

# THE JAPANESE FISHING INDUSTRY: 1971 HIGHLIGHTS

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The year 1971 should be another successful one for the Japanese fishing industry. As in previous years, the Japanese were extremely active--searching for new grounds, developing new techniques and products, and establishing new overseas joint ventures. Indications were that a new catch record was set, imports of marine products appeared to reach a new high, but canned-tuna exports declined sharply.

**CATCH:** Figures for Japan's 1971 catch are not yet available, but it would not be surprising if these exceeded its record 1970 catch of 9,272,000 metric tons (Fig. 1) worth US\$3 billion. The marine catch is expected to comprise over 90% of this total, finfish nearly 80% of the marine catch, molluscs 7%, shellfish 6%, seaweeds 5%, and other species 2%.

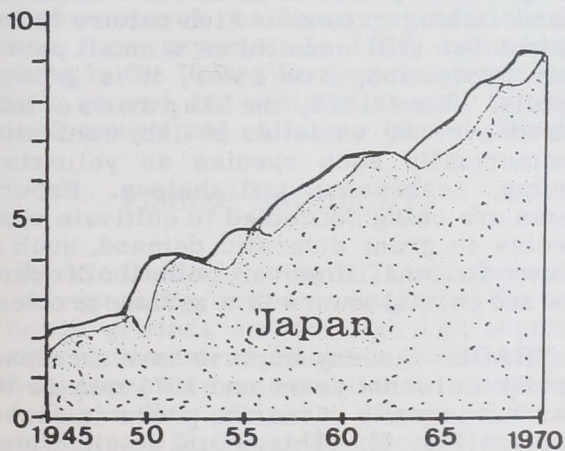


Fig. 1 - Japan's fisheries catch, 1945-1970 (in million metric tons).

**CONSUMPTION:** The 1968 record annual per-capita consumption rate of 71.3 pounds of fishery products decreased to 67.5 pounds in 1969. Information for 1970 is not available, so a projection for 1971 can not be

made. However, consumption of higher quality and more expensive fishery products (like shrimp) rose again in 1971. Total consumption of edible fishery products was expected to exceed 6 million metric tons.

With the Japanese eating more high-quality fishery products and paying more for them, the consumer price index for fresh fish and shellfish was expected to increase. During 1965-1969, the index rose 46.4%.

**FISHERY COMPANIES:** During the past few years, the number of smaller fishing companies has decreased; larger firms, such as Taiyo, Nichiro, Nippon Suisan, and Kyokuyo Hoge, have increased in influence, sophistication, and in development of new technology. This trend was expected to continue in 1971. The major companies appear to have had a profitable year. Taiyo has reported after-tax profits of roughly \$5.5 million and declared a 6% dividend following a 2-year "recession" beginning in 1968. However, those firms dependent upon canned-tuna exports to the United States suffered reversals in 1971.

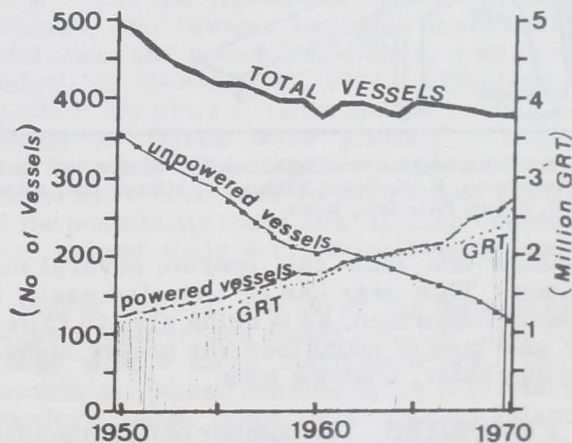


Fig. 2 - Size and number of Japanese fishing vessels, 1950-1970.

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**FLEET:** In the past 20 years, the fishing fleet has decreased steadily in numbers while increasing in tonnage (Fig. 2). It is believed this trend continued in 1971. In 1970, registered fishing vessels numbered 391,789 totaling 2,531,317 gross tons; unpowered fishing vessels totaled 120,600 vessels, powered vessels slightly over 271,000 vessels. One of the most significant events in 1971 was the launching of 5 giant 5,000-GRT stern trawlers for fishing off Alaska.

**GEAR:** To offset the high cost and shortage of labor, the industry continually seeks to improve operating efficiency, experiments with new techniques and fishing gear. One interesting development in 1971 was deployment of the "robot" automatic skipjack fishing machine (Fig. 3) that proved highly successful during sea trials. Skipjack pole-and-line fishing requires many men. The robot substantially reduces manpower requirements

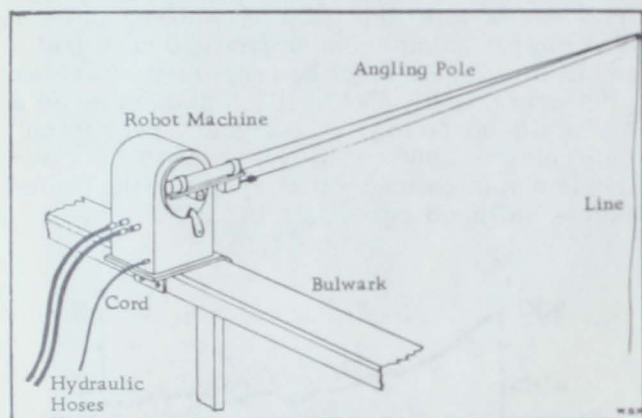


Fig. 3 - Robot skipjack tuna angler based on the drawing by the manufacturers, K. K. Suzuki Tekkojo, 7, Mikawa-cho, Ashinomaki, Miyagi Prefecture, Japan.

because one man can operate several machines. This gear can be operated easily by elderly fishermen, so it helps also to relieve the shortage of young men who prefer higher-paying, safer, onshore jobs.

**FISHERMEN:** The number of fishermen has declined about 20% in the past decade and a further drop was expected in 1971--to about 500,000. Wages and working conditions on the fishing vessels have improved, but the industry is still having difficulty attracting and retaining able young men.

**FISHERY AGENCY:** A new Fishery Agency Director, Y. Ota, was appointed in June 1971. He indicated that he planned to emphasize the development of deep-sea fishery resources. In late 1971, the Fishery Agency (JFA) announced it would add 3 new divisions (fish culture, fisheries engineering, and fisheries environment) to its 8 regional fisheries research laboratories. The JFA's FY 1971 budget (April 1971-March 1972) was a record US\$139 million. Most of this money was earmarked for port construction and insurance; funding for deep-sea marine science was increased by 53% over FY 1970, to \$3.4 million.

**RESEARCH:** As in previous years, marine research enjoyed high priority. Two new institutions, the Marine Science and Technology Center, and the Marine Fishery Resource Development Center, were formed to promote the development of marine sciences.

**TYPES OF FISHERIES:** Marine fisheries continued to play a major role. High-seas fishing becomes increasingly important as the spread of pollution threatens coastal and inland fishing grounds. Fish culture is important but still constitutes a small part of total production; however, it is growing rapidly. Since 1950, the Japanese have raised over 50 varieties of fish, cultivating commercially such species as yellowtail, shrimp, seabreams, and abalone. Experiments are being conducted to cultivate other species in great domestic demand, such as salmon and tuna. However, pollution of estuarine and coastal waters is a serious problem.

**TRADE:** Fishery imports have increased rapidly in recent years and 1971 may be the year that imports of marine products exceed exports (Fig. 4). This would be significant for a nation that traditionally has been a leading exporter. As of October 1971, imports were 53% over same period of 1970.

In 1970, Japan imported 374,569 metric tons of marine products worth US\$318 million. In value, shrimp accounted for 43%, followed by tuna, 8%. Other important imports were squid, fishmeal, salmon roe, and octopus. Leading suppliers in 1970 included South Korea, China, the United States, Taiwan, and Mexico.

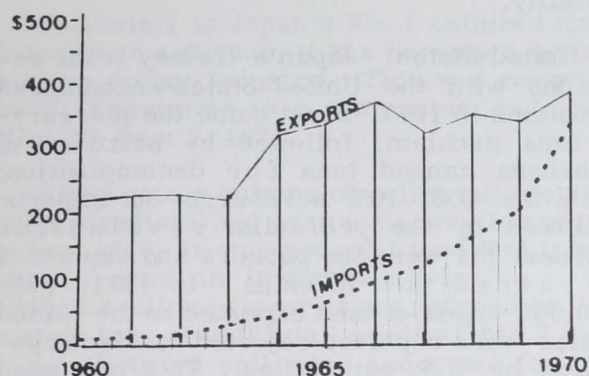


Fig. 4 - Japan's Fishery Trade, 1969-1970 (in US\$1 million).

In 1970, fishery exports were valued at US\$391 million. Its largest customer was the United States (\$128 million, a record), followed by the United Kingdom (\$46 million), West Germany (\$25 million), Italy (\$16 million), and the Philippines (\$16 million). Principal export items were canned tuna, canned mackerel, pearls, canned salmon, and frozen tuna exports. In 1970, canned tuna exports to the United States totaled \$42 million, a record, but declined sharply in 1971. (See International Affairs; United States.)

### FISHING HIGHLIGHTS

**Pacific Ocean:** During 1971, the Japanese were especially active in exploring for new skipjack grounds and for live bait supplies in the southwestern Pacific. Joint skipjack fishing ventures were established in Indonesia and Papua-New Guinea. Efforts to do the same in the U.S. Trust Territories were not successful. In October, a voluntary ban on fishing southern bluefin tuna was adopted by Japanese tuna fishermen.

The Japanese continued their intensive trawl fisheries on the U.S. Continental Shelf in the eastern Bering Sea. Their 1971 pollock catch was expected to exceed easily 1970's catch of 1.2 million metric tons, about 85% of their total catch in that area. They met their 1971 quota of 37,500 cases (48½-lbs.) of king crab and 14 million (plus 10% allowance) of tanner crabs. Their catch of king and tanner crabs in the eastern Bering Sea is regulated by the Dec. 1970 agreement

with the United States. The Japanese also initiated a new fishery for sea snail in the eastern Bering Sea.

Off the Pacific Northwest and northern California, they continued their saury fishery. In 1971, 49 vessels were reported licensed to fish off the U.S., but only 18 were sighted by U.S. surveillance officers during the peak of this fishery. Catches were reported poor: 1,300 metric tons compared to 3,278 tons in 1970.

In late 1971, the research vessel 'Ryoun Maru' scouted for squid off Cape San Lucas, south of Baja California. Initial reports indicated it was doing well, but later reports were not satisfactory.

Tuna fishing in the southeastern Pacific was marked by the arrival of the 'Nippon Maru', a 999-GRT purse-seiner, built to U.S. specification. U.S. fishermen were hired to train the crew on the vessel. If trial runs prove successful, the Japanese may build more.

**Atlantic Ocean:** The 'Nippon Maru' also fished off west Africa, where the Japanese operate 50-80 tuna vessels. The Japanese also extended their fishing agreement with Mauritania, where they now operate a joint fishing venture. The Japanese have a very large trawl fishery off Mauritania for squid, octopus, sea-bream, and jack mackerel. A joint squid and bottomfish fishery was established in Morocco in 1971, with plans for another venture (shrimp) there in 1972; similar ventures were planned in Nigeria and Senegal. The Japanese are anxious to establish themselves in Africa now because of the possibility that some African countries may extend their territorial/fishing limits.

Early in 1971, one large fishing company began a year-round fishery off the U.S. East Coast with 5 large stern trawlers. These vessels are joined seasonally by other larger trawlers, some based in the Canary Islands. They fished primarily for argentine, butterfish, and squid (estimated 1970 catch was 36,627 tons) but intensified their effort for herring (1970 catch 1,125 tons). There is a world supply shortage of herring. Japanese tuna longliners appeared in autumn 1971 off Cape Cod, Mass., in search of bluefin tuna. These tuna are highly prized as "sashimi" (thinly sliced raw fish). Some of these vessels reportedly purchased tuna from U.S.

fishermen. About 5 shipments (3-6 fish per shipment) of bluefin caught by U.S. fishermen were shipped by air to Japan, where they sold for \$3.19/lb.

The end of 1971 was marked by reports of damage to U.S. lobster gear caught by some Japanese trawlers operating off U.S. Atlantic coast. Japanese longliners again were reported in Gulf of Mexico fishing for yellowfin tuna.

Indian Ocean: The Japanese have a sizable tuna fishery and processing/transshipment bases in or bordering the Indian Ocean. There were no significant developments in 1971.

Antarctic: The catch of baleen whales in the Antarctic is regulated by the International Whaling Commission. Japan's 1971/72 baleen whale quota is fin whale, 1,566, and sei, 3,378, equivalent to 1,346 blue whale units. The Japanese also planned to take 1,000 sperm whales and 3,000 minke whales by February 1972. They are concentrating especially on minke whales this year because this species is still relatively plentiful and not subject to quotas.

## INTERNATIONAL AFFAIRS

The Japanese industry is somewhat concerned over possible extension of territorial/fishery jurisdictions by some coastal states, principally in Africa. This prompted them to try to establish themselves in some of these countries before the extensions were made. Japanese coastal fishermen pressured their government to extend Japan's 3-mile territorial sea to 12 miles to protect their offshore resources from foreign fleets, mainly Soviet.

A major development in 1971 was the Japanese decision to let the yen float following the U.S. imposition of a 10% surcharge on imports. Japanese fishery products thereby became more costly, while non-Japanese

goods became cheaper. The uncertainty over exchange rates caused some confusion initially.

United States: Japan's fishery trade relations with the United States encountered problems in 1971. First came the mercury-in-tuna problem, followed by seizures of Japanese canned tuna for decomposition, then the U.S. 10% surcharge on imports, followed by the yen/dollar revaluation. Hardest hit were the packers and exporters of canned tuna-in-brine. In 1971, over 400,000 cases of tuna exported to the United States were reported rejected for decomposition by U.S. authorities. This disrupted Japan's canned-tuna trade; exports were suspended during the latter half of 1971. Large stockpiles accumulated in Japan. In December, a government/industry team was sent to the United States to discuss the tuna decomposition problem.

Soviet Union: The annual Japan/USSR fishery negotiations went badly for the Japanese in 1971. Catch quotas for salmon, crab, and herring were reduced and the fishing season delayed. The Soviets imposed a ban on herring fishing in the Okhotsk Sea, preventing Japanese access. This created difficult internal problems for Japan. Soviet seizures of Japanese vessels for illegal fishing off the USSR continued. In late 1971, large numbers of Soviet vessels (50-100 vessels) began fishing for mackerel off Japan's northern Pacific coast, further irritating Japanese fishermen.

China: Japanese trade in marine products with China increased to \$31 million 1970 and was expected to continue to expand in 1971. Shrimp was the single most important import (\$19 million in 1970); it was anticipated that herring might become another important commodity in 1971-72. If Japan recognizes China, the private fishery agreement concluded between Japanese fishery firms and China may be changed into an official agreement later.

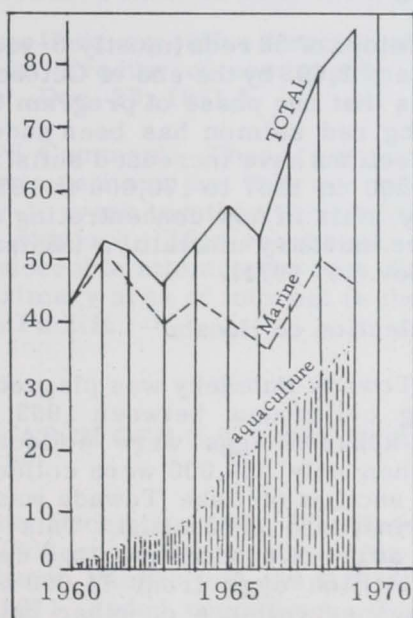


# JAPAN

## YELLOWTAIL IS NO. 1 CULTURED FISH

Yellowtail is Japan's No. 1 cultured fish. In less than a decade, it has become a multi-million dollar industry. This was reported by T. Yamamoto to a symposium in Paris, Nov. 29-Dec. 3, 1971.

Although the culture of yellowtail (*Seriola quinqueradiata*) had been underway for years before 1960, it was not until then that it began to grow in importance (see Fig.). By 1969, 4.3 million fingerlings produced 36,725 metric tons of yellowtail worth US\$44.7 million. Cultured yellowtail accounted for 42% of yellowtail production (87,850 tons).



Yellowtail catch (1,000 metric tons).

### Grows Fast

Yellowtail, "buri" in Japanese, is one of the world's fastest-growing fish. In 100-120 days, it will grow from 2 cm ( $\frac{3}{4}$  inch) to over 40 cm (1'4"); it will weigh nearly 1 kilogram (2.2 lbs).

Fortunately for the culturist, the consumer prefers yellowtail 12 to 18 inches long. This allows him to grow fish when weather is warm and growth at maximum. Usually, the fish are shipped live to nearby markets; the nerve

(pith) is severed just before shipment so fish remain alive but dormant. Generally, the fish are eaten raw.

### Culture

Yellowtail larvae are normally caught in the early spring drifting under seaweed off Pacific coasts of Kyushu and Shikoku Islands. Then they are raised in "embanked ponds" (563,000 sq. meters in 1969), net-enclosed ponds (1,942,000 sq. meters), or in floating, net-cages (751,000 sq. meters). The fry are fed a mixture of artificial formula foods or frozen scrap fish. They seem to thrive on sand lances, anchovy, and jack mackerel. Currently, the cost of feed accounts for 60% of the total investment in cultivation. The Japanese are trying to cut these costs.

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### SKIPJACK FISHERY'S LIVE-BAIT PROBLEM

In 1971, the major Japanese skipjack fishery firms advanced into western equatorial Pacific to develop grounds. As 1972 began, they were preparing to move from exploration to full-scale operations.

Taiyo Gyogyo has established a base in the Solomon Islands; Nichiro at Ternate, Helmahera (Indonesia); Hoko Suisan at Kendari, Celebes; Kaigai Gyogyo, Kyokuyo, and Hokoku Suisan at Papua, New Guinea; and Sanyo Gyogyo of Okinawa at Ponape (U.S. Trust Territory). Fishing is still experimental, but progress likely will be made in 1972 to form joint ventures with local interests.

The available Pacific skipjack resource is estimated at around 800,000 to 1 million tons. The Japanese annually take about 250,000 tons, so it is possible to increase the catch. More investigation is necessary. Skipjack distribution in the Indian and Atlantic oceans is estimated at 200,000-400,000 tons each.

### Live-Bait Problem

To harvest skipjack, it is necessary to solve live-bait problem. The domestic live-bait supply is mostly anchovy. Sardine, small

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mackerel, and sand lance also are used to some extent. After hauling, anchovy cannot be transported immediately to fishing grounds. They must be held in receivers for at least one week. Transporting the fish from baiting ground to receiving point is a problem. So too is the heavy die-off--from 50 to 70% of catch.

In 1971, the Federation of Japan Tuna Fishery Cooperative Associations (NIKKATSUREN) transported successfully (presumably to fishing ground) the first supply of anchovy purchased from South Korea. NIKKATSUREN hopes to set up a bait-supply point at Nagasaki and plans to build a net enclosure there. It is investigating availability of baitfish in Taiwan. Bait procurement remains the bottleneck for overseas-based operations. ('Katsuo-maguro Tsushin', Jan. 3, 1972.)

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HERRING FISHING IN  
EASTERN BERING SEA

In early January 1972, 23 Japanese stern trawlers were active in the winter herring fishery of the eastern Bering Sea north of the Pribilof Islands. Also, close to 80 Soviet trawlers were fishing there.

Japanese production from about Nov. 22, 1971, when the winter operation started, until Jan. 5, 1972, totaled approximately 15,000 metric tons of frozen product; of these, about 5,000 tons were shipped to Japan in late 1971. Compared with previous years, the herring are large but the eggs are not as good; the fish run is smaller. ('Suisan Tsushin', Jan. 6, 1972.)

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RED-SALMON CULTURE INCREASED  
TO OFFSET DWINDLING CATCHES

To offset their dwindling catch of red salmon, the Japanese have turned to the artificial propagation of native, land-locked red salmon, the "kokanee", and Alaskan red salmon.

## Hokkaido Program

The Nijibetsu Hatchery on Nishibetsu River, Hokkaido Island, is an important center in Kokanee culture. It began experimenting in 1960 but money problems stopped operations. Kokanee had been raised and released during this trial period. Then fortune helped: 20 fish returned in 1965 to their breeding grounds. This excited fishermen.

In 1967, the Nijibetsu Hatchery again began rearing kokanee, more successfully this time. In 1968, red-salmon eggs from Bear Lake in Alaska were imported and hatched together with kokanee eggs; the young were released in the Nishibetsu River. ('Fishing News International', June 1970.)

The return of 56 reds (mostly 3-year olds) in 1970, and 2,609 by the end of October 1971, indicates that one phase of program to raise sea-going red salmon has been successful. Egg collections have increased satisfactorily from 4,500 in 1967 to 170,000 in 1970. The hatchery staff is now concentrating on ways to reduce hatchery mortality. ('Suisan Tsushin', Nov. 19, 1971).

## Egg Collection on Honshu

The Towada Hatchery was plagued by decreasing collections between 1963, when 5 million kokanee eggs were collected, and 1970, when only 800,000 were collected. In 1971, a section of Lake Towada was closed to help increase production. This closure and the effort of scientists raised collection to 2.1 million eggs from 11,000 reds. It ended former reliance on other hatcheries for eggs. ('Suisan Keizai', Nov. 23, 1971.)

## Commercial Salmon Culture

Nichiro Gyogyo, one of Japan's largest fishing firms, recently bought a large tract in northern Hokkaido to rear red salmon artificially. The company is seeking supplies of red salmon eggs. It plans to expand from freshwater to saltwater culture. If it successfully rears red salmon in salt water, it should be able to supplement its decreasing share of North Pacific red salmon catch within a few years. (U.S. Embassy, Tokyo.)

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## JAPAN (Contd.):

NEW GROUP COORDINATES  
SKIPJACK FISHERY

The 6 Japanese firms that have been conducting exploratory skipjack fishing in the tropical waters of the southwestern Pacific have formed a group to coordinate arrangements for (1) procuring bait, (2) scouting for fish, (3) buying skipjack from local fishermen, (4) resolving problems within joint ventures, and (5) training fishermen.

The 6 firms are Taiyo Gyogyo near the Solomon Islands, Nichiro and Hoko Suisan in Indonesia, and Kyokuyo, Hokoku Suisan, and Kaigai Gyogyo in Bismark Sea area.

Tetsuo Ueda, executive director of Hokoku Suisan, is director of new group. ('Suisan Tsushin', Dec. 23, 1971.)

NMFS Comment: These companies are strong competitors, but they are willing apparently to work together to develop a fishery for skipjack. This resource is attracting considerable attention in tuna fisheries. Their primary area of interest is the southwestern Pacific.

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SQUID CATCH OFF U.S. WEST COAST  
WAS LOW

In late December 1971, the 'Ryoun Maru No. 3' (300 gross tons), surveying squid in the eastern Pacific off the U.S. since late August 1971, ended operations. It had been sent by semigovernmental Marine Fishery Resources Development Center. Production totaled 3,532 cases (26.5 metric tons) of frozen squid, 14% of original estimate.

## Area Surveyed

The survey ran north to south from off Vancouver to Baja California. It failed to locate good squid concentrations, except off Cape San Lucas (south of Baja California). There, two days of excellent catch yielded 2,140 cases. The squid taken off Cape San Lucas were described as large-size American common squid ("American o-surume ika"). These measured about 23 cm (9 inches) in body length. ('Suisan Tsushin', Dec. 27, 1971.)

DOLLAR-YEN REVALUATION DISTURBS  
FISHERY INDUSTRY

The Japanese yen has been revalued upward in relation to U.S. dollar: 308 to one, a rise of 16.88% over previous 360 to one. This has raised fears that a long recession is ahead.

Fears are growing that sales of high-value fish and shellfish--shrimp, squid, octopus, tuna, salmon, and ark shell--will slow and export profits shrink. Fishery operators have been making sufficient profits from high-value fish to offset losses from the declining catch, prolonged fishing trips, and rising labor costs. But if market weakens and prices decline, they will be in trouble. Another factor may contribute to disruption of market prices for high-value fish: the competition among importers. This is likely to intensify because of favorable import conditions created by the yen's increase in value.

## Tuna Packers Hurt

The new monetary realignment will affect fishery exports. Tuna packers will be hit hardest. Their exports to the U.S. in 1970 were 53.6% of sales. Canned-tuna sales to the U.S. were temporarily suspended at the end of 1971 because of the decomposition problem. But when the problem ends and sales resume, it is unlikely that export prices can be raised to offset the 16.88% increase in yen's value.

Prices for canned tuna in oil exported to West Germany, Great Britain, France, and other European countries will also be difficult to increase "because of the traditional resistance among Europeans to price changes."

## Canned Salmon Affected

Canned-salmon exports will be affected severely. The only outlet for canned red salmon is Great Britain. The yen value has risen 7.6% more than the pound, so sales negotiations will be difficult. Canned crab export also was uncertain at the end of 1971.

## Frozen Tuna

Raw tuna supply remains unchanged--demand continues to outstrip supply--so frozen tuna prices for export likely will rise to offset yen-dollar change. ('Suisan Tsushin', Dec. 21, 1971.)

## JAPAN (Contd):

BUILDS 10 FISHING VESSELS  
FOR ICELAND

Taito Seimo, a fish-net manufacturer, has received an order to build ten 500-gross-ton trawlers for export to Iceland. This is the first time any European country has ordered Japanese fishing vessels.

Iceland invited bids from foreign countries, including Japan, France, Norway, West Germany, and Poland to build thirty 500-ton and several 1,000-1,500-ton trawlers. The Japanese firm won the contract for the ten 500-ton trawlers primarily because it promised early delivery. The vessels are scheduled for delivery by the end of March 1972. ('Suisan Keizai Shimbun', Jan. 13, 1972.)

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## SHRIMPING OFF GUIANAS WILL EXPAND

Seven firms shrimping off the Guianas, South America, and several others have asked the Fisheries Agency to license 70 shrimp vessels. The 7 now operate 70 shrimpers. They plan to use 35 more because of the favorable outlook. The other firms interested in entering the fishery are seeking licenses for 35 vessels.

Began in 1959

Japanese shrimp fishing off the Guianas was started in 1959 by Sakiyoshi Gyogyo. It expanded. In 1967, seven firms were authorized by the Agency to conduct "experimental" fishing with one-year renewable licenses. At first, the firms had much difficulty because they did not know the grounds and there were labor-management problems. In recent years, however, many have been operating profitably.

The firms formed the South American Northern Coast Trawlers Assoc. and began negotiating with Guianan interests to construct freezing and processing plants at Georgetown, Guyana, and Paramaribo, Surinam. In October 1971, the Association formed its plans to establish a freezing and processing plant at Paramaribo. It hopes to conclude a contract with local interests by March 31, 1972. ('Suisan Keizai Shimbun', Jan. 11, 1972.)

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SCIENTIST CAUTIONS AGAINST  
OPTIMISM ABOUT SKIPJACK

The 3-day tuna conference at Tokai University, Shimizu, Feb. 2, 1972, heard a government scientist urge caution in developing the skipjack resource. Moriya Anraku, Tohoku Regional Fisheries Research Laboratory, said the facts do not necessarily support the optimism in some quarters. His opinion runs counter to the Fisheries Agency's administrative policy for the fishery.

## Anraku's Thesis

This is the substance of Anraku's statement: Some optimistic forecasts have been made about skipjack abundance, but close examination of catch fluctuations in the pole-and-line fishery reveals facts that do not necessarily support such optimism. For example, the abundance of skipjack off Japan has trended downward since 1965. In southern waters, operations are extending over wider areas; fishing is concentrated selectively on highly dense schools. Despite the extension of fishing grounds, the catch per unit of effort remains the same.

It is hoped that application of new fishing methods and development of new grounds will produce some increase in catch. However, the question whether this increase can produce greater economic gains must be examined closely along with the structural changes in the fishery and international implications. ('Katsuo-maguro Tsushin', Feb. 7.)

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GYOGO WILL REPLACE TRAWLER  
LOST OFF NEW YORK

Taiyo Gyogyo, whose stern trawler 'Taiyo Maru No. 77' (1,800 gross tons) caught fire and sank off New York on Feb. 9, 1972, has decided to replace it. Construction of a 5,000-ton trawler, to be named 'Tenyo Maru No. 3', will be begun soon; completion is scheduled for February 1973. Meanwhile, 'Taiyo Maru No. 82' (2,400 gross tons), operating in the Bering Sea in mid-February, will be reassigned to the southern area trawl fishery (presumably the Atlantic). ('Suisan Keizai Shimbun', Feb. 15.)