of New Brunswick."

In that relatively small body of water, dragnets interfere excessively with other methods of fishing because of exceptional natural conditions. Lobster trap operators find it impossible to mark their gear adequately because the strong Passamaquoddy tides draw buoys under the surface and out

of sight except during the brief periods of slack water. Also, Passamaquoddy Bay is one of the few areas where lobsters inhabit grounds favorable for dragging. Lobsters usually prefer rough, rocky bottom which is unsuitable for trawl nets, but in Passamaquoddy Bay they exist on smooth bottom. As a result, trawl nets could have an adverse effect on lobster stocks. (Canadian Department of Fisheries, Ottawa, February 12, 1965.)

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BRITISH COLUMBIA FISHERY LANDINGS, 1964:

The value of fishery landings by British Columbia fishermen was the third highest in 1964 as compared with other years, according to the Department of Fisheries of Canada. The total landed value for all species in 1964 was C\$48.3 million as against \$49 million in 1962 and \$52.3 million in 1958. The value of salmon landings in those years is in the same order. In 1964 it was \$30.2 million; 1962 \$30.6 million; and \$37.1 million in 1958.

For the second year in a row, silver or coho salmon topped all other species in value establishing new value and production records. Over 28.5 million pounds of silver salmon were landed in 1964 with an ex-vessel value of \$9.25 million. About 65 percent of the silver salmon landings was troll-caught. The 1964 sockeye catch of 22.9 million pounds had a value of \$8.25 million. The catch and ex-vessel value were slightly above the five-year average of 1959-63. The chinook or spring salmon catch with a record high was in third place. Landings of 12.1 million pounds were valued at \$5.5 million. The 1964 pink salmon landings totaled 36.5 million pounds with a value of \$4 million. The chum or fall salmon catch of 23.9 million pounds with a value of \$3.1 million was the highest since 1958.

British Columbia's 1964 halibut landings totaled 33.9 million pounds, the fourth largest landings on record. It was the highest percentage proportion (56.7 percent) of the total United States-Canada halibut catch ever taken by Canadian fishermen. Of the total catch, 8.2 million pounds were landed at United States ports by British Columbia vessels. The halibut ex-vessel value was \$8.3 million—second only to the record 1962 value of \$10.4 million.

The herring fishery in British Columbia recorded its second highest year of landings

Canada (Contd.):

in 1964 when 252,500 tons with a value of \$6.2 million were landed at British Columbia processing plants. Also reaching a new high in value in 1964 were crab landings worth \$1,700,000. The value of shrimp landings dropped off sharply to \$161,000, the lowest since 1911.

Oyster production in 1964 was down from the record high of 1963 but totaled 153,000 gross tons of meats worth \$587,000. About 1.6 million pounds of clams were harvested in 1964 with a total value of \$59,000, the lowest since the recording of detailed statistics on clam production in 1951. Abalone production during the year was about 125,000 pounds valued at \$20,000.

Groundfish landings were generally good in 1964. About 12 million pounds of grey cod worth \$722,000 were landed, setting a new production record. The previous high catch was the 7.7 million pounds in 1958. Lingcod landings totaled 3.8 million pounds valued at \$3,000,000. That species provides a stable fishery showing less fluctuation than any other. Landings of different species of sole (6 varieties are listed commercially) amounted to 6 million pounds valued at \$409,000. Less than a million pounds of ocean perch valued at \$1,300,000 were landed during the year.

Nearly a quarter of a million pounds of fish valued at \$40,000 were landed in British Columbia in 1964. About 4.8 million pounds of industrial fish for use as animal feed were landed in 1964. (Fisheries News, Department of Fisheries, Canada, January 28, 1965.)

FISHING VESSEL SUBSIDY EXTENDED:

Canada, the 30 percent Government subsidy for the construction of fishing vessels 55 feet and over was extended to vessels in the 44 to 55-foot class. The maximum size of 99 gross tons remains the same. That change in the Fishing Vessel Assistance Regulations of the Federal Government was announced January 28, 1965. It is expected to speed the adoption of more versatile fishing vessels, and give encouragement to fishermen in Canada's Atlantic Coast Provinces to acquire more efficient vessels.

In June 1964, the minimum size of Canadian vessels eligible for construction subsidies

from the Government was lowered to 35 feet, overall length, from the previous minimum of 45 feet. However, vessels under 45 feet are eligible for subsidy only when of an approved experimental design. Also, the subsidy which may be given to vessels of 35 to 44.9 feet is 25 percent of the cost approved by the Federal Minister of Fisheries, while the rate of 30 percent may now be paid for vessels from 45 feet in length overall up to the maximum of 99.9 gross tons. The subsidy is based upon the total approved cost of each vessel equipped and ready for fishing.

The Fishermen's Loan Boards in the Provinces of New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland, and the Minister of Industry and Commerce in the Province of Quebec are responsible for the direct administration of the subsidy regulations. Close control over the design and specifications of craft eligible for assistance is maintained by Federal-provincial cooperation. This will include consideration of the number of vessels to be built each year, and the coordination of vessel construction with training projects designed to provide skilled manpower for a modern Atlantic fleet. (Canadian Department of Fisheries, Ottawa, January 28, 1965.)

VESSEL INSURANCE PLAN EXTENDED:

As an incentive to fishermen to invest in more efficient fishing vessels, the Canadian Federal Fisheries Minister has raised the upper limit on vessels which may be insured under the Fishermen's Indemnity Plan to C\$15,000. Previously the limit covered only vessels costing up to \$12,500. There is no change in the lower limit of \$250.

The Fishermen's Indemnity Plan of the Canadian Government came into operation in 1953. It offers fishermen owning and operating fishing vessels the opportunity to secure insurance against total or partial loss for an annual premium of 1 percent of the appraised value of the vessel. Because of the wide dispersion of small fishing vessels in many hundreds of fishing settlements, commercial marine insurance companies have found it impracticable to offer insurance to fishermen at rates within fishermen's capacity to pay.

Under the Government Plan, insured fishermen are compensated for total loss of a vessel at the rate of 60 percent of the value

Canada (Contd.):

in the Atlantic Provinces and 70 percent in British Columbia. There are also provisions for compensating partial losses. (Canadian Department of Fisheries, Ottawa, January 28, 1965.)

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**OCTOBER 1965 PROCLAIMED AS
"NATIONAL FISH 'N SEAFOOD MONTH":**

Special recognition is to be given to the Canadian fishing industry and the resource on which it is built with a proclamation by the Canadian Fisheries Minister declaring October 1965 as "National Fish 'n Seafood Month."

The Minister's proclamation points to the important role Canada's extensive ocean and fresh-water fish resources have played in the discovery and development of Canada from coast to coast. It also emphasizes the valuable contribution the fishing industry makes to the livelihood of thousands of Canadians, and to the nutritional well-being of populations at home as well as those in the widely dispersed foreign markets to which Canadian fishery products flow.

Some 80,000 Canadian fishermen engage part or full time in the fisheries. The total landed value is as high as C\$125 million, and the market value of fishery products is about \$250 million. Aside from those directly engaged in the industry, many more thousands benefit from the subsidiary employment which the fisheries provide in the packaging, transportation, and other allied industries.

Canadian fishermen catch about 150 different species of fish and shellfish which are processed and marketed in a wide variety of products. These go to countries all over the world, making Canada one of the world's three leading exporters of fishery products.

New impetus was given to modernization of the Canadian fishing industry as a result of the National Fisheries Development Conference held in Ottawa in 1964 and rapid expansion is now taking place in construction of new fishing vessels, introduction of new fishing techniques, and improvement of fish-handling facilities.



Chile

**FISHERIES TRENDS,
FOURTH QUARTER 1964:**

Chilean fish meal production in 1964 totaled 147,000 metric tons, an increase of 36 percent over the 108,000 tons produced in 1963. The increase in output would have been even greater if anchoveta had been more abundant in late 1964. (Editor's note: The movement of anchoveta beyond the limited range of the Chilean fishing fleet has been a recurrent problem for the Chilean fish meal industry.) In late November 1964, some of the purse seiners supplying the northern reduction factories began moving farther south into waters off Antofagasta Province in an effort to find anchoveta. Initially, Antofagasta fish canneries protested the "invasion" by the northern seiners, but the complaints seem to have subsided.



Fig. 1 - Crew of Chilean trawler (off of Valparaiso) lowering their net.

New reduction plants and facilities (recently completed, under construction, or planned) could give Chile a fish meal production capacity of over 400,000 tons in 1965. A large anchoveta fishing fleet will be needed to supply the expanding industry. (In mid-1964, the Chilean anchoveta fleet numbered about 20,000 vessels, most of which were modern steel purse seiners of 100- to 170-ton hold capacity.)

The Iquique shipyard owned by a Chilean United States firm has supplied many of the

...le (Contd.):

vessels in the Chilean anchoveta fleet. In November 1964, the shipyard at Iquique laid the first keel of a new series of purse seiners (called the 82-I). The firm plans to produce five of the vessels each month and was expected to complete the first by March 1965.

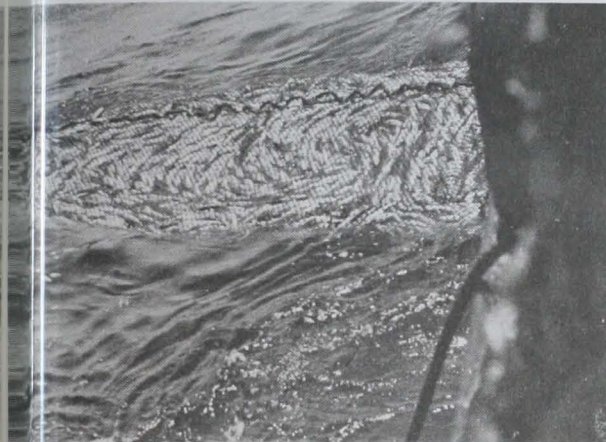


Fig. 2 - Cod end of trawl floating on the surface full of "merluccius".

The Chilean fish reduction industry is centered in the northern Province of Tarapacá. Attention is now being given to developing fisheries in other Provinces of Chile. In 1964, scientists from the Chilean Institute of Fisheries Development studied waters of southern Chile where there is little in the



Fig. 3 - Fishermen bringing their catch of tuna ashore from small tuna boats.

way of a fishing industry. The study of southern Chile was particularly concerned with shrimp and spiny lobster in waters near Talcahuano and Valdivia, and with hake and anchoveta near the latter port. Initial findings were said to be encouraging. The survey of southern Chile is related to the need to diversify the highly specialized fisheries of Chile.

Diversification may be aided by the plans of a Chilean firm to can 5,000 cases of "king" crab which is to be distributed by a United States firm. In addition, a Japanese group which was previously in Chile surveying crab resources has returned for further studies. Although neither the United States firm nor the Japanese interests has invested in the local industry, both continue to show an interest in the Chilean crab resource. (United States Embassy, Santiago, October 29, 1964, and January 22, 1965.)

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THREE MORE JAPANESE WHALERS LICENSED TO FISH OFF CHILE:

By Decree 580 of October 29, 1964, the Chilean Ministry of Agriculture authorized 3 Japanese whaling vessels to take whales for a 3 year period within jurisdictional waters claimed by Chile. The Japanese vessels (Ryudo Maru, Ryudo Maru No. 5, and Seiho Maru No. 6) have a combined gross tonnage of 1,331 tons. The decree stipulated that the catch of the Japanese whalers must be landed at Chilean shore plants (sale at sea is prohibited).

Two other Japanese whalers had previously been granted 3-year licenses to operate within the 200-mile fishing limit claimed by Chile. The five Japanese whalers with Chilean licenses are all under contract to a Chilean processing firm based in Santiago, and all of the vessels have been furnished by one Japanese whaling company. (United States Embassy, Santiago, December 29, 1964.)

Note: See Commercial Fisheries Review, November 1964 p. 97; June 1964 p. 38.



Cuba

SOVIET AID TO FISHERIES:

The Chairman of the State Fisheries of the Soviet Union is reported to have made the following statement early in 1965 on Soviet aid to Cuban fisheries:

Cuba (Contd.):

In the summer of 1962, the first five Soviet medium-size trawlers arrived in Cuba. Cubans sailed on them with Soviet fishermen to learn the trade. The catch went to Cuba, and the Cuban Government purchased the trawlers to form the core of its new fishing fleet.

vicinity of Cuba and the Bahamas and also off the west coast of Florida and the Campeche Banks of Mexico. The Continental Shelf as well as deep areas are being studied. The expedition is scheduled to continue from May 1964 to May 1965. The Soviet research vessel Academician A. Kovalievski and several Cuban vessels are reported to be participating in the study. Object of the study is said to be a bet-



Now, says the Soviet fisheries Chairman, Cuba has a growing fishing fleet and 40 fishing cooperatives. Some 120 Cubans so far have been trained on Soviet vessels. Another 200 Cubans have been trained at the Soviet port of Kaliningrad and are working on the construction of Cuba's new fishing harbor at Havana. (Fishing News, London, January 29, 1965.)

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OCEANOGRAPHIC STUDY IN GULF OF MEXICO AND SOUTH ATLANTIC CONDUCTED BY CUBAN-SOVIET EXPEDITION:

A Cuban-Soviet expedition is reported to be carrying out oceanographic studies in the

vicinity of Cuba and the Bahamas and also off the west coast of Florida and the Campeche Banks of Mexico. The Continental Shelf as well as deep areas are being studied. The expedition is also designed to give Cubans an opportunity to work with Soviet scientists, and to help with development of Cuban oceanographic centers. (International Marine Science, Vol. 11, No. 4, November 1964.)



Denmark

FISHERIES TRENDS, 1964:

Denmark's fishery landings in local ports by Danish vessels in 1964 increased 2 percent from the previous year, according to preliminary

Denmark (Contd.):



Fig. 1 - Fishing vessels docked in the Danish fishing port of Aalborg.

... data of the Danish Fisheries Ministry. An increase in the 1964 herring landings more than balanced the smaller landings of industrial fish, cod, and cod-like species. Total trout production in 1964 was at a record high, as were landings of plaice, herring, and Norway lobster.

Table 1 - Danish Fishery Landings, 1964

Species	1/1964	1963
. . . (Metric Tons) . . .		
Landings in Denmark		
Danish Vessels:		
Flatfish 2/	74,063	71,339
Cod	65,737	69,030
Cod-like 3/	58,544	64,072
Herring	360,625	290,872
Trisling	10,868	9,449
Mackerel	6,551	7,245
Eels	3,331	3,928
Salmon	1,371	2,386
Sea trout	8,460	7,804
Other fish 4/	241,746	293,585
Norway lobster	2,292	1,752
Deep-water shrimp	3,280	4,735
Other shellfish	60	138
Mussels	16,388	13,575
Sea bream	3,447	1,769
Total	5/856,763	6/841,679
Landings in Denmark		
Foreign vessels	200,930	143,329
Grand total	1,057,693	985,008
Landings in		
Foreign ports	4,290	12,016
1/1964 annual total (preliminary). 2/Flatfish, flounder, dab, common sole, etc. 3/Plaice, coalfish, hake, ling, etc. 4/Other industrial fish such as sand eels, Norway pout, etc. 5/Does not include Danish landings in foreign ports. 6/Does 12,016 tons (about 60 percent) industrial fish landed in foreign ports by Danish vessels. Source: Ministry of Fisheries.		

Preliminary export data for 1964 show that larger quantities of fish and shellfish were produced as fresh, frozen, smoked, canned, and semipreserved products than in 1963. More fish was processed into fillets, and there was an increase in fish meal and oil production, but salted fish production was below 1963.

Table 2 - Danish Production of Processed Fishery Products, 1964

Product	Metric Tons
Canned:	
Herring and sprats	2,868
Mackerel	2,148
Other fish	4,196
Shellfish	994
Mussels	633
Total	10,839
Semipreserved:	
Herring and sprats	4,800
Other fish	382
Mussels	628
Total	5,810
Fresh and frozen fillets:	
Cod	20,873
Cod-like 1/	1,415
Plaice	18,556
Other flatfish	1,236
Herring	35,997
Other fish	163
Total	78,240
Smoked:	
Herring and sprats	2,001
Mackerel	1,808
Eels	705
Salmon and trout	514
Other	196
Total	5,224
Miscellaneous:	
Force meat 2/	1,708
Salted herring	127
Dry-salted cod	417
Other	1,279
Total	3,531
Industrial products:	
Fish meal	108,030
Fish oil	31,801
Fish solubles	11,829
Ensilage 3/	7,240
Total	158,900
1/Haddock, coalfish, hake, ling, etc. 2/Groundfish, milk and flour. 3/Chemically treated raw fish. Source: Preliminary data from Ministry of Fisheries.	

Based on 1963 data, the Fisheries Ministry estimates that about 85 to 90 percent of Denmark's fish meal and oil production is from whole raw fish and about 10 to 15 percent is from fish waste. On that basis, about 45,000 to 50,000 metric tons of fish were used for trout food, of which 90 percent was raw fish and 10 percent fish waste. About 120,000 to

Denmark (Contd.):



Fig. 2 - Danish fisherman standing on a typical live box or float in which live plaice are held for marketing in Fredrikshavn.

140,000 tons were used as food on fur-animal farms and for ensilage; about 75 percent (90,000 to 105,000 tons) was used on fur-animal farms. Of that amount, 60 to 75 percent (54,000 to 79,000 tons) was fish waste; 25 percent used for ensilage totaled some 30,000 to 35,000 tons. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, February 3, 1965.)

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AGAR-AGAR INDUSTRY, 1963:

Danish production of agar-agar in 1963 totaled 834 metric tons valued at 9.4 million kroner (US\$1.36 million), according to preliminary data. Total Danish exports of agar-agar in 1963 were 826 metric tons valued at 10.4 million kroner (\$1.5 million). The principal markets were West Germany with 291 tons, France 170 tons, the United States 31 tons, and Argentina 40 tons. (United States Embassy, Copenhagen, February 10, 1965.)



German Democratic Republic

REVIEW OF FISHING INDUSTRY AND PRODUCTION TARGETS:

The most important task facing East Germany's fishing industry is to become completely self-sufficient in its fishery production. That was the theme of an article in the East German publication Neues Deutschland, November 29, 1964, as published in a Norwegian fishery trade paper. The article reviews East Germany's fishing industry and plans for projected development to 1970. Included was detailed information on the investment and construction projects necessary to reach a total fishery production of about 400,000 metric tons in 1970, or about double the 1964 production. The production target set for 1964 was 182,500 tons. In December 1964 the same periodical reported that the 1964 production would be greater than the goal set and that it would for the first time exceed 200,000 tons of herring and other species. The same report stated that the production target for 1965 is 240,000 tons.

Reaching the planned goal in 1970 is based on developments so far. In 1950 the East German fishery catch totaled 26,600 tons and in 1963 it was 177,200 tons. In that same period canned fish production increased from 1,100 tons to 17,700 tons. While production goals in the original seven-year plan (1958-65) have been substantially met, consumption has not increased as planned. The consumption goal was 18 kilos (39.7 pounds) but was later reduced to 16.5 kilos (36.4 pounds) per capita in 1965. But the statistics show that consumption in 1963 was 13.7 kilos (30.2 pounds) as compared with 12.2 kilos (26.9 pounds) in 1955. This is an increase in total consumption from 219,000 tons in 1955 to not more than about 235,000 tons in 1963. The result may be seen in statistics for the East German imports of herring and fish which show total imports of 141,000 tons in 1955 and a decrease of almost 50 percent to 71,000 tons in 1963. Statistics for canned fish imports show a decrease of about 40 percent from 10,500 tons in 1955 to about 6,300 tons in 1963. In comparison, East Germany's total exports in that same period increased almost 100 percent. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, January 27, 1965.)



Ghana

FISHING INDUSTRY FAVORED BY CERTAIN TAX EXEMPTIONS:

The Government of Ghana allows "pioneer company" status to fish canners, ice manufacturers, and fish meal manufacturers. This status originally consisted of exemption from tax on profits for five years, but now the tax exemption may continue until the initial capital has been fully recovered.

Exemption from customs duties also is allowed on fish hooks, fish nets, and netting, and on the importation of all kinds of fish, except fish that is preserved only by chilling or freezing. Imported fish in that category carries a 10 percent ad valorem duty.

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FISHERY RESEARCH CENTERED ON BIOLOGY OF SARDINE:

Long-range marine biological investigation was begun in Ghana in mid-1962 under the technical assistance of the Food and Agriculture Organization (FAO). This research program has two main objectives: (1) a study of the biology of the sardine (*Sardinella auritata*) with special regard to bionomics and composition of stocks, and (2) a study of the composition of demersal fish stocks and the effect of fishing operations on those stocks.

Sardines account for about 60 percent of the total annual fishery catch of Ghana, and demonstrate the importance of that species in the fisheries of the nation. Studies were started on the biology and movements of the sardine, using the research vessel *Kokote* of the Fisheries Station at Tema. Studies are all being made on the decline of the fishery for the "apapa" (*Caranx hippos*), a jack species important in the Ghanaian fisheries.



Iceland

ICESSEL FISH PRICES SET FOR 1965:

A 5.5 percent increase in ex-vessel prices for groundfish caught on line and hooks in 1965 was announced January 12, 1965, by the Icelandic Fish Pricing Board. Prices are based on dockside delivery to the purchaser.

Following are selected 1965 Icelandic ex-vessel prices for hook and line landings of first grade groundfish, gutted and heads-on:

Species	Price	
	Kr. /Kilo	U.S.¢/Lb.
Halibut:		
2-20 kilos (4.4-44 lbs.)	9.50	10.03
Over 20 kilos (44 lbs.)	12.86	13.58
Cod:		
Large--over 57 cm. (22 in.) . . .	4.09	4.32
Haddock:		
Large--over 50 cm. (20 in.) . . .	4.38	4.63
Ling:		
Large--over 72 cm. (28 in.) . . .	3.23	3.41

For each species, ex-vessel prices range lower for smaller fish and fish of less than first grade. The price of third-grade cod and haddock for reduction is Kr. 0.84 a kilo (0.9 U. S. cents a pound). The price of ocean perch for reduction is Kr. 0.95 a kilo (1.0 U.S. cents a pound), while the price of ocean perch suitable for freezing is Kr. 3.34 a kilo (3.53 U.S. cents a pound).

The 1965 prices were set by the Government representative on a special 5-man arbitration committee. Both the arbitration committee and the full Fish Pricing Board were deadlocked when the Government representative intervened.

As part of the settlement of the price issue, the Government agreed to ask the Icelandic Parliament to provide a subsidy of Kr. 0.25 a kilo (0.26 U. S. cents a pound) for groundfish landings. (United States Embassy, Reykjavik, February 3, 1965.)

Note: Icelandic Kronur 43.0 equal US\$1.00.



Italy

SICILY EXPANDS ATLANTIC FISHING FLEET:

In November 1964, the new fishing vessel *Giovanni Primo* sailed from Palermo, Sicily, on her maiden fishing venture in Northwest African waters near the Canary Islands. The 149-ton refrigerated vessel was built in Italy at a cost of about 150 million lire (US\$242,000), and is equipped with modern navigational and sounding instruments. The *Giovanni Primo* joins the growing number of Sicilian fishing vessels which since late 1962 have been fishing in the Atlantic off the northwest African coast.

Developments in the last 2 years emphasize the tendency for Sicilian fishermen to switch from the Mediterranean Sea to the more fruitful Atlantic Ocean. In May 1963, a businessman from Northern Italy established two firms

Italy (Contd.):

in Palermo to engage in Atlantic tuna fishing. Both firms were authorized in 1964 to increase their working capital to 100 million lire (\$160,000). One firm plans the construction of four 900-ton fishing vessels, and the other firm plans four 1,500-ton fishing vessels. The new vessels are to be built in Italy and registered in Palermo by the end of 1966.



One of the new tuna firms is believed to have the participation of a Japanese fishing company which is said to have invested 30 million yen (\$83,330), or more than half of the firm's capital. The Japanese firm will probably conduct the Sicilian firm's tuna fishing operations for at least the first couple of years.

Other fishing firms with plans for Atlantic fishing were established in Sicily during the last 2 years with the expectation of aid from the Sicilian Government. However, the Regional Government appears to be doing little to help the Sicilian fishing industry, and several of the new firms now appear to

have financial problems. (United States Consul, Palermo, December 16, 1964.)

Note: See Commercial Fisheries Review, December 1964 p. 96, October 1964 p. 59.



Japan

ATLANTIC TUNA FISHING TRENDS AND EXPORT PRICES, FEBRUARY 1965:

Japanese tuna catches in the Atlantic Ocean in early February 1965 consisted largely of albacore and yellowfin tuna, with albacore running 20 to 30 percent more than yellowfin in the catches. But because of the lower albacore tuna price on the United States market Japanese tuna vessels fishing for that species are said to be gradually shifting to yellowfin.

Prices for Atlantic-caught albacore (frozen round) exported to the United States as of February 1965 were quoted at US\$275-280 a short ton f.o.b. West African port, the same as at the close of 1964. Sales were reported slow due to lack of buying interest among United States tuna packers.

Prices for Atlantic yellowfin (frozen dressed) exported to Italy were reported steady at about US\$425 a metric ton c.i.f. Indications of more claims because of dark meat in the yellowfin tuna shipped to that country were reported. (Suisan Keizai Shim bun, February 16; Suisan Tsushin, February 9, 1965.)

* * * * *

EXPORT VALIDATIONS OF FROZEN TUNA AND TUNA LOINS TO U. S., JANUARY-DECEMBER 1963-64:

Japan's export validations of frozen tuna and frozen tuna loins to the United States in December 1964 totaled 5,113 short tons. Of that total, 59.6 percent were albacore tuna, 18.6 percent yellowfin, 1.0 percent big-eyed, 8.8 percent skipjack, and 12.0 percent tuna loins.

During January-December 1964, Japan's export approvals amounted to 109,593 short tons, an increase of 28,749 tons or 35.7 percent as compared with 80,744 tons exported during the same period in 1963. On a species basis, albacore exports in 1964 were up 61.9 percent, yellowfin 13.4 percent, big-eyed 14.1

Jan (Contd.):

Japan's Export Validations of Frozen Tuna and Tuna Loins to U. S.,
January-December 1964 with Comparisons

Species	December 1964			January-December 1964			January-December 1963		
	Direct	Trans-shipped	Total	Direct	Trans-shipped	Total	Direct	Trans-shipped	Total
. (Short Tons)									
Albacore, round	933	2,114	3,047	25,284	34,213	59,497	13,610	23,127	36,737
<u>Yellowfin:</u>									
Round	-	385	385	-	1,920	1,920	-	962	962
Gutted and gutted:									
10/100 lbs.	252	121	373	25,543	4,131	29,674	21,568	4,269	25,837
100 lbs. up	27	-	27	2,408	-	2,408	1,675	-	1,675
Gutted with tail	-	163	163	87	4,700	4,787	-	4,438	4,438
Fillets	5	-	5	38	12	50	326	132	458
Total	284	669	953	28,076	10,763	38,839	23,569	9,801	33,370
<u>Beyed:</u>									
Gutted and gutted	-	3	3	30	42	72	24	4	28
Gutted with tail	-	49	49	-	250	250	-	240	240
Fillets	-	-	-	37	3	40	7	41	48
Total	-	52	52	67	295	362	31	285	316
Trefin, fillets	-	-	-	-	1	1	-	374	374
Sjack, round	-	450	450	8	3,585	3,593	70	3,693	3,763
<u>Ins:</u>									
Albacore	522	-	522	3,805	-	3,805	2,998	-	2,998
Yellowfin	89	-	89	3,496	-	3,496	3,029	-	3,029
Trefin	-	-	-	-	-	-	157	-	157
Total	611	-	611	7,301	-	7,301	6,184	-	6,184
Grand Total	1,828	3,285	5,113	60,736	48,857	109,593	43,464	37,280	80,744

Source: Japan Frozen Food Exporters Association.

percent, and tuna loins 18.0 percent, but skipjack was down 4.5 percent. (Fisheries Affairs, United States Embassy, Tokyo, January 25, 1965.)

NEW DEVELOPMENTS ON SUSPENSION OF CANNED TUNA EXPORTS TO THE UNITED STATES:

Difficulties surrounding the conclusion of a workable arrangement between the Japanese packers and exporters are said to be impeding the resumption of Japanese canned tuna in brine exports to the United States, which have been suspended since December 1964. Following the expiration on November 1964, of the 1964 Exporters Agreement,

the Japan Canned Foods Exporters Association has been unable to develop a new export agreement acceptable to the Tuna Packers Association, thus precluding sales transactions between packers and exporters.

A series of meetings has been held in recent weeks by Japanese packers and exporters to find ways and means whereby they could transact business in the absence of an export agreement. At a meeting held on February 8, 1965, the Packers Association adopted a provisional sales plan whereby it would offer for sale 290,000 cases of tuna packed in brine to exporters for shipment in February. On February 9, the Exporters Association held a meeting to deliberate on the packers' proposal, and after much debate, voted to accept it.

Japan (Contd.):

On February 10, the Exporters Association filed an application with the Ministry of International Trade and Industry (MITI) for an export license. However, MITI, which on February 5 had developed a provisional standard governing approval of quota allocations to exporters for the period ending February 28, 1965, asserted that the Export Trade Control Law precludes approval of export quotas not calculated on the basis of a definite allocation standard, and thus is reported to have refused to license the export of the 290,000 cases agreed to by the packers and exporters. The firm attitude of MITI has created another obstacle to be overcome before sales can be consummated between packers and exporters who now fear this development may further delay canned tuna exports to the United States for sale during the Lenten season. (Suisan Tsushin, February 8, 10, 15; Suisan-cho Nippo, February 13, 1965, and other sources.)

Note: See Commercial Fisheries Review, March 1965 p. 79.

* * * * *

JAPAN TO ASK SOVIETS FOR
120,000-TON SALMON CATCH QUOTA
FOR 1965 SEASON IN WESTERN PACIFIC:

Japanese and Soviet negotiators expected to meet March 1, 1965, in Tokyo, Japan, to set salmon and king crab catch quotas for 1965 in western Pacific waters regulated by the International Northwest Pacific Fisheries Commission. (Treaty waters north of 45° N. latitude are designated Area A; those south of 45° N. latitude are designated Area B). Japanese views on the negotiations were summarized in the Japanese periodical Tokyo Shim-bun, January 19, 1965, as follows:

(1) The Japanese Government, with industry support, will insist on a Japanese salmon catch quota in 1965 for Areas A and B combined of 120,000 metric tons (the same as in 1963, but up 10,000 tons from 1964). In support of their position the Japanese cite the theory of alternating lean and good salmon seasons which indicates 1965 will be a good year.

(2) The Soviets are expected to insist that salmon resources are declining. The Soviets will cite the poor Japanese salmon catch during 1964 in Area B which was 20 percent under the allowable 55,000-ton quota.

(3) The Soviet position on king crab fishing cannot be predicted because new factors have arisen such as the United States-Japanese agreement on king crab fishing in the eastern Bering Sea. In 1964, the northwest Pacific king crab production quota was set at 630,000 cases of 48 6.5-oz. cans (252,000 cases for Japan and 378,000 cases for the Soviet Union).

(4) An important factor in the background of the negotiations is that the Japan-Soviet fishery agreement is scheduled to be revised next year. In last year's negotiations, the 10 percent allowance above or below the quota permitted in Area B was deleted from the appendix to the fishery agreement. It is expected that in this year's negotiations, the Soviet side will again insist on stronger control measures, such as the entry into Area B of Soviet inspection vessels.

The Japanese were expected to insist that 1965 fishery negotiations be conducted separately from the proposed revision of the fishery agreement. (United States Embassy, Tokyo, January 25, 1965.)

* * * * *

VESSEL DECREASE PLANNED IN
BONITO-TUNA FISHING FLEET:

Japan's catch of bonito and tuna has been showing a downward curve since 1962. Because of that, the Japanese fishing industry has started to study a plan to reduce the number of bonito and tuna fishing vessels by 20 to 30 percent from the present number of vessels.

According to a survey made by the Japanese Fisheries Agency, bonito and tuna catches showed an upward trend, with 546,000 metric tons in 1960, 651,000 tons in 1961, and 724,000 tons in 1962. Following the peak in 1962, the catch started declining due to a decrease in the resource, and also due to keen competition. The catch in 1963 was 690,000 tons and in 1964 it was estimated to be between 670,000 and 680,000 tons. On the other hand the vessel tonnage for that fishery has shown an increase with a total of 250,000 tons in 1961, 274,000 tons in 1962, and 306,000 tons in 1963. As a result, the catch per vessel has declined in the past 1 or 2 years.

Further, the sale to South Korea by Japan of 11 tuna vessels has recently been approved. Those vessels were to start fishing for bonito

Jan (Contd.):

... tuna in the South Pacific about the spring of 1965. As a result, competition in fishing for those species will be even greater. (San Francisco, February 12, 1965, United States Embassy, Tokyo.)

See Commercial Fisheries Review, September 1964 p. 82.

CANNED SHRIMP EXPORTS, 1964:

Japan's exports of canned shrimp for the 12 months of 1964 totaled 547,497 cases (converted to 24 1/2-lb. cans) valued at US\$3.4 million. This was a decrease of 119,580 cases or 7.9 percent below the previous year's exports and the value was down 4.4 percent.

Japan's canned shrimp exports to the United States during the year were much lower--19,110 cases valued at \$976,973 or down 57.3 percent in quantity and 51.6 percent in value compared with the 1963 exports. The low exports to the United States were attributed to unfavorable market conditions in 1963 stemming from a large United States Gulf of Mexico canned shrimp pack and low prices.

Canned shrimp exports to Great Britain in 1964 were more than double (up 108.4 percent)

those in 1963 and the value increased proportionally (up 154.8 percent), but exports to other countries were lower. (Fisheries Attache, United States Embassy, Tokyo, February 17, 1965.)

TRAWLING IN GULF OF ALASKA LICENSED IN 1965:

The Japanese Fisheries Agency stated in early February 1965 that Japanese vessels would be licensed for trawling during 1965 in the Gulf of Alaska as far east as 135° W. longitude in an area north of 50° N. latitude. Japanese licenses for Gulf of Alaska trawling are to be issued to 20 trawlers (2 or 3 additional licenses may be approved later). The Japanese Fisheries Agency authorized 4 trawlers to enter the Gulf of Alaska fishery during February-May 1965. The remaining 16 trawlers are scheduled to enter in June and later months. Following are the names of the first group of trawlers with gross tonnage and scheduled entry into the Gulf of Alaska:

Takachiko Maru (3,490 gross tons) mid-February 1965.

No. 82 Taiyo Maru (2,800 gross tons) early March 1965.

Japan's Exports of Canned Shrimp, by Country of Destination, 1964

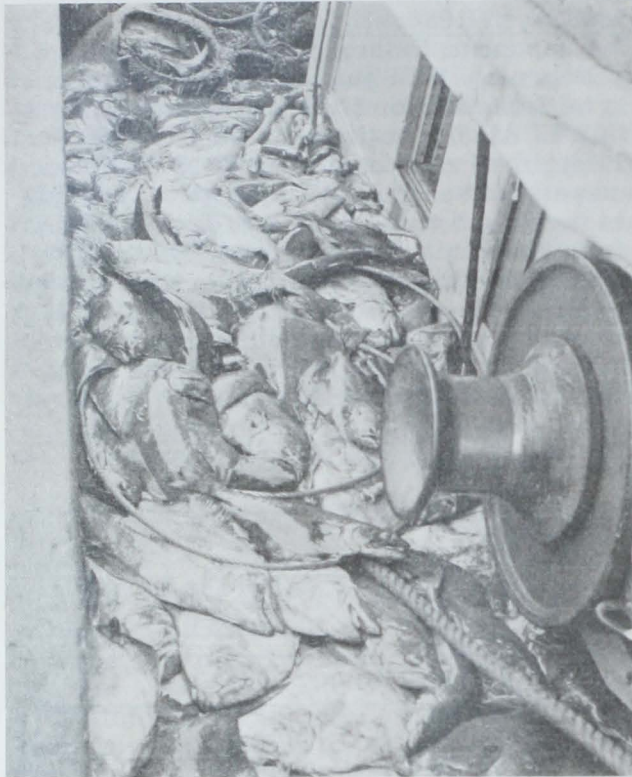
Cans per Case	Size	U. S.	Great Britain	Canada	France	Other Countries	Total
. (No. of Actual Cases)							
1-lb.	Small	-	100	-	-	1,970	2,070
1 1/2-lb.	"	44,631	112,002	5,136	10,285	6,756	178,810
1 3/4-lb.	"	2,130	15,943	-	-	-	18,073
1 1/4-lb.	"	250	5	-	500	120	875
1-lb.	Tiny	-	100	-	-	899	999
1 1/2-lb.	"	40,274	49,630	1,000	7,070	12,644	110,618
1 3/4-lb.	"	6,574	24,583	-	1,100	799	33,056
1 1/4-lb.	"	-	32,930	-	-	4	32,934
1-lb.	Broken	-	100	-	-	899	999
1 1/2-lb.	"	77,323	11,300	56,472	-	4,508	149,603
1 3/4-lb.	"	2,262	40,930	-	-	241	43,433
1 1/4-lb.	"	949	11,937	-	-	25	12,911
1 1/4-lb.	Mixed	-	12,658	-	-	-	12,658
. (Converted to Standard Cases of 24 1/2-lb. cans).							
Total 1964		168,910	265,461	62,608	18,405	32,113	547,497
Target for 1964		165,000	230,000	65,000	20,000	20,000	500,000
Total 1963		395,157	127,388	71,244	41,493	31,795	667,077
Value in US\$ 1964		976,973	1,750,893	335,611	115,880	195,331	3,374,688
Value in US\$ 1963		2,018,561	687,175	386,911	267,011	170,200	3,531,858

Source: Japan Canned Crab Sales Co. (Sales agent for canned shrimp).

Japan (Contd.):

No. 53 Akebono Maru (1,490 gross tons)
early March 1965.

No. 12 Daishin Maru (2,900 gross tons)
late May 1965.



Catch on the deck of a Japanese trawler operating in the Bering Sea and North Pacific.

The Japanese Fisheries Agency has stated that necessary regulatory measures will be issued for the Gulf of Alaska trawl fishery, including those needed to implement international agreements. (United States Embassy, Tokyo, February 4, 1965.)

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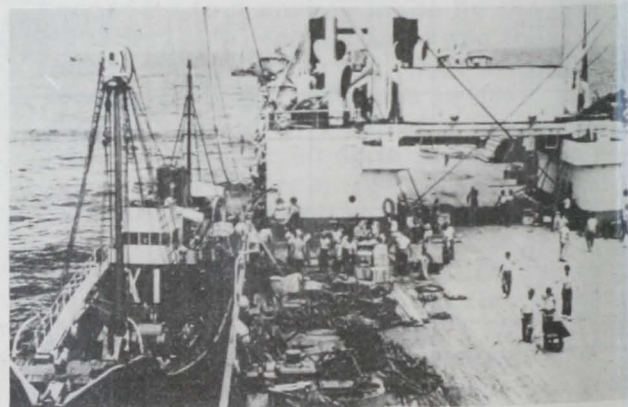
JAPANESE VIEWS ON ANTARCTIC WHALING SEASON QUOTA:

The outlook of the three Japanese whaling companies participating in the 19th Antarctic Whaling Expedition is not very promising, according to an article translated from the Japanese periodical Nihon Keizai, January 11, 1965. The reasons given are: (1) whale resources are decreasing throughout the world, especially in the Antarctic; (2) most nations affiliated with the International Whaling Com-

mission (made up of 17 fishing countries) are showing a mounting tendency toward reducing the total catch quota. . . . Depending on the progress of the proposed new whaling conference and the 17th Annual Meeting of the International Whaling Commission to be held at London in June 1965, it is expected that Japan's current seven-fleet whaling operation numbering three companies will be affected by a decision on reducing the number of vessels.

The whaling operations of the three Japanese whaling companies have consisted of 7 fleets since the 15th whaling expedition (1960/1961 season), with one company having 3 fleets and the other 2 companies each having 2 fleets. The total catch by the 7 fleets amounted to 5,980 blue-whale units (an average of 854 per fleet) in the 15th expedition, 6,574 (939 per fleet) in the 16th expedition, 6,150 (878 per fleet) in the 17th expedition, 4,600 (657 per fleet) in the 18th expedition, and a quota of 4,160 blue-whale units (594 per fleet) in the 19th expedition. It can be seen that the whale catches have been gradually decreasing, with that of the 16th expedition as the peak catch.

The Japanese whaling companies say that although operating expenses differ in each fleet according to depreciation, about 600 units is the minimum to meet expenses. The catches in the present expedition have already fallen below that figure. For the 7 fleets to carry out whaling operations in the future, a catch of at least about 4,160 blue-whale units, as in the 19th expedition, is considered necessary.



Whale catcher boat alongside Japanese factoryship to receive supplies and fuel.

At the Annual Meeting of the International Whaling Commission held in June 1964, the

Japan (Contd.):

United States, which is among the nonwhaling nations, proposed that the annual quota for the three whaling nations (Japan, the Soviet Union, and Norway) be 4,000 units in the 19th expedition, 3,000 in the 20th, and 2,000 in the 21st. As a result, that proposal was not adopted because of the opposition by the whaling nations, and also the opposition of former whaling nations such as the Netherlands and United Kingdom, and it was decided after consultation among the whaling nations that the quota for the 19th expedition would be 8,000 blue whale units.

This is the first time in whaling history that the catch quota has not been officially decided upon at the annual meeting, although an agreement was reached through consultation among the whaling nations. . . .

Against the tendency of reducing the Antarctic whale catch quota, the Japanese have filled the gap by purchasing whaling motherships from Norway, Great Britain, and the Netherlands with the whaling rights attached. But it is felt that most foreign idle vessels with whaling rights have already been purchased, the Japanese Fisheries Agency also considers that steps for maintaining 7 Japanese whaling fleets by purchasing foreign motherships should no longer be taken.

As a result, one of the Japanese whaling companies is beginning to make a full-scale study of a plan to keep one of the present two fleets inactive. That company is considering plans such as the scrapping of motherships, reassignment of auxiliary catcher boats to whaling at the South Georgia Island base, and reassignment of auxiliary catcher boats to whaling at the South Georgia Island base, and reassignment of crew members.

The other 2 companies, on the other hand, have no intention of decreasing their vessels at present, and have not abandoned the idea of purchasing idle Norwegian motherships to maintain their present fleet organization. (Min. Keizai, January 11, 1965, United States Embassy, Tokyo.)

JOINT FISHING ENTERPRISES WITH FOREIGN COUNTRIES:

Joint fishing enterprises between Japanese firms and foreign fishing firms cover a wide

range of operations including fishing for tuna and tuna canning, trawling, whaling, cold-storage bases, fish meal production, and pearl culture.

The Japan Fishery Agency has listed a total of 31 Japanese overseas fishing ventures, 30 of which were active as of January 1965. In addition, 10 Japanese firms are performing services for the pearl industry of Australia, Burma, Thailand, Malaysia, and the Philippines.

Japanese companies have 12 bases in operation in Central and South American countries (Venezuela, Brazil, Argentina, British Bahamas, Guatemala, Peru, Netherlands Antilles); 10 bases in Asia and Oceania areas (India, Ceylon, Malaysia, Burma, Ryukyu Islands, New Hebrides, Hong Kong, Fiji Islands); 4 bases in Africa (Ivory Coast, Nigeria, Madagascar; Las Palmas, Canary Islands); 2 bases in Europe (Portugal and Italy); 1 base in Israel; 1 base each in the United States and Canada. Some of the bases were established as early as 1953 and more recently in 1964. (Fisheries Attache, United States Embassy, Tokyo, January 29, 1965.)

FISHING VESSEL LICENSES IN EFFECT DECEMBER 31, 1964:

The worldwide range of Japanese fisheries is indicated by a recent summary of vessel li-



Fig. 1 - Wooden trawler with gear in water fishing for mothership in Bering Sea.



Fig. 2 - Japanese factoryship freezing shrimp and Pacific ocean perch in Bering Sea.

Japan (Contd.):

Vessels Licensed for Major Fisheries by Japanese Fishery Agency, as of December 31, 1964						
Fishery	Vessel Tonnage Limits	Total Vessels Licensed	Area of Operation	Principal Species in Fishery	License Period	License Expiration Date
	Tons	Number			Years	Date
Tuna fishery, other than mothership:						
High seas	Over 50	1,329	Pacific, Indian, and Atlantic Oceans Pacific Ocean--North of 10° N. latitude and west of 160° E. longitude	Bonito, tuna, marlin, swordfish, shark	5	8/31/67
Near seas	Under 50	1/1,850				
Tuna fishery, <u>mothership</u> :						
Motherships	Over 500	45	Pacific, Indian, and Atlantic Oceans			
Catcher vessels	Less than 20	119				
Motherships	3,000	3	Pacific Ocean--north of equator and east of 170° W. longitude; south of equator and east of 170° E. longitude.			
Catcher vessels	Over 50	165				
Salmon fishery, other than mothership	Over 30	283	North Pacific Ocean North Pacific Ocean--south of 45° N. latitude	Salmon	1	3/31/68
Salmon fishery, other than mothership	Over 10	369				
Salmon fishery, <u>mothership</u> :						
Motherships	Over 5,000	11	North Pacific Ocean			
Catcher vessels	Over 50	369				
Crab fishery:						
Motherships	Over 2,000	4	West Kamchatka	King crab	1	12/31/67
Catcher vessels	Over 50	16				
Hanasaki vessels	Over 20					
Motherships	Over 2,000	3	Bering Sea		1	12/31/67
Catcher vessels	Over 50	13				
Hanasaki vessels	Over 20	27				
Trawling, other than mothership	Over 15	1,147	Offshore areas near Japan (east of 128°, 40° E. longitude)	Halibut, cod, Atka mackerel, Zuai crab	5	7/31/67
	15-550	785	East China Sea-Yellow Sea (west of 130° E. longitude)	Croaker, seabream, halibut, flounder	5	8/31/67
	15-3,000	201	Bering Sea, Africa, New Zealand	Cod, rockfish, seabream, cuttlefish, squid, octopus, croaker, shrimp, lobster		
Trawling, <u>mothership</u> :						
Motherships	1,400	14	Bering Sea	Halibut, flounder, cod, croaker	1	1/31/67
Catcher vessels	50-500	228				
Long line and gill net	100-463	19	Bering Sea	Cod, croaker	5	8/31/67
Purse-seine (large and medium)	Over 40	734	North Pacific, Japan Sea, East China Sea, and Yellow Sea	Sardine, horse mackerel, mackerel, tuna	5	10/31/67
Whaling, <u>coastal</u> :						
For large whales	Less than 450	22	Off coast of Japan	Baleen whales (excluding mink whales), sperm whales	5	11/30/67
For small whales	Less than 40	19	Off coast of Japan	Mink whales, toothed whales	5	10/31/67
Whaling, <u>mothership</u> :						
Motherships	10,000	7	Antarctic	Baleen and sperm whales	5	10/11/67
Catcher vessels	300	91				
Motherships	10,000	3	North Pacific			
Catcher vessels	300	21				

1/Entry into fishery not yet approved.
Source: Japanese Fishery Agency.

Japan (Contd.)

cesses issued by the Japanese Fishery Agency, Fisheries Attache, United States Embassy, Tokyo, December 23, 1964.)



Malaysia

JOINT FISHING VENTURE WITH JAPAN PLANNED:

A joint Japanese-Malaysian fishing venture was proposed during a visit to Southeast Asia in early 1965 by a 29-man Japanese trading mission from Kochi Prefecture. The Mission spent two days in Kuala Lumpur where it met with the Malaysian Assistant Minister of Commerce and Industry, and members of various Chambers of Commerce and manufacturers to discuss and investigate local trade conditions. Details of the proposed joint venture are expected to be worked out in the near future.

Under the proposed venture, the Kochi Prefecture fishing fleet would fish in the Indian Ocean and in Malaysian waters. The Prefecture would offer to the Malaysian Government scholarships on marine and fisheries. The Japanese further expressed their willingness to send to Malaysia experts on trawler fishing to help the Malaysian Fisheries Department. It is expected that a group of Japanese businessmen connected with shrimp industries will visit Kuala Lumpur during summer 1965 for discussions on working out a fishery and other joint ventures. The leader of the Japanese Mission stated that this visit had revealed tremendous potentialities in Malaysia for foreign businessmen to set up joint ventures. (United States Embassy, Kuala Lumpur, January 26, 1965.)

Note: See Commercial Fisheries Review, February 1964 p. 76.)



Mexico

SHRIMP CATCH ON WEST COAST POOR DURING 1964/65 SEASON:

Because of poor catches since the Mexican West Coast shrimp fishing season started in September 1964, at least 300 shrimp vessels operating out of Guaymas in the State of Sonora, Mexico, discontinued fishing as of February 1965. The shrimp catch there

has so far been at least 20 percent less than at the same time last season and the vessel operators are reported as having no intention of resuming fishing this season. The lower income to the vessel operators and fishermen combined with State and Federal taxes precludes any further operation of the vessels.

Probably the most restrictive condition imposed on the fishing industry has resulted from the terms of the contracts between the vessel owners and the cooperatives, the members of which comprise the crews. The contracts provide that the vessel owners receive 55 percent of the income while the 45-percent balance goes to the cooperatives. During a good or average season, the owners report they can operate adequately with that income-splitting ratio, even though the cooperatives bear only about 37 percent of the operating costs. But during a poor season such as the present one, both the owners and the cooperatives operate at a disadvantage although the owners claim they bear the greatest burden. The contracts are due to be renegotiated in September 1965 and in all likelihood the owners will use this season's (1964-65) difficulties as a lever in their attempts to lower the percentage received by the cooperatives, or to raise the proportionate level of the expenses assumed by the cooperatives.

Appeals have been made to the Governor of the State of Sonora to reduce state-imposed taxes. He has also been asked to intervene on behalf of the shrimp industry with federal authorities to reduce federal taxes. So far no action has been taken on reducing such taxes. Relations between the vessel owners and the cooperatives are cordial and they appear to be working together in their efforts to find a temporary solution to some of their problems.

Reports from other sections of the shrimp fishing industry confirm that all other Mexican West Coast shrimp ports share the same problem. Fishing has been poor ever since the season opened, all the way from the Gulf of California to the Guatemala border. Although the open season runs until May 1965, everyone is said to be discouraged. But for the higher shrimp prices, the poor fishing during the present season would have resulted in a much worse situation.

Unlike the 1963/64 season when vessel owners and cooperatives were in bitter disagreement, all now realize that they share a mutually difficult position and must work together.

Mexico (Contd.):

Improvement in the present economic condition of most of the cooperatives is being considered in high government levels. (Fishes Attache, United States Embassy, Mexico, February 17, 1965.)



Nigeria

U. S. FIRMS PLAN AFRICAN FISHING VENTURES:

At least four United States groups are interested in commercial fishing off Nigeria on the African Atlantic Coast. Two separate U. S. firms were in Nigeria early in 1965 carrying out shrimp fishing surveys. (Shrimp off Nigeria are of the Penaeus duorarum species and correspond to Gulf of Mexico pink shrimp, according to a marine biologist with the Food and Agriculture Organization.)

Following is a summary of the plans of four U. S. groups involved in Nigerian fishing projects:

(1) Two 70-foot shrimp trawlers belonging to a U. S. businessman completed a 10-day trial fishing run off Nigeria on January 20, 1965. During the trial run, the 2 trawlers each made about 17 drags of from 45 minutes to 4 hours duration. Area covered by the vessels was from Lagos to east of the Bonny River mouth. Each vessel's catch--which was exploratory and not representative of a typical commercial load--amounted to about 1,000 pounds of heads-off shrimp and 5,000 to 6,000 pounds of mixed fish. Size of shrimp averaged 21-25 count a pound heads-off. The best catches were in depths of from 10-20 fathoms; there was little difference between day or night fishing.

The U. S. businessman who conducted the shrimp survey in January is backed by a New York fisheries firm and he is associated with an Iraqi concern with Nigerian interests. He plans to bring to Nigeria 4 additional trawlers of up to 80 feet in length. Shrimp grading and freezing equipment is to be installed on the vessels. Their catch would then be processed at sea and brought to Lagos for transshipment to the United States. Until the processing equipment is installed, catches will be sold to a Nigerian cooperative at Apapa for local distribution.

(2) Another U. S. businessman arrived in Nigeria on January 10, 1965, to conduct a 2-month shrimp survey under an investment survey grant from the U. S. Agency for International Development (AID). He brought in several 20- to 30-foot nets specially designed for heavy mud bottoms, such as are common off the Niger River delta. The nets will be rigged aboard a 50-foot trawler loaned by the Nigerian Government. The survey will be carried out along the entire Nigerian coast. Special attention will be given to the area of Calabar. If the survey proves the feasibility of a large-scale operation, U. S. interests propose to establish a Nigerian shore base (packing, freezing, and cold-storage plants) which would involve an investment of between US\$2 to 4 million over a 2-year period. Calabar and the Port Harcourt area have been mentioned as possible locations for the base.

If it develops as planned, the project could employ 50 steel shrimp trawlers, some of which might be built locally. Twenty shrimp vessel captains would be brought in to train Nigerian crews.

Pioneer status for the venture may be granted by the Nigerian Government, which would clear the way for production to begin within 6 months. Full production could be reached within a year.

Capacity of the operation as planned would be about 5 million pounds of frozen shrimp annually. Talks have been held with a shipping company to determine if it has adequate refrigerated vessels to haul 200,000 pounds of frozen shrimp every 2 weeks from Nigeria to the United States. Assurances were given that this could be done, but the initial freight rate quoted (7 U.S. cents a pound) might cause problems.

(3) Other U. S. groups are known to be planning fishing ventures in Nigeria. A large U. S. company in Gloucester, Mass., will shortly undertake an AID investment survey in Nigeria. If feasible, the company will undertake a seafood processing operation in Nigeria involving an investment of up to \$1.5 million, excluding fishing vessels.

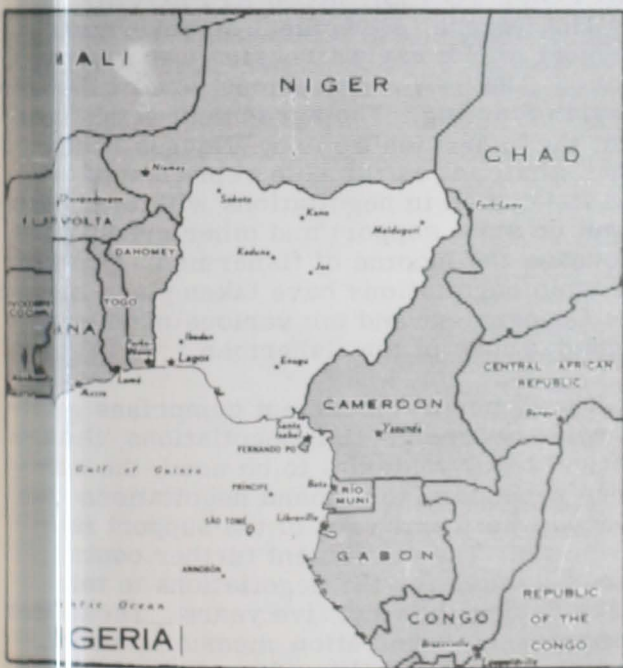
(4) A New York firm announced on December 20, 1964, in the New York Times the conclusion of an agreement to invest \$24 million during the next 10 years in a fishing complex in Western Nigeria. (United States Embassy, Lagos, January 29, 1965.)

* * * * *

Nigeria (Contd.):

EXTENDED SURVEY TO BE MADE OF SHRIMP RESOURCES:

A shrimp trawling survey of Nigerian coastal waters was to be started about February 1, 1965, by the Federal Fisheries Service of Nigeria. The survey, to be carried out by the research vessel *Kiara*, will extend over a one-year period covering 2 rainy seasons and dry seasons, and will cover the Continental Shelf out to a 100-meter (328-foot) depth. Transects will be about 15 miles apart, 6 stations to be made on each transect. The survey is designed to provide more detailed information on Nigerian waters to supplement that obtained from the Guinean trawling Survey conducted by the Commission for Technical Cooperation in Africa (CCTA) for the coast of the Gulf of Guinea from Dakar to Pointe Noire. (Results of the Guinean Trawling Survey are expected to be published late in 1965.)



The results of this survey of Nigerian shrimp resources will be of interest to the several United States and Nigerian companies now participating or concerned with the development of a shrimp industry in Nigeria. (Regional Fishery Attache, United States Embassy, Abidjan, January 27, 1965.)

Note: See *Commercial Fisheries Review*, September 1964 p. 86; March 1964 p. 1.

TWO SHRIMP TRAWLERS ORDERED FROM JAPAN:

Two shrimp trawlers were ordered from a Japanese shipyard by a Nigerian fishery

company at Lagos. The trawlers are expected to be delivered about July 1965 and will fish in Nigerian waters under Japanese captains and engineers, but probably with Nigerian crews. One of Japan's largest fishing companies has agreed to buy all of the shrimp production from the two new vessels for the first five years of the operation. Packing and freezing of the shrimp will be done at the Lagos plant.

This is another indication of the rapidly growing interest in the shrimp resources of Nigeria which are being actively investigated by United States firms. (Regional Fisheries Attache, United States Embassy, Abidjan, January 27, 1965.)



North Korea

DUTCH-BUILT FREEZER FISH-FACTORY VESSEL DELIVERED TO NORTH KOREA:

A new freezer fish-factory vessel of 7,000 deadweight tons built by a Netherlands shipyard in Rotterdam was reported to have been delivered to a North Korean firm in Pyongyang on January 30, 1965.

Daily freezing capacity of the new vessel is 100 metric tons in vertical-plate freezers and 20 tons in a freezing tunnel. Cold-storage capacity of the vessel is 7,500 cubic meters (about 265,000 cubic feet). The vessel is powered by a diesel engine of 6,000 horsepower. (United States Embassy, The Hague, February 5, 1965.)

Note: See *Commercial Fisheries Review*, November 1964 p. 98; April 1964 p. 76.



Norway

EXPORTS OF CANNED FISH, JANUARY 1-OCTOBER 31, 1964:

Norway's total exports of canned fish during January 1-October 31, 1964, were up about 6 percent from those in the same period of 1963, due mainly to larger shipments of canned brisling and canned soft herring roe. There was a slight decline in exports of canned small sild sardines.

The packing of sild sardines in 1964 started in early May and by November 21, 1964, a total of 662,206 standard cases of small sild had been packed, compared with 679,717 cases in the same period of 1963. Most of that pack

Norway (Contd.):

was smoked sild. Unsmoked sild accounted for only 48,659 cases of the 1964 pack and 49,044 cases of the 1963 pack.

Norwegian Exports of Canned Fish		
Product	1/ Jan. 1-Oct. 31, 1964	Jan. 1-Nov. 2, 1963
 (Metric Tons). . . .	
Brisling	5,402	4,575
Small sild	11,937	12,225
Kippered herring . . .	2,740	2,625
Soft herring roe	1,089	672
Sild delicatessen . . .	410	405
Shellfish	1,443	1,321
Other fishery products	2,610	2,422
Total	25,631	24,245
1/Preliminary.		

As usual, the brisling canning season closed October 15. The 1964 brisling pack totaled 377,801 standard cases, compared with 282,039 cases in 1963.

Mackerel landings in 1964 for canning purposes totaled 1,722 tons as of November 14, 1964, compared with 1,577 tons in the same period of 1963.

For January to August 1964, Norwegian total canned fishery exports of 19,400 tons were valued at Kr. 98 million (US\$13.7 million), compared with 17,400 tons valued at Kr. 88 million (\$12.3 million) in January-August 1963.

The United States was the main market for Norwegian exports of canned fishery products in January-August 1964 with 6,495 tons valued at Kr. 35.2 million (\$4.9 million), followed by the United Kingdom with 5,397 tons valued at Kr. 29.4 million (\$4.1 million). Other markets were the South Africa Republic with 1,160 tons, Czechoslovakia with 1,089 tons, Australia with 1,021 tons, and Canada with 568 tons. With the exception of sales to the United States, canned fish deliveries to all major markets in January-August 1964 were running ahead of the same period in 1963. Shipments to the United Kingdom were up 1,317 tons and Kr. 8 million (\$1.1 million). The decline in shipments to the United States was 270 tons in quantity and Kr. 2.7 million (\$378,000) in value. (Norwegian Cannery Export Journal, December 1964.)

* * * * *

FISHERY TRADE WITH EAST GERMANY, 1964 AND 1965:

According to press reports, Norwegian firms plan fishery exports to East Germany in 1965 totaling about Kr. 31 million (US\$4.3 million), which would be about the same as in 1964. The 1965 fishery exports to East Germany are to include: fresh and processed fish valued at Kr. 15 million (Kr. 16.5 million in 1964); fish meal Kr. 10 million (Kr. 8 million in 1964); canned fish Kr. 5 million (same as in 1964); and sperm oil Kr. 850,000 (Kr. 1 million in 1964).

Fishing vessels are included on a list of items which Norway may import from East Germany. (United States Embassy, Oslo, December 16, 1964.)

* * * * *

GENERAL AGREEMENT ON GOVERNMENT SUPPORT TO FISHERIES APPROVED:

The General Agreement on government support to Norway's fisheries was approved June 3, 1964, by a unanimous vote of the Norwegian Storting. The agreement establishes that the fishermen's union, "Norges Fiskarlag," shall act as the sole representative of the fishermen in negotiations with the Government on state support and other measures to increase the income of fishermen. Previously, such negotiations have taken place between the Government and the various marketing organizations of the fishermen.

The General Agreement comprises general rules concerning the negotiations, the statistical basic material to be used, the conditions necessary to demand negotiations to be opened, the framework of the support measures, etc. The agreement further contains specific rules for the negotiations to take place during the first five years. These rules comprise modernization measures to increase the profitability of the fisheries, as well as social measures to be carried through during the period covered. (United States Embassy, Oslo, January 18, 1965.)

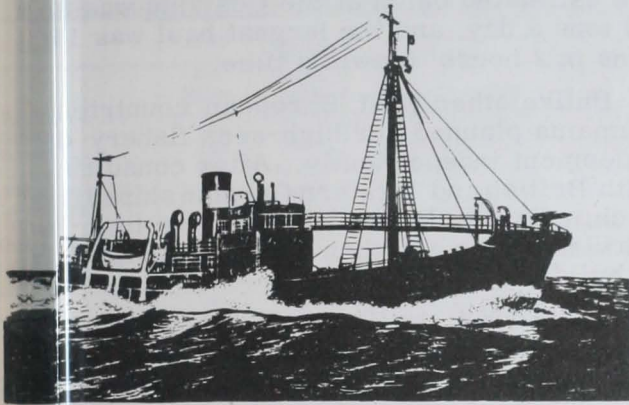
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EARLY RESULTS OF 1964/65 ANTARCTIC WHALING SEASON:

The Norwegian whaling fleet produced on 14,195 barrels of whale oil and 21,315 barrels of sperm oil during the first 15 days of operations in the 1964/65 Antarctic whaling expedition.

Norway (Contd.):

It is reported the Norwegian Whaling Association. This compares with 27,405 barrels and 10,592 barrels, respectively, as against the first 17 days of the 1963/64 season.



Norwegian whale catcher boat used in Antarctic.

It is conjectured that the Norwegians will probably not catch their quota of whales for the 1964/65 season. (United States Embassy, Oslo, January 18, 1965.)



Pakistan

FAO EXPERT FINDS GREAT SCHOOLS OF CATFISH IN GANGES DELTA AREA:

High quality catfish that feed on rice have been found in East Pakistan in mile-wide schools over fishing grounds practically untouched by hook or net. The discovery was reported by an Icelandic master fisherman with the Food and Agriculture Organization (FAO) who recently completed a 3-year assignment in Pakistan. He found immense catfish schools in the Shahbazpur River of Pakistan while conducting exploratory fishing from a 72-foot vessel. "We had an echosounder on board and at first I couldn't believe the readings," he said. "The whole river bottom seemed to be alive with fish."

At one point, using a bottom trawl, the FAO expert and his Pakistani companions caught 5 tons of catfish in a short period of minutes. The team fished the Shahbazpur off the coast from April through November 1964 and caught an average of 677 pounds of catfish an hour. The team averaged 618 pounds an hour during April, 741 pounds in May, and 1,129 pounds in November. The catfish caught

ranged from 1 to 43 pounds in weight. In East Pakistan and neighboring east India the fish is known as "pangas."

"The good thing is that the Shahbazpur 'pangas' feeds on rice floating down the river. This makes its meat particularly clean and tasty," the FAO expert said. The rice comes from paddies along two of Asia's great rivers, the Ganges and the Brahmaputra. During June, July, and August the southwest monsoon hits the foothills of the Himalayas and causes one of world's heaviest rainfalls. The Brahmaputra floods then and covers the rice fields. Millions of rice grains are washed into the rivers.

The rice floats downstream and flows into the Shahbazpur and other rivers of the Ganges Delta where it gathers in underwater gullies and pits, and attracts the rice-eating fish in great numbers. In December 1964, a Pakistani commercial fishing vessel, the M.F.V. Sayera, was guided to the Shahbazpur where it caught 27,480 pounds of catfish in 3 hours and 20 minutes of trawling.

The FAO master fisherman says he has no doubt that these grounds, all but untouched by commercial trawling operation, could supply several thousand tons per year of top-quality catfish to protein-hungry areas of East Pakistan. "The East Pakistanis and their nearby Indian neighbors already like catfish," he said. "It is one of the most popular local fish. I've never seen finer catfish than those that feed on rice in the Ganges Delta." (Food and Agriculture Organization, Rome.)



Peru

ANCHOVY POPULATION PRESENTLY SHOWS NO SIGN OF DEPLETION:

The explosive growth of the anchovy (Engraulis ringens) fishery off the coasts of Peru and Chile has caused concern regarding the status of that resource. In 1963, over 7 million metric tons of anchovy were landed in the two countries, and it is estimated that the catch was even greater in 1964. Recent studies carried out by the Marine Resources Research Institute in Peru have shown no indication of overfishing to date. Experience in the anchovy fishery, however, at high levels of production has not extended over a sufficient number of years to enable an authoritative de-

Peru (Contd.):

termination of the maximum sustainable anchovy yield.



Portugal

1964 SARDINE FISHING SEASON REPORTED ONE OF BEST:

Portugal's 1964 sardine fishing season closed January 15, 1965, with reports that the catch was one of the largest and most profitable in several years. Complete data for the 1964 sardine catch are not yet available.

According to press reports from Oporto, the port of Matosinhos continues to be the largest sardine fishing center in Portugal. Some 120 fishing vessels operated out of that port during the 1964 season. The new sardine fishing season is scheduled to open on April 16, 1965. (United States Embassy, Lisbon, January 30, 1965.)



Rumania

TWO LARGE STERN TRAWLERS FISH OFF NORTHWEST AFRICA:

Rumania's two stern trawlers, the Costanta and the Galati, started fishing off the northwest coast of Africa in January 1965. Up until that time they had fished in the Norwegian Sea near the Faroe Islands.

Both vessels have a displacement of 3,600 gross tons, are over 280 feet long, and have a speed of 13.7 knots. They are considered the largest stern trawlers in the world. They can trawl at the bottom or in midwater, have a freezer holding capacity of 58,269 cubic feet and a fish-meal holding capacity of 18,187 cubic feet. Each vessel carries two 20-gross-ton boats for purse-seining and long-lining.

Rumania's first two deep-sea fishing trawlers were ordered from a Japanese shipyard at Hitachi in October 1962, at a cost of US\$2.8 million for each vessel. The terms were a 30 percent down payment and the balance payable in semiannual installments over a period of 5 years. The vessels were delivered in the spring of 1964.

Under the terms of purchase, fishing trials could not be conducted in Japanese waters. The Costanta (with 20 Japanese instructors aboard) went on its maiden voyage to New Zealand, while the Galati fished with the Soviet ocean perch expedition in the Western Aleutians. In New Zealand's western waters, the estimated catch of the Costanta was about 80 tons a day, and the largest haul was 15-20 tons in 2 hours' trawling time.

Unlike other East European countries, Rumania planned her high-seas fishery development independently. After consulting with British and Western German shipbuilding architects, the Rumanians draw up their own trawler design and then contracted with Japan to build the vessels.

In late 1964, the fishery ties between Japan and Rumania were further strengthened with the conclusion of long-term contracts for delivery by Japan of large quantities of frozen mackerel.

Note: See Commercial Fisheries Review, July 1964 p. 55; March 1964 p. 67.



Uganda

COMMERCIAL FISHERY BEING DEVELOPED

With its 13,600 square miles of major lakes and many rivers and small lakes, Uganda, Africa, has a very considerable potential for the development of a commercial fishing industry. Actual commercial fishing only started in 1910 when gill nets were imported for use on Lake Victoria. Prior to that, fishing was on a subsistence basis involving hooks, spears, basket traps and similar locally-made devices. Records of early commercial catches are sketchy but it is known that until 1927 only the Lake Victoria fishery was developed to any extent and then primarily, for only one kind of fish, Tilapia esculenta (locally called ngege).

The potential importance of the lake fisheries was recognized by surveys between 1927 and 1931. The recommendations based on the surveys resulted in the creation of a Fisheries Section of the Game Department in 1931. It became a separate department in 1961 responsible for developing and controlling the fisheries. Its headquarters is in Entebbe on Lake Victoria and it maintains a 30-acre fish farm at Kajansi and has officers in the various fishing areas. Its aim is to obtain the maximum sustainable yield of fish to supply both home and export markets.

Many waters which naturally did not contain fish of commercial value were stocked with tilapia. The best example of those early plantings of fish are those of the Koki lakes and Lake Nakivalli which were stocked in 1935 and now regularly produce 2,000 tons of Tilapia nilotica a year.

PRODUCTION AREAS: The main producing areas in Uganda are Lakes Victoria, Edward, George, Albert and Kyoga, where gill-netting, beach-seining, basket-trapping, and long-lining are the methods most commonly used. Ngege (Tilapia) is still the main econom-

Uganda (Contd.):

ice species but many other species of fish find a ready sale including Nile perch, catfish, lungfish, elephant-snout fish, and the sardine-sized *Haplochromis*. The crocodile trapping industry produces a few thousand skins each year for overseas and local markets.

to the extent that farmers were fishing in their own backyards.

Annual consumption of fish in Uganda now averages 18.6 pounds per capita as compared with 25 pounds in the United Kingdom. But there are wide variations between districts; the Batoro still eat very little fish because of local prejudices whereas surveys show that the Acholi in the Gulu area now eat over 50 pounds per capita a year. The prejudices against fish eating which previously affected Kigezi, Ankole, and Bunyoro are breaking down rapidly.

MARKETING AND PROCESSING: In general, marketing is done by itinerant fish dealers of whom some 7,000 were licensed in 1961. Although the majority still deliver their fish by bicycle, an increasing number are using motorcycles, truck, or rail transportation. In the Lake George-Edward region, marketing is a commercialized operation and there are two modern fish-processing plants. One of the plants is at Kasenyi on Lake George and is equipped with blast and plate-freezers, salting vats, and a fish-meal plant. The second plant is at Katunguru on the Kazinga Channel which has similar facilities. Both plants supply fresh and quick-frozen fish by rail and road to markets throughout East Africa and salt-cured fish to the Congo, and also to local markets. African processors at Katwe on Lake Edward have invested considerable sums in permanent salting vats and hot-smoking pits. At the end of 1961, a third fish-freezing plant for the area was built at Kabatoro near Lake Edward to produce whole frozen fish for sale through the company's own retail-wholesale fish shop in Kampala.

Many improvements in the marketing segment of the fishing industry have taken place in the last three years by the building of warehouses and the installation of basic services at major landing points, and also by improvements to road communications to the lakes. The improvements have resulted in the processing of fish under more sanitary conditions and its transport in sizable quantities from the lake-shore to the major markets. In 1961 a new fish market at Mases in Jinja was opened and the good facilities there were used to advantage by both fishermen and fish dealers. At Katwe on Lake Edward a start was made on the installation of a piped water supply to both the residential area and the fish-curing establishments. Plans were approved and funds were voted for the construction of a fish market at Soroti and for dried fish stores in Teso and West Nile. A new all-weather road connecting Ntoroko to Fort Portal was built in 1962 to open up the fishing industry at the south end of Lake Albert.

VESSEL CONSTRUCTION: There are about 5,800 licensed fishing canoes in Uganda. The Fisheries Department has encouraged the use of powered canoes to increase their range and there are now some 1,400 canoes with outboard engines, the remainder being hand-propelled. The Uganda Credit and Savings Bank provides loan facilities to reliable fishermen for fishing gear, vessels, curing facilities, and transportation.

Instructions in vessel building are given at Masindi Technical School. Students who have completed the course either set up their own boatyard or join one that is already established.

FISHERIES RESEARCH: There has been a considerable program of fisheries research in Uganda which

Table 1 - Uganda's Fishery Production by Lake, 1951-61

Lake	Area Sq. Miles	1961			1951
		Quantity Metric Tons	Value		Quantity Metric Tons
			£	US\$	
Victoria	10,961	23,000	1,150,000	3,220,000	10,000
George	104	10,451	418,040	1,171,000	5,622
Edward	235	12,866	402,500	1,127,000	2,500
Kyoga	880	10,000	300,000	840,000	4,000
Albert Nile	1,385	1,935	77,400	217,000	1,200
Lake Kyoga	57	1,936	58,080	162,000	500
Other lakes, dams, rivers and fish ponds	73	60,188	2,406,020	6,737,000	23,822
Total	13,695				

fisheries are almost entirely African-run and 200 Africans find employment in the catching and distribution segments of the industry.

PRODUCTION AND CONSUMPTION: In 1962, Uganda's fishery production totaled 63,500 metric tons with a total value of £2.5 million (US\$7 million) and a value at the retail level of \$9.8 million. Uganda's exports in 1961 of processed fish from the western lakes to the Congo Republic dropped by 400 tons in quantity and £100,000 (US\$280,000) in value as compared with 1960 due in part to difficulties in arranging currency exchange. Many fishermen have now turned their attention to markets in Uganda and there has been a steady increase in sales of fish produced on Lake Albert, Lango, Acholi and West Nile districts. Small fish processed from fish caught in Lakes George and Edward sold to Kampala and other markets. Uganda has eliminated the importation of fish from Tanganyika which was formerly imported by Uganda in large quantities. Elsewhere unsettled political and economic conditions in East Africa have impeded Uganda's expansion of fishery products sales, especially for fish fillets, which are sold mainly to the immigrant communities. Competition of supplies of frozen and cured sea fish and foods from overseas sources have also had their effect on Uganda's export potential. At the end of 1961 the most severe floods on the lakes of this country affected fishing and caused fishermen to evacuate their lakeside villages, necessitating covering the seining beaches, hindered the drying of fish, and disrupted communications. Local sales of fish were also severely affected because lake levels in some cases were more than 11 feet above average and resulted in fish spreading far inland in low areas

Table 2 - Uganda's Exports of Fishery Products, Etc., 1951-61

Product	1961			1951
	Quantity Metric Tons	Value		Quantity Metric Tons
		£	US\$	
Salted and smoked fish	2,350	293,585	822,000	3,137
Frozen fillets	333	91,000	255,000	-
Fish meal	157	5,535	15,000	-
Crocodile skins	1/	28,000	78,000	1/
Total	2,840	418,120	1,170,000	3,137

Uganda (Contd.):

has mainly been carried out by the East African Fresh Water Fisheries Organization at its headquarters and laboratory in Jinja. Since its establishment in 1948, that organization has published considerable information on the biology and ecology of fish and of the general hydrology and productivity of the lakes.

Since 1957, the Food and Agriculture Organization (FAO) has had some of its officers assist the Uganda Fisheries Department in studying specific problems. The FAO staff consists of a statistician, 3 fisheries biologists, an economist, and a fish-processing expert.



A U. S. marine biologist, assigned by FAO in 1958 to Uganda, worked with a team of assistants provided by the Government of Uganda to evaluate the fishery resources of Lake George. Pulling in gill net used to sample the lake's fish resources.

Preliminary experiments were carried out on Lake Victoria on the catching and canning of Engraulicyoris which process much more easily than Haplochromis, and which are plentiful in the Entebbe area.

FISH STOCKING: Uganda has over 700 dams built for cattle watering and in 1961 fish stocking continued in those and other waters. Some 1,000 Tilapia nilotica were planted in Lake Victoria at Entebbe. Nile perch were transferred to dams at Nyapea in West Nile and at Kawanda Research Station. In Lake Kyoga, where Nile perch were first planted in 1954, catches of that species were made regularly in all areas, the largest specimens claimed to be over 100 pounds in weight. In Lake Victoria, Nile perch were first reported there in 1960 and were believed to have originated from Lake Kyoga. More of them were later seen in commercial catches indicating that those fish had bred. All were in the Jinja area and the largest fish weighed 11 pounds.

FISH FARMING: Fish farming which now makes use of the weed-eating Tilapia zillii has made rapid progress since the Kajansi Fish Farm was established in 1953. By 1961, the number of ponds had increased from 7,153 to 7,593. It is estimated that only about 10 percent of the total potential catch of one million pounds of fish from those ponds is being realized. Work has been centered on persuading the farmers to feed their fish regularly with sweet potato tops and to weed out surplus fry. About 10 percent of the farmers are now maintaining and exploiting their ponds and stocks properly. Commercial fishing of dams stocked

in previous years with Tilapia from the Kajansi Fish Farm have gathered momentum and in 1961 a number of dams in Ankole, Mubende, and Masaka districts produced between 5 and 50 tons each. At Kajansi, work is being concentrated on breeding carp (Cyprinus carpio). Excellent results were achieved and not only were breeding stocks supplied to a number of selected African farmers and ponds at institutions but a small quantity also were frozen for sale in Kampala and Nairobi. The frozen carp found a good market acceptance and the demand became greater than supplies.

Since 1959 considerable financial and material aid has been given by the United Nations International Children's Emergency Fund (UNICEF) to the Uganda Fisheries Department for the establishment of fish ponds at schools in Bukedi district and for the general improvement of fisheries. In 1961 the Bukedi Plan made good progress and large fish ponds were completed at five schools and all standing water stocked with fish.

SPORT FISHING: Uganda provides good sport fishing and local interest in angling is encouraged by the Uganda Angling Association. Black bass, which were stocked by the Fisheries Department in Lake Mutanda in 1960, bred during 1961 and became well established. There were indications that breeding had also taken place near Fort Portal in Lake Saka which was stocked with black bass at the same time. (Fisheries Department, Government of Uganda.)

Note: See Commercial Fisheries Review, August 1963 p. 109.



Uruguay

FUR SEAL INDUSTRY:

Several coastal islands off Uruguay (Isla de Lobos near Punta del Este and four smaller islands off the Cabo Polonio) are the home of extensive fur seal herds. The herds consist of two-coated seals ("dos pelos") and one-coated seals ("un pelo"). The Uruguayan Government agency in charge of commercial fishing and oceanographic research (SOYP) has a complete monopoly over harvesting the fur seals on the coastal islands. The following description of that industry was furnished by SOYP:

About 170,000 seals of two coats (a short fine coat and a long rough coat) and 35,000-40,000 seals of one coat (a long rough coat) breed on Uruguay's coastal islands. The two-coated seals are more prolific and breed in the higher rocky parts of the islands, while the one-coated seals breed on the lower beaches. The one-coated seals remain in close proximity to the mouth of the Rio de la Plata at all times, while the two-coated seals range over a considerably wider stretch of the adjacent South Atlantic areas.

Uruguay (Contd.):

SOYP estimates that in 1964 it harvested 81,000 skins from the two-coated seals and between 2,000 and 2,500 from the one-coated species. The future annual harvest may be increased slightly if the overall population increases.

SOYP reports that up to 1964 it annually shipped approximately 2,000 raw seal skins on consignment to a fur company in the United States and sold outright to a London firm about 3,000 skins. Now, however, SOYP has opened a new plant in Uruguay and hopes that it will be able to process all raw seal skins locally. As a result, SOYP has sold Industria Lora del Uruguay, S.A. (ILUSA), an association of four leading furriers in Uruguay, 81,000 pelts from the 1964 harvest with the understanding that SOYP will do the processing.

SOYP harvests only male seals measuring between 76 and 100 centimeters (about 30 to 39 inches). The harvest, which begins in June when the maximum number of seals are on the islands, is limited to seals between 8 months and 3 years in age.

SOYP officials estimate that raw seal skins of average quality sold on the local market in Uruguay bring 225 to 250 pesos (\$9.40-\$11.00) and the finished skins about 400 pesos (\$16.00). The best seal skins are sent abroad and sold at higher prices on the international market. (United States Embassy, Montevideo, December 16, 1964.)

Note: Uruguayan pesos 24, 15 equal US\$1.00.



U.S.S.R.

COD BLOCKS GO TO WEST GERMANY AND OTHER COUNTRIES:

Soviet cod blocks traded to West Germany under a barter agreement are being reexported to France, Australia, and the United Kingdom. A total of 10,000 metric tons of the Soviet cod blocks produced in the North Atlantic, presumably on Georges Bank or the Grand Banks, are to go to West Germany under the barter agreement. The 13½- and 16½-pound blocks in a recent Soviet shipment to Hamburg, Germany, were reported to be of excellent quality and workmanship. However, it was reported that earlier shipments

of the fish blocks had some physical defects, including the presence of bones.

A shipment of 102,900 pounds of Soviet-produced frozen cod blocks arrived at Boston, Mass., in February 1965, together with frozen fishery products from West Germany. It was the first shipment at Boston of cod blocks from Soviet-caught fish in the North Atlantic. The New England fish-processing firm handling the blocks reported them as of a good quality and that prices were at the same level as for the Canadian product. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, February 3, 1965, and other sources.)

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FISHING GOALS EMPHASIZE HIGH-SEAS FLEET EXPANSION:

The Chairman of the State Fisheries of the Soviet Union said in an interview that fishing on the high seas and at greater depths were their main aims for the future. Their 1965 fisheries catch target would be 5.6 million metric tons.

In the past 15 years, said the Chairman, the Soviet fishing fleet had doubled in size, and its engine power had increased fourfold. In the old days, a fishing trip of 1,500 miles was considered the limit, except for whalers, but today, ocean-going fishing vessels can remain at sea for up to 3 months and travel at 14-16 knots. Factoryships are also coming into general use.

Discussing new vessels, the Chairman claimed that in 1965 the Soviet fishing fleet would become the world's largest. He said a number of new classes of vessels would come into use in the next few years, most notable of which would be the Vostock-class of factory motherships.

Carrying 14 fishing vessels on board, the Vostock would be able to stay at sea for 125 days, in which time it would produce 10,000 tons of frozen fish, 1,000 tons of fish meal, 10 million cans of fish, and about 100 tons of industrial fats.

The Chairman emphasized that fresh-water fishing was not being ignored in the Soviet Union. The development of inland fishing is an important phase of Soviet planning. At present, he said, rivers and reservoirs were yielding only 20 to 60 pounds of fish per acre, where-

U. S. S. R. (Contd.):

as properly farmed ponds were giving 1,000 to 2,000 pounds per acre.

On the subject of fish farms, he said the development of hydroelectric schemes had considerably hampered the natural spawning habits of sturgeon and salmon, but now, with more than 100 Soviet fish farms in operation, this had been overcome. (Fishing News, London, January 29, 1965.)

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DEEP-WATER TRAWLING TESTS IN BERING SEA RESULT IN GOOD CATCHES:

In mid-1964, the Soviet news agency Tass reported on deep-water trawling in the Bering Sea by the Soviet exploratory vessel Academician Berg as follows:

"The large refrigerator trawler... is catching halibut and other fish in the Bering Sea at a depth of 1,000 meters (3,280 feet). The purpose of its voyage, scheduled for almost a month, is to study and improve the techniques of catching fish at great depths. Trawling has shown that there are large stocks of valuable fish in these layers of the Bering Sea and that a big catch can be made there. The Academician Berg is making a



The Soviet trawler Zhemchug fishing in the Bering Sea. Its home port is Vladivostok

daily catch of up to 500 metric centners (110,230 pounds at a depth of 1,000 meters or 3,280 feet). The trawler has of late been evolving methods of fishing at a depth of 1,200 meters (3,936 feet)." The article pointed out that the Academician Berg is a "flag ship of the fish-locating fleet." (Scottish Fisheries Bulletin, No. 22, December 1964.)

Note: See Commercial Fisheries Review, December 1964 p. 114. October 1964 p. 80.

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FISHERY RESEARCH IN PACIFIC OCEAN:

Soviet research expeditions in the Bering Sea, the Gulf of Alaska, the Central Pacific, and the eastern Indian Ocean were organized in 1964 by the Pacific Scientific Research Institute for Fisheries and Oceanography (TINRO), at Vladivostok. Over 20 fishery and oceanographic research vessels were deployed and several hundred scientists participated in the expeditions. A total of 165 scientific papers was published by TINRO scientists. The work of some biologists was considered of such importance that they were proposed as candidates for the Lenin Prize.

In 1965, TINRO will obtain new research vessels and modern electronic instruments to intensify fishery research in the northern, central, and southern Pacific Ocean, as well as in equatorial waters. The emphasis will be on biological studies of saury and tuna, and exploring for commercial quantities of molluscs. Soviet Far Eastern fishing operations are dependent on TINRO's biological studies.

The Soviets plan to catch 1.9 million metric tons of fishery products from their Far Eastern bases in 1965. The 1964 catch from those bases amounted to about 1.8 million tons and 1963 catch was 1.6 million tons. Plans projected for 1970 provide for a Soviet Far Eastern fishery catch of about 3 million tons.

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JAPAN LAUNCHES FIRST OF NEW SERIES OF FACTORYSHIPS FOR SOVIETS:

A Japanese shipbuilder announced the launching at Yokohama on January 14, 1965, of the fish factoryship Spassk (19,000 gross tons), the first of 8 such vessels of the same class for V/O Sudoimport in the Soviet Union.

The Spassk has the following specifications: length between perpendiculars 160 meters (525 feet), breadth moulded 24 meters (79 feet), depth moulded 14.8 meters (48.5 feet), main diesel engine 5,500 brake horsepower at 125 r.p.m., cruising speed 14 knots, gross tonnage 19,000 tons, and deadweight tonnage 10,000 tons.

The Spassk will be equipped with modern equipment for fish processing, canning, and refrigeration. Crew and factory workers on the vessel will total 280 persons.

The Spassk has the approximate daily capacity to freeze 100 metric tons of fish, can 50 tons of fish, pack 100 tons of salt herrings.

U. S. R. (Contd.):

in barrels, and process 20 tons of fish meal. Cold-storage capacity is 12,500 cubic meters (4434 cubic feet), which can be maintained at 10° C. (-22° F.) even in tropical waters. The Spassk's refrigeration plant can also manufacture 48 tons of ice a day.

The Spassk is scheduled to be delivered to the Soviet Union in April 1964, and all eight factoryships of this class are to be delivered by November 1966. (Fisheries Attache, United States Embassy, Tokyo, February 10, 1965.) See Commercial Fisheries Review, April 1964 p. 74.

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FREEZER-TRAWLER "SKAZOCHNIK ANDERSEN" DELIVERED TO DANISH SHIPYARD:

The 2,570-ton freezer-trawler M/S Skazochnik Andersen was delivered to Sudoimpo Moscow, by a Copenhagen shipyard February 10, 1965. The vessel is the 7th in a series of 15 freezer-trawlers for the U.S.S.R. being built by the Danish shipyard to the following specifications: length between perpendiculars 91 meters (298.5 feet), breadth 16.5 meters (52.5 feet), and deadweight tonnage 2,570 to 2,600 metric tons. The first vessel in the series was the M/S Skrypley launched March 10, 1962.

The M/S Skazochnik Andersen is designed to serve mainly as a refrigerator vessel, but it can also operate as a stern trawler. Speed

on loaded trials was 14 knots. (Regional Fisheries Attache, United States Embassy, Copenhagen, February 17, 1965.)

Note: See Commercial Fisheries Review, Mar. 1965 p. 93; Feb. 1965 p. 80; Oct. 1964 p. 56, May 1964 p. 75; Mar. 1964 p. 70; and Sept. 1962 p. 71.

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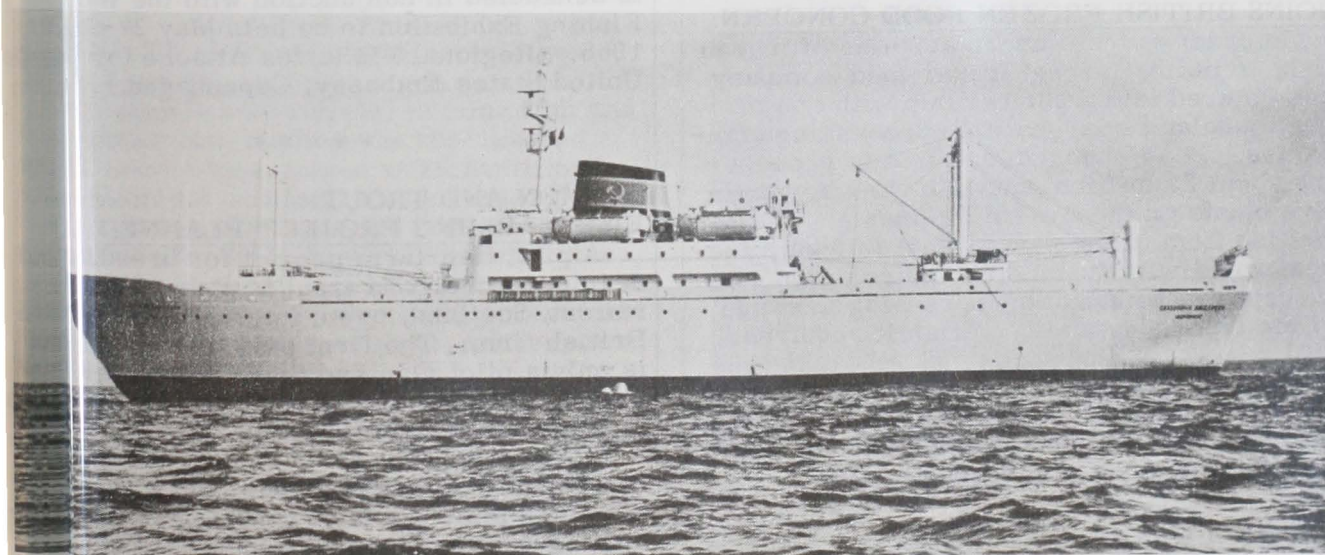
ANOTHER LARGE STERN FACTORY TRAWLER LAUNCHED:

The 13th Soviet large stern factory trawler built in 1964, the Grigorii Shelekhov, was launched September 30, 1964, at the U.S.S.R. Nosenko Shipyard at Nikolaev on the Black Sea. It confirms previous estimates that the Nikolaev Shipyards are capable of building from 1 to 2 "Maiakovskii" class trawlers a month. It is estimated that 17 or 18 trawlers of that class were built by the end of 1964.

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FAR EASTERN PROVINCE OF SAKHALIN EXPANDS FISHERIES:

The Soviet Far Eastern Province of Sakhalin began a major shift to distant-water fisheries in 1959, according to a report published by the Japanese Government. The change followed the launching in 1959 of a new Soviet 7-Year Economic Development Plan. The Plan set a fisheries production goal of 261,000 metric tons by 1965 for Sakhalin Province (which includes Sakhalin Island and the Kuril Islands). To achieve that target, Sakhalin's fishing industry switched from its dependence on the coastal herring



New Soviet freezer-trawler Skazochnik Andersen.

U. S. S. R. (Contd.):

and salmon fisheries to the development of distant-water fisheries. Effort was also directed toward fishing for saury, scallops, and kelp. As a result, Sakhalin's fisheries production rose from 94,000 metric tons in 1958 to 222,000 tons in 1961, 234,000 tons in 1962, 273,000 tons in 1963, and 288,000 tons as of October 1964.

The catch increase was attributed to the extension of large-scale trawling operations to the eastern Bering Sea and the Gulf of Alaska, and the development of a herring purse-seine fishery in the Okhotsk Sea and northern Bering Sea. In 1963, distant-water operations reportedly accounted for 88 percent of Sakhalin Province's total fishery production.

The Japanese report says that the Soviet fishing fleet presently based in Sakhalin Province includes 3 large refrigerated factory-ships, 5 large stern trawlers, 70 medium and large trawlers, and a number of purse seiners. The Japanese report on Sakhalin was compiled by a Japanese Fisheries Agency official who recently completed his third visit to the Soviet maritime provinces. (Suisan Keizai Shimbum, January 19, 1965.)



United Kingdom

CANADIAN FISHERIES FIRM
JOINS BRITISH FROZEN FOOD CONCERN:

In order to build up its supplies of frozen fish, Britain's largest frozen food company has entered into a partnership with one of Newfoundland's largest fish-processing companies. The Newfoundland firm is processing about 35 million pounds of fish a year in five plants on the Avalon Peninsula. The British firm in the new partnership said the deal would help it to meet its future "ambitious targets in a situation of increasing shortage of the types and quality of fish it requires."

Fishery products hit record sales in Britain in 1964 and accounted for about one-third of the British frozen food market. (The Journal of Commerce, February 15, 1965.)

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METHOD OF PRESERVING FISH IN
ANTIBIOTIC ICE PATENTED:

The German firm Henkel & Cie has been granted British Patent No. 947,688 for a method of preserving fish by storing in a bacterial ice produced by freezing a 0.01-percent aqueous solution of peracetic acid. (Food Technology, July 1964.)

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MEETING TO BE HELD ON FISHING
VESSEL DESIGN IN RELATION TO
FISH QUALITY IMPROVEMENT:

The British White Fish Authority is sponsoring a meeting in London, May 31-June 1, 1965, on the design of fishing vessels and their equipment in relation to the improvement of fish quality. The meeting will focus on ways to maintain fish quality on vessels at sea. The agenda for the meeting lists the following topics for discussion:

(1) Design and operation of fishing vessels when the catch is stowed in melting ice. (Handling, stowage, and unloading will be discussed as well as fishroom design.)

(2) Other chilling techniques such as chilling sea water, superchilling, antibiotic ice, and gas stowage.

(3) Freezer trawlers and their equipment.

(4) Factory trawlers and motherships.

The meeting on quality and vessel design is scheduled in conjunction with the World Fishing Exhibition to be held May 27-June 1, 1965. (Regional Fisheries Attache for European Community, United States Embassy, Copenhagen.)

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SALMON AND TROUT
FISH-FARMING PROJECT PLANNED:

A pilot fish-farm project for breeding and rearing salmon and trout is planned at Inverailort, Scotland, by an internationally known British firm. The firm said that the project is only a pilot plan and that development of any major scale will take place only if the project is successful.

Planning permission, which has been granted in principle by the Invernesshire County Planning Committee, covers a hatchery, ponds,

United Kingdom (Contd.):

houses, and a laboratory. The project will require large quantities of salt water daily, as well as a continuous flow of fresh water, electrical power, and feeding and fertilizing materials. Initially about 20 to 45 persons are expected to be employed.

In May and July 1964, the firm completed arrangements with Norwegian fish-farming interests which gave them world rights in the exploitation of a system of breeding and rearing salmon and trout.

Investment in the project is expected to be high, and a sum of £2 million (US\$5-6 million) has been indicated. Apart from the actual farming process, a successful project would involve investment in packing, processing and refrigeration, storage and distribution if the project is to be of economic importance to the area where it is located. (Fishery News, London, January 29, 1965.)

See Commercial Fisheries Review, November 1964 p. 115.



Venezuela

TUNA LANDINGS, 1963:

Venezuela's tuna landings in 1963 amounted to 89 metric tons valued at 4.6 million Bolivars (US\$1.5 million). All of the tuna catch is sold domestically as fresh fish. (United States Embassy, Caracas, January 20, 1965.)

SARDINE FISHERY TRENDS AND EXPORTS, 1963:

Venezuela's commercial marine fish and freshwater fish landings in 1963 totaled 977,200 metric tons valued at 56.5 million Bolivars (US\$18.3 million), an increase of 2.7 percent in quantity from the previous year. Marine fish landings of 90,320 tons for the year included 34,553 tons of sardines valued at about \$1 million, or nearly 40 percent of the total marine fish landings. Anchovy landings for the year were 593 tons.

The sardine canning industry, centered at Cumana in the eastern part of the country, continues to be the largest part of Venezuela's commercial fishery. The sardine fishery is concentrated largely out of that area. Sardines are caught in nets because purse seining is prohibited (to protect the resource), and they

can be caught only during certain months of the year.



Fig. 1 - Unloading sardines from boat at a cannery in Venezuela.



Fig. 2 - Packing precooked sardines in cans at a cannery in Cumana.

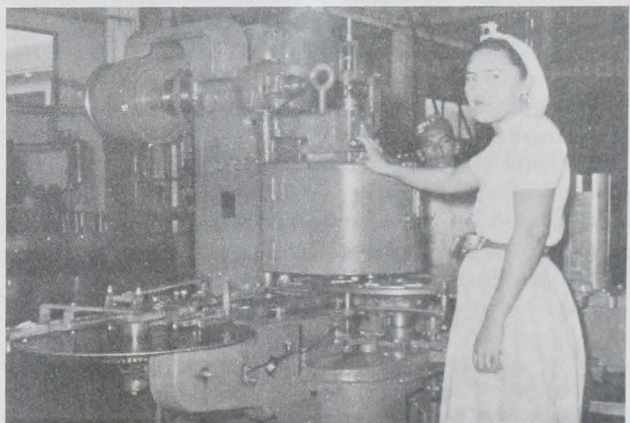


Fig. 3 - Sealing machine used in sardine cannery at Cumana.

About 80 percent of Venezuela's sardine pack is consumed by the domestic market. The Venezuelan Fishermen's Union, however,

Venezuela (Contd.):

believes that exports of canned sardines should be increased and that Venezuela should enjoy a greater share of the world export market.

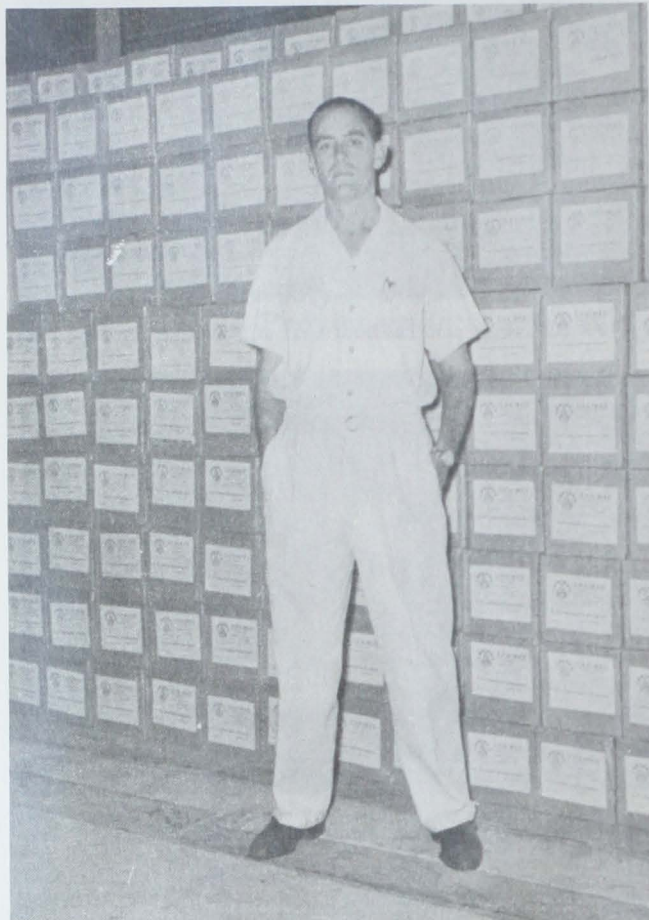


Fig. 4 - Cases of canned sardines ready for shipment at cannery in Cumana.

Venezuela's canned fish exports in 1963 were mostly canned sardines for a total of 2,071 tons with an export value of \$1.1 million. West Germany, Australia, the United States, and Jamaica were among the principal buyers of Venezuelan canned sardines. (United States Embassy, Caracas, January 20, 1965.)

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SHRIMP FISHERY TRENDS AND EXPORTS, 1963:

Venezuela's shrimp fishery is divided between the Punto Fijo area and Lago de Maracaibo in the western part of the country. In 1963, shrimp landings totaled 8.6 million

pounds valued at 6.2 million Bolivares (US\$2 million), of which 7.4 million pounds valued at \$2.6 million were exported, practically all of it to the United States. The spiny lobster catch for the year was 273,000 pounds.

The Venezuelan Fishermen's Union has complained that Venezuela's shrimp fishery is completely exploited by foreign interests and that about 13 foreign firms operate in the Maracaibo area, only one of which offers steady employment to Venezuelan workers.

Large-scale shrimp fishing is planned in 1965 in the eastern part of the country. Venezuelan industry sources would like to see a pilot fishing project started in the Gulf of Paria and waters near the Orinoco Delta. But opinion is divided as to the possibilities in that region. Some industry members believe that fishing in that region, particularly for shrimp, should be equal to, or better than in the Gulf of Mexico. Others believe that there is nothing worth fishing for there.

Experiments were conducted in several places of eastern Venezuela with new production techniques. Wire-mesh enclosures were used with success in the cultivation of shrimp in the lagoon of Puerto Piritu in the eastern part of the country, but apparently that technique has not been applied in other areas. (United States Embassy, Caracas, January 20, 1965.)



Yugoslavia

FISHING VESSELS BUILT FOR TUNISIA:

Ten fishing vessels were built for Tunisia at a shipyard in Pula, Yugoslavia. Four of the vessels were to be delivered in December 1964, another 4 in January, and 2 in February 1965.

They are equipped with 200-hp. diesel engines capable of a speed of 10 knots. The vessels are intended for deep-sea fishing. Each has a 1,589-cubic foot cold-storage area, deep-freezing facilities, radio, echo-sounder and other modern electrical equipment.

The Yugoslav shipyard delivered 5 vessels of the same type to Tunisia about two years ago. (Privredni pregled, Belgrade, November 13, 1964.)

Yugoslavia (Contd.):

One of the three tuna purse seiners being built at the Pula shipyard was recently completed. They are scheduled for delivery to a Yugoslav fishing company in May, July, and September 1965.

See Commercial Fisheries Review, January 1964 p. 96.



Zanzibar

SARDINE VESSELS FROM EAST GERMANY:

Six sardine fishing vessels are scheduled to be delivered to Zanzibar in 1965 by East Germany under a trade protocol signed by the two countries in September 1964. Another 4 vessels are to be delivered in 1966 to be followed by 6 more in 1967. The vessel agreement with East Germany was mentioned in a Zanzibar newspaper on January 23, 1965. (United States Consul, Zanzibar, February 5, 1965.)



FISH EAT WEEDS TO AID POWER PLANT OPERATION

Some 15,000 grass-eating fish are helping to keep the lights burning in England. The fish are young grass carp that thrive on the large crops of weeds growing in the Cavendish Dock, which supplies water to the cooling system of the electric power station at Barrow-in-Furness. The fast-growing weeds had clogged the water inlets and often nearly stopped its flow.

The young fish, about 2 to 2.5 inches long, were flown to England from Hong Kong in 60 water-filled plastic bags packed in an electrically-heated box. Upon arrival in England, the fish were put into a 3,000-gallon tank of fresh water. The water was changed gradually until it became a mixture of fresh and salt water similar to that in the dock.

The grass carp, which will weigh about 70 pounds full grown, are busily eating weeds in the dock to keep the water flowing freely.

The Central Electricity Generating Board in England, which ordered the carp, decided to use the fish as a solution to the weed problem after an experiment. In the test 25 grass carp were taken from the London Zoo and put into the dock. Those fish made gluttons of themselves on the vast amount of food available, said the senior chemist to the board. It was then decided that at least 14 tons of grass carp would be needed to keep the weeds down.

The board still has one problem, however, it does not know whether the fish will breed in England. This may mean that the whole operation will have to be repeated in a few years.

Grass carp are being tested in the United States for their ability to eat aquatic weeds. Nearly 100 of those fish were flown from Malaysia early in 1964 to Stuttgart, Ark. They are a possible solution to the aquatic weed problem in lakes, ponds, streams, and fisheries, the Chief, Division of Fish Research, U. S. Fish and Wildlife Service, points out.

Aquatic weeds interfere with fishing, boating, and raising fish, particularly in many southern states of the United States. (Science News Letter, August 29, 1964.)