Japanese Shrimp Import Trends for 1963-80 Told

Japanese imports of frozen shrimp in 1980 amounted to 143,256 metric tons (t), valued at ¥240,353 million ($1,073 million at ¥224 = US$1), down 10 percent in quantity and 22 percent in value compared with 1979. This was the first decline in shrimp imports since 1974 and the lowest imports in the past 3 years. The decline was reportedly due to the rise in storage holdings and depressed domestic sales. The import prices averaged ¥1,677/kg ($3.40/pound) for the year, a 12 percent decrease from 1979.

However, frozen shrimp imports into Japan for the month of December 1980 were 14,893 t valued at ¥22,496 million ($107 million at ¥210 = US$1) on a customs clearance basis, according to the Finance Ministry. This is 2,361 t or 18 percent above the December 1979 imports of 12,532 t. The high level of imports in December was attributed primarily to large purchases from India (3,629 t), Indonesia (1,979 t), and the People's Republic of China (PRC) (1,417 t), which together accounted for 47 percent of the total. Other large suppliers were Australia (850 t), Taiwan (797 t), Thailand (781 t), Pakistan (703 t), Hong Kong (648 t), Norway (589 t), Mexico (576 t), Canada (303 t), Sabah (299 t), and Burma (264 t). Imports from the United States were 33 t.

Since Japan liberalized its shrimp imports in 1961, overseas purchases rose steadily save for brief lapses in 1968, 1974, and 1980. Shrimp imports in 1980 rose more than

Japan's frozen shrimp imports, by leading countries, 1963-80.

	Total imports		Leading country (t)					Total imports		Leading country (t)			
Year	t	US$1,000	India	Indonesia	PRC	Mexico	Year	t	US$1,000	India	Indonesia	PRC	Mexico
1963	11,708	$23,475	n.a.[1]	n.a.	n.a.	n.a.	1972	88,120	$ 291,943	12,812	13,824	3,519	5,407
1964	18,167	31,437	n.a.	n.a.	n.a.	n.a.	1973	117,474	429,845	21,903	18,764	4,475	8,839
1965	21,011	35,938	851	n.a.	5,875	5,210	1974	103,311	404,024	19,898	19,385	9,483	4,580
1966	36,156	60,085	993	n.a.	11,769	4,889	1975	113,672	464,527	29,942	21,060	9,768	4,085
1967	44,466	79,732	2,147	15	5,004	7,995	1976	123,334	738,986	26,901	25,510	5,569	5,235
1968	35,204	78,079	3,164	661	3,769	5,769	1977	124,780	790,806	25,803	25,701	3,749	4,184
1969	48,886	121,748	4,864	22,604	4,136	5,511	1978	143,962	998,581	31,580	28,338	9,197	7,860
1970	57,146	137,026	6,210	3,684	6,248	7,210	1979	158,672	1,375,210	38,757	29,621	12,082	4,727
1971	78,874	214,591	9,702	8,223	4,990	6,520	1980	143,256	1,073,004	35,249	27,569	14,502	3,399

[1]n.a. = not available.

Japanese frozen shrimp imports, by country of origin, 1974-80.

Country of origin	Yearly imports (t)							Country of origin	Yearly imports (t)						
	1974	1975	1976	1977	1978	1979	1980		1974	1975	1976	1977	1978	1979	1980
India	19,898	29,942	26,901	25,803	31,580	38,757	35,249	Philippines	1,521	1,109	2,081	2,393	2,791	3,701	2,395
Indonesia	19,385	21,060	25,510	25,701	28,338	29,621	27,569	Nigeria	771	867	831	1,060	1,060	564	530
PRC	9,483	9,768	5,569	3,749	9,197	12,082	14,502	Sabah	1,728	1,515	2,296	2,505	2,328	2,728	2,412
Mexico	4,580	4,085	5,235	4,184	7,860	4,727	3,399	Bahrain	1,227	1,014	974	1,041	1,031	239	--
Thailand	6,314	8,837	9,849	2,760	8,377	9,294	8,850	Brazil	855	391	770	1,595	2,597	2,921	2,732
Taiwan	3,245	3,395	3,241	4,389	5,567	5,998	4,990	Liberia	611	330	320	270	212	181	122
Pakistan	2,305	2,951	3,892	3,889	3,675	4,179	3,575	Guyana	762	939	900	1,067	1,176	875	976
S. Korea	3,127	2,932	4,673	2,574	2,461	2,219	2,501	Cameroons	809	474	386	217	88	170	10
Malaysia	2,619	2,392	3,877	3,392	2,827	3,131	1,717	Singapore	517	345	336	489	374	326	124
Iran	854	651	803	515	815	996	342	U.S.A.	130	68	332	454	479	285	68
Australia	5,189	4,663	6,189	7,742	7,546	10,955	8,053	Bangladesh	220	339	565	865	1,170	1,694	1,721
Hong Kong	4,051	4,140	4,627	5,993	4,608	4,365	3,685	U.S.S.R.	1,294	0	0	0	1,861	261	121
Cuba	3,193	3,548	1,693	1,417	919	1,125	592								
Kuwait	236	379	1,031	572	635	485	175	Other Total	103,311	113,672	123,334	124,780	143,962	158,672	143,256
Vietnam	2,154	1,639	2,356	2,760	2,411	1,794	1,666								

twelvefold over 1963. Annual imports in excess of 100,000 t have been maintained since 1973. Up to 1970, Mexico and the PRC were major suppliers of shrimp to Japan. Since 1971, however, India and Indonesia have replaced them as leading suppliers and accounted for 44 percent of Japan's total shrimp imports in 1980. The PRC was the third and Mexico the ninth major suppliers in 1980, each with 14,502 t and 3,399 t, respectively.

Other important suppliers in 1980 were Thailand with 8,850 t, Australia with 8,053 t, Taiwan with 4,990 t, Hong Kong with 3,685 t, Pakistan with 3,575 t, Brazil with 2,732 t, and South Korea with 2,501 t. Imports for the year were record highs from the PRC and Bangladesh. Imports from the United States were 68 t. (Source: FFIR 81-4.)

Japan's 1979 Marine Fish Catch Drops 2%

The Japanese marine fisheries catch from January through December 1979 totaled 9,476,793 metric tons (t), down 2 percent from 1978, according to the Ministry of Agriculture, Forestry, and Fisheries. Sharp declines occurred in some species, notably dolphin fish (-30 percent), albacore (-24 percent), and saury (-23 percent), whereas significant gains were recorded in the catches of king crab (+108 percent), salmon (+28 percent), and rockfish (+25 percent).

The most important species landed in terms of quantity was sardine, as in 1978, with a catch of 1,979,417 t, which was followed by Alaska pollock with 1,551,116 t. Mackerel, the second important species in quantity in 1978, declined 8 percent in 1979 and came in third. Sardine, Alaska pollock, and mackerel together accounted for 53 percent of the total marine catch for 1979.

Tuna and skipjack landings, which totaled 709,435 t in 1979 were down 8 percent due largely to the sharp decline in the catches of albacore (-24 percent) and skipjack tuna (-10 percent). (Source: FFIR 81-1.)

Japan's catch of selected marine species, 1978 and 1979.

Species	Catch (t) 1979	1978
Tuna		
Bluefin	44,241	46,555
Albacore	66,822	87,675
Bigeye	130,466	127,666
Yellowfin, large	99,659	97,983
Yellowfin, small	21,729	24,712
Total	362,917	384,591
Skipjack		
Skipjack	329,948	369,530
Frigate mackerel	15,570	15,091
Total	346,518	384,621
Billfish	43,357	46,627
Shark	42,480	41,775
Salmon	131,021	102,760
Herring	6,819	6,708
Sardine	1,979,517	1,881,575
Jack mackerel	183,883	153,131
Mackerel	1,491,051	1,625,865
Saury	277,960	360,213
Yellowtail	44,970	37,414

Species	Catch (t) 1979	1978
Flatfish	288,896	313,830
Cod		
Cod	91,829	89,016
Alaska pollock	1,551.116	1,546,176
Total	1,642,945	1,635,192
Atka mackerel	118,888	134,763
Rockfish	40,447	32,239
Rockcod	9,927	11,733
Sandfish	10,179	12,551
Argentine	12,088	13,103
Croaker	39,444	37,465
Lizard-fish	21,576	20,967
Marine eel	15,768	17,736
Hairtail	30,518	28,085
Sea-robin	2,473	2,761
Ray	9,496	8,264
Sea bream	28,825	30,065
Dolphin fish	9,470	13,467
Flying fish	8,761	9,555
Mullet	11,651	10,652

Species	Catch (t) 1979	1978
Seabass	9,544	11,570
Sandlance	110,484	99,078
Shrimp	52,661	59,676
Crab		
King	270	130
Tanner	23,476	22,985
Blue	3,905	3,500
Other	52,618	53,827
Total	80,269	80,442
Squid		
Common squid	212,849	257,117
Cuttlefish	14,148	18,772
Other squid	301,837	243,824
Total	528,831	519,713
Octopus	51,986	65,441
Sea urchin	26,500	25,930
Sea cucumber	9,381	10,143
Shellfish	357,490	347,190
Seaweeds	186,494	162,893

Russians Culture Caspian Inconnu

Soviet researchers at the Caspian Scientific Research Institute of Fisheries have reported that the Caspian inconnu, *Stenodus leucichthys leucichthys,* can be spawned in captivity. The cultivation of these fish is being conducted by three plants in the Volga River delta, which receive and breed the expensive salmonid fingerlings. An ecological regime for spawning that resembles natural conditions has been created in artificial basins. At the age of 30-35 days, the juvenile fish are released into their permanent habitat in the Caspian Sea.
(Source: LSD 80-19.)

Mexico Develops Sea Urchin Fishery

Mexico has developed a small sea urchin fishery. Commercial fishing began in 1972; earlier Mexican cooperative abalone fishermen used to destroy sea urchins by spreading quicklime along the coast where they occurred. Sea urchins compete with abalone for seaweed and kelp and as a result were disliked by the abalone fishermen. Mexican fishery officials encouraged the cooperative fishermen to harvest the sea urchins along with abalone and by 1972 commercial exports began.

Species

Two species of sea urchin are commonly fished in Mexican waters: Purple sea urchin, *Strongylocentrotus purpuratus,* and red sea urchin, *S. franciscanus.* The purple sea urchin lives on rocky bottoms in water up to 65 m deep, where the species survives in temperatures ranging from 2° to 23° C. The red sea urchin typically lives at depths from 5 to 10 m, although it is sometimes found at depths of up to 125 m.

Sea urchins feed on seaweed, dead animals, and even microorganisms found in sand and sewage, but they prefer seaweed and kelp. They are often destroyed (outside the Orient) by fishermen as pests because they can destroy kelp and seaweed beds. Sea urchin populations can reportedly survive in the same area even after they have eaten all of the seaweed growing there by surviving on algae.

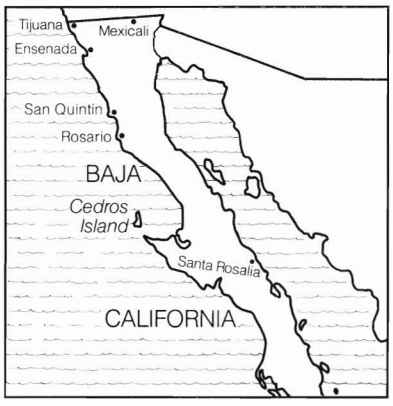
The gonads are the only edible part of the sea urchin. Each sea urchin has five gonads which are commonly referred to as "roe" and are very nutritional. The quality (color and firmness) of the roe has been found to depend primarily on the sea urchin's diet, and will reportedly only be of marketable quality if seaweed formed the bulk of its diet. Predators of the sea urchin include rockfish, flatfish, lobsters, crabs, sea gulls, and sea otters.

Seasons and Grounds

Mexico's sea urchin harvest season runs from June to December. Sea urchins are available all year but in the June to December period the roe has a firmer consistency. Red and purple sea urchins occur in commercial quantities along the northern coast of the Baja Peninsula, from Cedros Island north to the U.S. border (see map). Mexico's Baja Peninsula is the southern limit of the range of both purple and red sea urchins, but their northern range extends to Alaska. Off the northern Baja Peninsula there tend to be large groups of sea urchins wherever the seaweed *Macrocystis pyrifera* occurs.

Fishing Methods

Sea urchins are harvested by both Mexican cooperative and private fishermen aided by Japanese who employ sophisticated diving equipment such as undersea television cameras and photographic equipment which record sea urchin populations for future reference. Mexican fishermen, however, usually rely on small launches and simple diving equipment. Usually at least three Mexican fishermen work together: The diver who collects the sea urchin, a person who is in charge of extracting the roe, and a person who is in charge of the equipment.



Catch

Commercial sea urchin fishing began in 1972 and the catch has since increased from an initial 13 metric tons (t) to 260 t in 1978, the latest date for which data are available. Sea urchins are landed at many scattered locations along the coast of Baja California Norte, but the largest quantities are landed near Ensenada and Rosario (Table 1).

Two major Japanese companies have signed agreements with the Mexican Government to export Mexican sea urchins to Japan. The Taiyo Fisheries Company[1] ships the product to Sapporo. The Sato Shoten Company ships them to Tokyo. Both Japanese companies have been operating in Mexico since 1973. Available information on these ventures is contradictory, but apparently the Japanese companies have formed two Mexican joint venture companies, EPEM (Empresa Promotora y Exportadora de Mariscos) and PROTAKSA (expansion unknown). With an initial investment of $150,000, EPEM built processing plants in Rosario and in Ensenada where about 70 workers clean and pack the roe.

Processing

Processing sea urchin is a delicate and arduous procedure. First-grade sea urchin roe must be unbroken and the natural surface of the roe retained unruptured. When the sea urchin is cracked open, pieces of spine or shell can easily fall into and break the roe. The roe is carefully cleaned and graded according to texture and color. The best quality roe is an intense yellow and is usually rinsed in a solution of salt and iodine, soaked in a chemical solution, and then frozen to maintain its delicate flavor and texture. It is drained and packed in wooden boxes and air shipped in refrigerated compart-

[1]Mention of trade names or commercial firms does not imply endorsement by the National Marine Fisheries Service, NOAA.

Table 1. — Areas and quantity (t) of sea urchins landed in Baja California Norte in 1978.

Area	Quantity
Tijuana	6.9
Ensenada	158.0
San Quitin	1.5
Rosario	89.5
Total	255.9

Source: Direccion de Pesca del Estado de Baja California Norte, 1979.

Table 2. — Quantity[1] and value[2] of Japanese imports of Mexican sea urchin roe from 1973 to July 1980.

Year	Quantity	Value	Year	Quantity	Value
1973	27.0	NA[3]	1977	35.8	375.1
1974	47.8	414.2	1978	44.6	573.0
1975	53.9	493.3	1979	25.7	339.0
1976	82.2	780.8	1980[4]	3.0	38.7

[1]In metric tons.
[2]In US$1,000.
[3]NA = Not available.
[4]Through July.
Source: Japanese Marine Products Importer's Association, "Imports of marine products by country," 1973-July 1980.

ments to Japan. Some sea urchin roe is also dried and salted but usually only low-quality roe, as the frozen roe commands a much higher price.

Exports to Japan

Almost all of Mexico's sea urchin is exported to Japan where it is considered a luxury food. Japanese imports of Mexican sea urchin have been erratic during the period from 1973 to 1980. Exports to Japan increased rapidly from 27 t (product weight) in 1973 to a record 82 t in 1976. Since then exports have declined to only 26 t in 1979 (Table 2). The reason for these variations is not known.

Sea urchin roe in Japan is only available to Japanese consumers through restaurants and is not found in fish markets. Sea urchin roe is most commonly sold in Japanese "sushi" bars. Sushi is a Japanese food formed from rice seasoned with sugar, salt, and rice vinegar. Raw seafood, such as sea urchin roe, is often served on or with a rice-shaped cake. (Source: IFR-80/169.)

Note: Unless otherwise credited, material in this section is from either the Foreign Fishery Information Releases (FFIR), compiled by Sunee C. Sonu, Foreign Reporting Branch, Fishery Development Division, Southwest Region, NMFS, NOAA, Terminal Island, CA 90731, or the International Fishery Releases (IFR), or the Language Services Daily (LSD) or Biweekly (LSB) reports produced by the Office of International Fisheries, NMFS, NOAA, Washington, DC 20235.

Japan Sees Progress in Yellowtail Culture

The development of nursery production and stock techniques in 1980 has greatly enlarged the volume of fish produced by aquaculture in Japan. In particular, the volume of yellowtail hatched in nurseries rose from 100,000 to 300,000. Other increased stocks include flounder, scad, blue crab, and porgy. The target for tiger shrimp nursery production of 78,900,000 is in the process of being accomplished and the porgy target has already been greatly exceeded at 800,000.

Cultured yellowtail production rose from 20,000 t in 1970 to 115,000 t in 1977. However, natural production peaked in 1970 at 55,000 t and declined to 27,000 t in 1977. This trend has been seen in the Seto Inland Sea area, where, between 1968 and 1970, 1,100-1,500 t were caught. However, in 1977 the volume has declined to 400 t. Problems with yellowtail larvae catch and changes in fishing methods were the main factors for the decrease. Since 1977, these resources have again revived, due to the technological development of nursery production.

The Inland Sea production of yellowtail is 500 t to date. It is thought that there are presently enough nurseries to stock yellowtail sufficiently. The large volume in the Inland Sea is mainly due to the fact that this area was used for experimentation during the development of the nursery production techniques.

Furthermore, in fiscal 1979, 25,000 fish reached a record length of 13-20 cm. In the current fiscal year, (April 1980-March 1981) in the eastern part of the Inland Sea, 44,000 nursery-bred fish were caught between 4 and 6 cm, and there was a record catch of 35,000 large nursery-bred fish having a length of 13-20 cm. (Source: LSD 80-24.)

Japan's 1981 Salmon Carryover Stock Down

Data compiled by major Japanese fishery firms show that their frozen, salted, and imported salmon holdings carried over to 1981 totaled 32,100 metric tons (t). This is 51 percent below the carryover of 65,000 t in 1980. Cold-storage holdings of imported salmon declined as much as 65 percent from a year ago. A breakdown of Japanese cold storage holdings of frozen, salted, imported and fall chum salmon as of the beginning of 1980 and 1981 is shown in the table below. (Source: FFIR 81-3.)

Japan's 1981 salmon carryover stocks.

	Salmon holdings (t)					
Item	Reds	Chums	Pinks	Silver	Others	Total
1981						
Frozen	2,000	3,000	100	1,500	1,400	8,000
Imports	6,500	1,000	300	2,000	200	10,000
Salted	2,700	3,200	1,200	1,000	—	8,100
Fall chum	—	6,000	—	—	—	6,000
Total	11,200	13,200	1,600	4,500	1,600	32,100
1980						
Frozen	4,000	13,000	3,300	2,000	—	22,300
Imports	28,000	—	—	—	—	28,000
Salted	3,500	4,100	800	600	—	9,000
Fall chum	—	5,700	—	—	—	5,700
Total	35,500	22,800	4,100	2,600	—	65,000