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## SURIMI SUPPLY, DEMAND, AND MARKET OF JAPAN

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**U.S. DEPARTMENT OF COMMERCE** National Oceanic and Atmospheric Administration National Marine Fisheries Service Southwest Region



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#### EXECUTIVE SUMMARY

Japan is the world's largest market for surimi, utilizing an average of 413,000 metric tons (mt) during 1990-2001. Supply for this market comes from both domestic production and imports. The share of the Japanese surimi market supplied by imports increased from 43 percent in 1992 to 61 percent in 2001.

Japan's surimi production increased rapidly from 43,000 mt in 1966 to 423,000 mt in 1973 and reached a record of 424,000 mt in 1976. Since 1977, however, surimi production has steadily declined, and the production in 2001 of 110,000 mt was less than 26 percent of the record production, and was the lowest production in 34 years.

Japan is a major importer of frozen surimi. In 2001, Japan's imports of frozen surimi were worth over \$571 million. Frozen Alaska pollock surimi was the dominant product imported into Japan, representing 46 percent in volume and 41 percent in value in 2001. Japanese imports of frozen Alaska pollock surimi came mostly from the United States.

Imports of frozen cod and Pacific whiting surimi, mostly surimi made from Pacific whiting, fluctuated between 17,000 and 26,000 mt from 1995 to 2000 The United States has consistently been the leading supplier of frozen Pacific whiting surimi to Japan, providing over 94 percent of the total

Prices of surimi are primarily determined by supply and demand, but quality, origin, and species are also important. Wholesale prices for frozen surimi generally fall during summer. In 2002, however, summer prices did not decline, due to reduced imports and low levels of inventory of frozen surimi. Average wholesale prices of frozen surimi in June 2002 were up 8-19 percent from prices for December 2001 and 4-15 percent higher than prices for the same period in 2001. Japanese imports of Alaska pollock surimi decreased from 10,663 mt in June 2001 to 1,371 mt in June 2002.

Japan regulates imports of surimi with import quota (IQ) and tariffs. To meet strong demand, the Japanese government increased the IQ for Alaska pollock surimi from 19,000 mt for 1986 to 140,000 mt for 1990, and then to 205,400 mt for 2002. As the United States and Japan are signatories to the World Trade Organization (WTO), WTO tariffs apply to U.S. exports of frozen surimi and frozen fish meat: 4.2 percent for frozen surimi and frozen fish meat of cod, pollack, hake; and 3.5 percent for frozen surimi of threadfin bream.

#### INTRODUCTION

Surimi, a refined form of minced fish meat, is the raw material used in making a wide range of finished products such as imitation crab meat, chikuwa (broiled surimi product), satuma-age (fried), itatsuki kamaboko (steamed), fish hams, fish sausages, and other seafood analogs (Sonu 1986).

Although the technique for making surimi has been practiced in Japan for many centuries, only during the past 40 years has the tradition evolved into a major industrial operation.

Before 1960, freeze denaturation of protein was a poorly understood phenomenon. When a protein becomes denatured, it loses its native structure and its ability to perform certain biochemical functions such as forming a gel, an important property in surimi.

A new technology for processing Alaska pollock into a stable frozen surimi, which is protected from freeze denaturation, was developed in the early 1960s in Japan. It allowed surimi manufacturing to evolve into an automated mass-production system to keep pace with expanding demand. Automation of surimi manufacturing procedures was essentially completed both on board and on shore within about 10 years following the introduction of frozen surimi.

Alaska pollock, *Theragra chalcogrammus*, is the most widely utilized species in the Japanese surimi industry because of its abundance, good gel-forming capability, year-round availability, white flesh, and reasonable price.

Japan was once the world's largest producer of surimi. Recently, however, the Japanese production of surimi has dropped significantly due mainly to shortage of supply of fish from domestic and foreign waters, and Japan has become increasingly more dependent on imports for its supply. This need is likely to remain because increased catches of fish in foreign waters by the Japanese fleet are not likely in the near future.

Japan is the major user of surimi and the most important export market for U.S. surimi, accounting for 51 percent of U.S. exports of surimi in 2001.

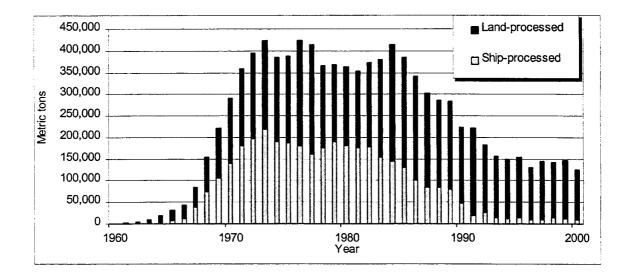
This report provides a detailed examination of the Japanese surimi production as well as its imports, exports, supply, demand, and market, in order to identify potential opportunities for export by U.S. surimi producers.

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#### SURIMI PRODUCTION

The history of frozen surimi production in Japan from 1960 to 2001 is illustrated in Figure 1 and Table 1. Surimi production increased rapidly during the 6-year period between 1967 and 1973. This trend was facilitated by the advent of automated facilities for surimi production and by the introduction of factoryship operations. By 1973, total annual output of surimi rose to 423,000 mt, more than five times the 1967 production. From 1974 to 1984, the production of surimi hovered around 350,000 to 420,000 mt per year. From 1985 to the present, the production has steadily declined due mainly to shortage of supply of fish in domestic and foreign waters. The production was 413,000 mt in 1985 but only 110,000 mt in 2001.

Most of the Japanese on-shore surimi processing industry is located on Hokkaido Island, where domestic landings of Alaska pollock and Atka mackerel, the two major species used as raw material, take place. Of the 106,000 mt of land-processed frozen surimi processed in 2001, it is estimated that 73,000 mt were made from Alaska pollock, 21,000 mt from Atka mackerel, 3,000 mt from Japanese sardine and Pacific mackerel and 10,000 mt from other species.



#### Figure 1. Japanese surimi production, 1960-2001 (metric tons).

Sources: Japan Surimi Association 1984 Ministry of Agriculture, Forestry, & Fisheries 1974-2002 Suisan Tsushin Sha 2001 Minato Shinbun Sha 2002 Hokkai Keizai Shinbun Sha 2002

		Land-pro	cessed sur	imi		Ship-	
Year	Alaska Pollock	Sardine/ mackerel	Atka mackerel	Other fish	Sub- Total	processed surimi	Total
1000	_*				250		250
1960	- ^	-	-	-	250	0	250
1961	-	-	-	_	2,500	0	2,500
1962	-	-	-	-	4,500	0	4,500
1963		-	-	-	9,282	0	9,282
1964		-	-	-	18,060	0	18,060
1965		-	-	-	23,639	8,184	31,823
1966	-	-	-	-	29,913	13,034	42,947
1967		-	-	-	44,869	39,283	84,152
1968	61,355	-	-	16,962	78,317	75,525	153,842
1969	99,140	-	-	15,955	115,095	105,297	220,392
1970	134,834	-	-	18,457	153,292	138,743	292,035
1971	165,895	-	-	13,264	179,159	180,138	359,297
1972	180,223	-	-	18,685	198,909	196,131	395,040
1973	190,555	-	4,697	9,938	205,191	217,891	423,082
1974	173,765	-	11,638	8,339	193,744	190,556	384,300
1975	193,978	-	2,908	3,569	200,455	187,228	387,683
1976	233,406	-	6,361	3,223	242,990	181,243	424,233
1977	234,269	-	13,044	4,338	251,651	161,798	413,449
1978	177,655	-	5,669	6,406	189,730	175,853	365,583
1979	162,422	-	7,459	7,084	176,965	190,621	367,586
1980	165,818	-	10,353	8,744	184,915	179,331	364,246
1981	160,200	-	-	18,280	178,480	176,442	354,922
1982	178,941	_	-	17,013	195,954	177,095	373,049
1983	210,855	3,914	3,141	8,370	226,280	153,593	379,873
1984	248,186	5,463	3,975	11,300	268,924	144,440	413,364
1985	230,036	5,599	3,540	15,115	254,290	130,588	384,878
1986	205,074	5,481	4,451	25,773	240,779	101,053	341,832
1987	195,921	5,260	2,464	16,682	220,327	83,844	304,171
1988	177,887	4,471	5,286	14,434	202,078	85,328	287,406
1989	180,305	3,215	5,973	13,435	202,928	80,415	283,343
1990	147,817	4,156	13,453	10,557	175,983	47,962	223,945
1991	154,653	3,957	19,282	23,435	201,327	18,959	220,286
1992	130,797	3,813	9,276	14,092	157,978	25,450	183,428
1992	108,528	3,496	13,734	15,251	141,009	14,812	155,821
		7,592	12,237	15,107	138,272	11,032	149,304
1994	103,336	5,027	22,363	18,121	140,749	13,805	154,554
1995	95,238		•	13,833	119,278	9,803	129,086
1996	69,553	6,067 5,260	29,825				
1997	83,152	5,260	28,417	16,580	133,409	10,214	143,623
1998	84,196	4,331	26,775	11,784	127,086	14,730	141,816
1999	97,413	3,373	23,809	9,968	134,563	11,373	145,936
2000	84,508	1,747	20,195	9,929	116,379	8,783	125,162
2001	73,259	2,845	20,632	9,745	106,481	4,000	110,481

## Table 1. Japan's frozen surimi production, 1960-2001 (metric tons).

-\*....not available Sub-total may not add due to rounding Sources: Japan Surimi Association 1984 Ministry of Agriculture, Forestry, & Fisheries 1974-2002 Suisan Tsushin Sha 2001 Minato Shinbun Sha 2002 Hokkai Keizai Shinbun Sha 2002

#### ALASKA POLLOCK

Alaska pollock, Theragra chalcogrammus, is the most widely utilized species in the Japanese surimi industry. Though almost any fish can be used to make surimi, no other species can match the combination of its abundance, good gel-forming capability, year-round availability, white flesh, and reasonable price (Sonu 1986).

Alaska pollock is widely distributed in the North Pacific, from Central California into the eastern Bering Sea, along the Aleutian arc, around Kamchatka, in the Okhotsk Sea and into the southern Sea of Japan (Cohen et al. 1990).

#### World catch of Alaska pollock

Alaska pollock constitute one of the world's major fishery resources (Table 2). Total world catches of Alaska pollock ranged between 3.3 and 4.8 million mt annually in recent years. Alaska pollock are caught exclusively in the North Pacific (Table 3). Approximately two-thirds of the catch was taken in the Northwest Pacific in an area west of 175° which includes the coastal and offshore areas of Japan, the Republic of Korea, and Russia. The remaining one-third came from the U.S. Exclusive Economic Zone (EEZ) in the Northeast Pacific.

The development of Alaska pollock fisheries was stimulated in the early 1960s by successful implementation by Japan of mechanized processing of Alaska pollock into frozen surimi. By 1972, the fishery had expanded throughout the North Pacific, mostly by Japan and to a lesser extent by the former Soviet Union and the Republic of Korea. The combined harvests of Alaska pollock by these three countries increased ninefold, from 464,000 mt in 1961 to 4.2 million mt in 1972 (Figure 2).

Total world harvest of Alaska pollock reached a peak of 6.76 million mt in 1986 but have been on a downward trend since then, falling to 3.36 million mt in 1999 (Figure 2). The decrease in global landings of Alaska pollock was due mainly to sharply declined catches by Russia and Japan. Combined landings by these two countries declined from 5.01 million mt in 1986 to 1.88 million mt in 1999.

Of nine nations that reported Alaska pollock landings in 1999, Russia ranked highest with 45 percent of the total (Table 3). The United States was second with 31 percent, while Japan, the world's largest producer during 1951-1976, was in third place. Japan's share of the world catch decreased sharply from over 83 percent during the 1950s to 11 percent in 1999. China and the Republic of Korea respectively harvested 5 and 4 percent of the world total. The combined catch of other countries including Taiwan, the Democratic People's Republic of Korea, Poland, and Canada accounted for under 4 percent of the total catch.

Russian annual harvest of Alaska pollock reached a high in 1986 at 3.58 million mt annually, but has since declined sharply (FAO 1988). The catch in 1999 of 1.5 million mt was about 42 percent of the record landings, and was the lowest catch in 26 year. The Total Allowable Catch (TAC) for Alaska pollock in the Russian Exclusive Economic Zone was reduced by 45 percent from 1,678,000 in 2000 to 929,600 mt in 2002 to protect the population (Hokkai Keizai Shinbun Sha 2002).

The U.S. fishing industry initially embarked on an exploratory Alaska pollock fishing venture in 1974 (Koslow 1976). The industry was stimulated by a strong domestic demand for Alaska pollock as an acceptable substitute for Atlantic cod (Gadus morhua) for breaded fish products. The Alaska pollock fishing operation, however, remained at a small scale, until the late-1980s (Figure 2).

Foreign access to U.S. waters was restricted following the establishment of the U.S. EEZ in 1977. The U.S. commercial fishery for Alaska pollock experienced a short period of joint venture operations in the mid-1980s and was fully a U.S. fishery by 1988, when foreign fishing was phased out. To fill the strong demand for surimi, the U.S. fishery expanded each year and the harvests of Alaska pollock continued to increase, reaching a peak in 1990 at 1.41 million mt. Catches have since remained relatively stable and averaged about 1.25 million mt during the period 1991-2000 (Figure 2).

Species	1994	1995	1996	1997	1998	1999
Peruvian anchovy	12,521	8,645	8,864	7,685	1,729	8,723
Alaska pollock	4,375	4,809	4,549	4,487	4,049	3,362
Atlantic herring	1,930	2,353	2,329	2,534	2,422	2,404
Skipjack tuna	1,498	1,655	1,584	1,613	1,884	1,976
Chub mackerel	1,531	1,575	2,178	2,427	1,924	1,955
Japanese anchovy	821	972	1,254	1,667	2,094	1,820
Chilean			•	•	_,	_,
jack mackerel	4,262	4,955	4,379	3,597	2,026	1,423
Largehead hairtail	1,081	1,244	1,283	1,206	1,435	1,419
Blue whiting	495	544	631	712	1,185	1,323
Yellowfin tuna	1,107	1,115	1,083	1,213	1,252	1,258
Atlantic cod	1,249	1,271	1,341	1,375	1,213	1,093
Argentine		•	·	·	•	- <b>·</b>
shortfin squid	506	521	656	980	665	1,091
Capelin	884	749	1,527	1,605	985	905
European pilchard	1,167	1,209	996	999	941	901
Araucanian herring	341	127	447	441	318	782
Gulf menhaden	767	472	492	598	497	694
European sprat	580	602	672	700	696	684
Atlantic mackerel	857	794	560	559	668	611
Akiami paste shrimp	345	406	461	496	587	599
European anchovy	523	619	528	501	499	598
Japanese						
Spanish mackerel	228	259	301	3,66	552	595
Japanese sardine	1,314	733	431	418	296	515
Japanese flying squid	504	513	716	603	379	498

## Table 2. World landings of principal species, 1994-1999 (1,000 metric tons).

Sources: FAO 1999, 2001

Country	1993	1994	1995	1996	1997	1998	1999	
Pacific ocean:								
Northwest:								
China	135	130	189	167	258	141	117	
China, Taiwan	0*	0	0	0	0	0	0	
Japan	382	379	339	331	339	316	382	
Korea, D.P. Rp.	**	75	120	15	67	60	55	
Korea, Rep.	181	297	335	224	223	236	146	
Poland	235	270	249	116	125	82	66	
Russian Fed.	2,114	1,747	2,208	2,440	2,253	1,931	1,500	
		2,898	3.441	3,294	3,265	2,766	2,266	
Area total	3,048	2,090	•, ••=	0,001	·		_,	
Area total acific ocean: Northeast:	3,048	2,090	-,	0,001	·	·	_,	
acific ocean:	3,048	5	3	2	2	1	1	
acific ocean: Northeast: Canada China	840	5 40	·				-	
acific ocean: Northeast: Canada China Japan	8 40 0	5 40 0	3 60 –	2 60 -	2	1	1	
acific ocean: Northeast: Canada China Japan Korea, Rep.	8 40 0 45	5 40 0 15	3	2 60 - 2	2	1	1	
acific ocean: Northeast: Canada China Japan Korea, Rep. Russian Fed.	8 40 0 45 _**	5 40 0 15 * -	3 60 	2 60 - 2 0	2 80 - -	1 50 - -	1 40 - -	
acific ocean: Northeast: Canada China Japan Korea, Rep.	8 40 0 45 _**	5 40 0 15	3 60 	2 60 - 2	2	1	1	
acific ocean: Northeast: Canada China Japan Korea, Rep. Russian Fed.	8 40 0 45 _** 1,478	5 40 0 15 * -	3 60 	2 60 - 2 0	2 80 - -	1 50 - -	1 40 - -	

Table 3. World landings of Alaska Pollock by FAO fishing area and country, 1993-1999 (1,000 metric tons).

Source: FAO 2001

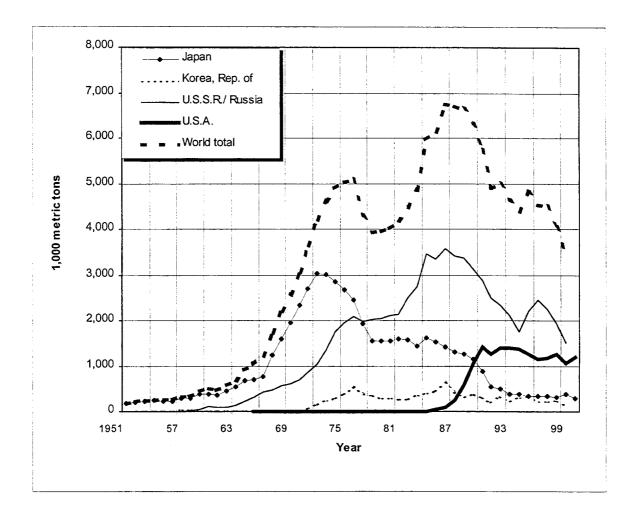


Figure 2. World landings of Alaska pollock by major countries, 1951-2001, (1,000 metric tons).

Sources: FAO 1955, 1957, 1962, 1966, 1974, 1977, 1978, 1982, 1983, 1989, 1992, 1995, 2001 Suisan Tsushin Sha 2001, 2002 U.S. Department of Commerce 2002

#### Japanese catch of Alaska pollock

Prior to 1959, Japanese harvests of Alaska pollock remained below 300,000 mt a year (Table 4), mostly caught in its coastal waters and off the Siberian coast. During the 1960s and the early 1970s Japanese harvests of Alaska pollock steadily escalated, reaching a peak in 1972 at over 3 million mt. The impetus for expanding the Alaska pollock fishery was the development of automated processing of Alaska pollock into frozen surimi and the introduction of factoryship operations in the 1960s. By 1972, Japan expanded its Alaska pollock fishing fleet as well as its range of operations throughout the North Pacific Ocean (Sonu 1986). At that time, Alaska pollock was Japan's major fishery, accounting for about one-third of its total marine fisheries catch (Table 4). The majority of the catch took place in U.S. waters (Figure 3).

The long period of steady growth in catch was followed by a downturn which came mainly as a result of the oil shock in 1974, which made fishing operations very expensive, but also because of restrictions on Japanese catches in the U.S. and the former Soviet EEZs, instituted in 1977. From 1978 through 1985, annual Japanese catches of Alaska pollock fairly stabilized at about 1.5 million mt. Since 1986, however, Japan's total catch of Alaska pollock has declined sharply as Japanese catch allocations within the U.S. and the former Soviet EEZs were greatly reduced. In 1987, the fishery was completely stopped off the United States. The total catch in 2001 of 242,000 mt was less than 8 percent of the record landings, and was the lowest catch in 45 years.

Alaska pollock is taken mostly by trawl, gillnet and longline. In 1999, about 58 percent of Alaska pollock were caught by trawl, 28 percent by gillnet, 4 percent by longline, and the rest by hook and line, dragnet, purse seine, and set net (Table 5). Annual catches for the trawl fishery decreased notably from 1987 to 2000 as Japanese trawling was prohibited in U.S. waters and significant catch restrictions were imposed in Russia waters.

#### Total allowable catch

In January 1997, Japan began implementing TAC levels for several species including Alaska pollock, Japanese sardine, Pacific saury, jack mackerel, chub mackerel, Tanner crab, and Japanese flying squid (Ministry of Agriculture, Forestry, and Fisheries 1999). The TAC is set by the Ministry of Agriculture, Forestry, and Fisheries together with prefectural governments (Ministry of Agriculture, Forestry, and Fisheries 1998).

The TAC for Alaska pollock was set at 374,000 mt in 2000, but due to low catches and abundance, it was decreased to 363,000 mt in 2001, and to 325,000 mt in 2002 (Table 6). Only about 56 percent of the 2001 TAC was landed.

#### Japanese catch in U.S. waters

The Japanese Alaska pollock fishery in Alaskan waters began in 1958 in the Bering Sea and in 1961 in the Gulf of Alaska (Suisan Sha 1969). The fishery grew rapidly in these areas and catches peaked in 1972 at 1.65 million mt, about 54 percent of its total landings of Alaska pollock for that year (Figure 3).

Since then, the Japanese harvest of Alaska pollock in U.S. waters has declined, following catch restrictions implemented after passage of the Magnuson Fishery Conservation and Management Act (MFCMA) in 1976 (Table 7). The Alaska pollock catch allocation to Japan in U.S. EEZ was reduced from 942,572 mt in 1980 to only 3,950 mt in 1987. Japanese Alaska pollock fishing was phased out in 1987 in the Gulf of Alaska and in 1988 in the Bering Sea and Aleutian Islands.

#### Japanese catch in Soviet/ Russian waters

Prior to 1977, Japanese fishermen caught large amounts of Alaska pollock off the former Soviet Unions's coast (Table 8). The Soviet Union, however, implemented its EEZ in 1977 and government representatives of Russia and Japan have met annually in recent years to determine catch quotas in their respective 200-mile fishing zones.

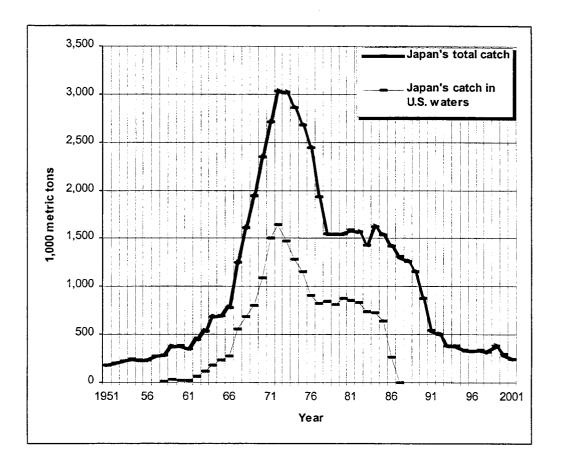
Japan's mutual catch quota which is "free-of-charge" for Alaska pollock in Soviet (now Russian) waters was significantly reduced from 370,000 mt in 1977 to 51,300 mt in 1986 and to 3,204 mt in 2002 (Table 8). To supplement Japan's declining Alaska pollock allocation, the Soviets have provided an additional feebased catch allocation since 1987. However, this was also reduced steeply from 73,000 mt in 1987 to 11,500 mt in 1992, and to only 3,250 mt in 2002. The 2002 combined mutual and fee-based catch quota in Russian waters for Alaska pollock was about 6,000 mt.

	Sardine	Jack	Chub	Alaska	Atka		Marine fishes
Year		mackerel	mackerel	pollock	mackerel	Croaker	Total
1051	260	07	1 5 1	104	-*		
1951	368	87	151 287	184	-*	-	3,774
52	258	187	287	206 225	_	-	4,646 4,387
53	344	239			-	-	
54	246	251	297 244	242	-	_	4,304
55	211	238 246	244 266	231 235	121	98	4,658 4,488
56	206 212	313	276	235	106	112	5,067
57	137	324	268	281	48	107	5,198
58	120	432	295	376	100	115	5,568
59	78	432 596	351	380	116	129	5,817
60 1961	127	542	338	353	185	116	6,287
	108	518	409	453	122	102	6,397
62 63	56	463	465	532	150	103	6,200
63 64	16	520	496	684	205	74	5,868
65	9	560	669	691	107	101	6,382
66	13	514	624	775	106	98	6,558
67	17	423	687	1,247	82	85	7,241
68	24	358	1,015	1,606	87	71	7,993
69	24 21	341	1,011	1,944	103	66	7,976
70	17	269	1,302	2,347	147	64	8,598
1971	57	315	1,254	2,707	147	50	9,149
72	58	194	1,190	3,035	181	42	9,400
73	297	183	1,135	3,021	115	45	9,793
74	352	216	1,331	2,856	144	52	9,749
75	526	236	1,318	2,677	115	45	9,753
76	1,066	207	977	2,445	229	39	9,605
77	1,420	187	1,355	1,931	235	40	9,688
78	1,637	154	1,626	1,546	135	37	9,683
79	1,817	185	1,414	1,551	119	39	9,477
80	2,198	147	1,301	1,552	117	32	9,909
1981	3,089	125	908	1,595	123	33	10,143
82	3,290	178	718	1,567	103	30	10,231
83	3,745	179	805	1,434	56	27	10,697
84	4,179	238	814	1,621	66	24	11,501
85	3,866	225	773	1,532	66	21	10,877
86	4,210	186	945	1,422	89	20	11,341
87	4,362	258	701	1,313	99	19	11,129
88	4,488	297	649	1,259	104	17	11,259
89	4,099	286	527	1,154	115	14	10,440
90	3,678	337	273	871	134	13	9,570
1991	3,010	321	255	541	130	13	8,511
92	2,224	293	269	499	98	11	7,771
93	1,714	368	665	382	136	8	7,256
94	1,189	380	633	379	153	8	6,590
95	661	390	470	339	177	9	6,007
96	319	392	760	331	182	7	5,974
97	284	373	849	339	207	6	5,985
98	167	370	511	316	241	5	5,315
99	351	258	382	382	169	5	5,239
2000	150	246	346	300	165	5	5,022
2001	179	212	371	242	161	4	4,730

Table 4. Japanese landings of fish used for surimi materials by species of fish and total annual catch of marine fishes, 1951-2001 (1,000 metric tons).

-\*....not available

Sources: Ministry of Agriculture, Forestry & Fisheries 1967-2002 Suisan Tsushin Sha 2002



- Figure 3. Japan's total catch of Alaska pollock and catch of Alaska pollock in U.S. waters, 1951-2001 (1,000 metric tons).
- Sources: International North Pacific Fisheries Commission 1969 Japan Food Economy Company 1978 Suisan Sha 1974 Ministry of Agriculture, Forestry & Fisheries 1967, 1970, 1978, 1983, 1999, 2002 Suisan Tsushin Sha 2002

	F	<b>Frawls</b>		-			
Year	Distant	Offshore	Small	Gillnets	Longlines	Others	Total
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997	840,572 784,178 676,518 417,050 144,068 140,639 118,419 121,068 71,640 83,104 81,898	221,014 267,366 240,620 235,615 223,701 214,856 147,705 149,959 162,199 156,596 158,117	10,421 9,628 8,091 5,832 5,760 4,103 2,958 2,349 2,453 2,098 1,831	202,192 154,310 179,574 169,469 132,418 101,870 86,566 70,368 71,255 58,694 53,195	28,056 30,981 33,036 28,114 27,940 25,405 19,916 18,802 16,095 16,136 20,811	10,254 9,632 15,911 15,328 7,059 11,883 6,744 16,805 14,865 14,865 14,535 22,933	1,312,509 1,259,095 1,153,750 871,408 540,946 498,756 382,308 379,351 338,507 331,163 338,785
1998 1999	49,516 43,585	151,242 177,927	1,595 1,563	70,856 107,650	13,795 14,291	28,983 37,369	315,987 382,385
2000	41,916	160,501	1,466	63,200	12,979	19,939	300,001

Table 5. Japanese landings of Alaska pollock by fishery type, 1987-2000 (metric tons).

Others include hook and line, dragnet, purse seine, and set net Sources: Ministry of Agriculture, Forestry, & Fisheries 1999-2002

## Table 6. Total allowable catch (TAC) and actual landings of Alaska pollock, 1997-2002.

Year	TAC	Landings*	Percent of
	1,000 m	metric tons	TAC
1997 1998 1999 2000 2001 2002	267 311 374 374 363 325	246 259 343 245 205	92 83 92 66 56

\*...Japanese catch in foreign waters are not included

Sources: Suisan Tsushin Sha 2000, 2001, 2002 Ministry of Agriculture, Forestry and Fisheries 1999, 2002 Suisan Sha 1999, 2000, 2001, 2002 Hokkai Keizai Shinbun Sha 2002

Table 7. Japan's Alaska pollock catch allocations and the actual catch in the U.S. Exclusive Economic Zone by region, 1977-1988 (metric tons)

	Gulf of	Alaska	Bering Sea/Alu	etian Islan	ds Tota	1
Year	(Allocation)	(Catch)	(Allocation)	(Catch)	(Allocation)	(Catch)
1977	44,100	42,415	792,300	782,419	836,400	824,834
1978	40,740	26,093	792,300	821,307	833,040	847,400
1979	38,279	31,920	774,630	779,050	812,909	810,970
1980	46,745	37,897	895,827	832,993	942,572	870,890
1981	82,385	51,885	859,502	803,461	941,887	855,346
1982	90,907	55,046	845,064	780,351	935,971	835,397
1983	58,992	47.725	738,313	684,424	797,305	732,149
1984	77,821	57,864	693,031	665,672	770,852	723,536
1985	25,000	22,937	640,601	620,112	665,601	643,049
1986	140	114	298,013	262,423	298,153	262,537
1987	110		3,950	3,283	3,950	3,283
1988	Õ	õ	0	0,200	0	0,200
1,00	0	Ũ	0	·	-	-

Source: U.S. Department of Commerce 1978-1989

#### Table 8. Japan's Alaska pollock catch allocations in the Soviet/ Russian waters, 1974-2002 (metric tons)

Voor	Mutual quota	Paid quota	Total quota
<u>Year</u>	Mutual Quota	raiu guota	
1974	855,000*	0	855,000*
1975	652,000*	0	652,000*
1976	617,000*	0	617,000*
1977	370,000	0	370,000
1978	345,000	0	345,000
1979	300,000	0	300,000
1980	290,000	0	290,000
1981	290,000	0	290,000
1982 1983	290,000 290,000	0	290,000 290,000
1983	270,000	0	270,000
1985	250,000	ŏ	250,000
1986	51,300	õ	51,300
1987	51,300	73,430	124,730
1988	53,860	73,740	127,600
1989	53,480	67,000	120,480
1990	25 <b>,</b> 736	15,000	40,736
1991	25,727	16,000	41,727
1992	25,732	11,500	37,232
1993	21,732	7,500	29,232
1994 1995	21,726 17,976	7,100 7,000	28,826
1995	14,009	3,000	24,976 17,009
1997	14,167	3,000	17,167
1998	12,167	3,577	15,744
1999	6,667	3,414	10,081
2000	6,300	3,370	9,670
2001	1,551	3,250	4,801
2002	3,204	3,250	6,454

\*...Actual catch

Source: Suisan Sha 1975-2002

#### IMPORTS

Japan is the world's largest importer of frozen surimi. In 2001, Japan imported 309,312 mt of frozen surimi valued at \$571 million (Tables 9 and 10). Frozen Alaska pollock surimi was the dominant product imported into Japan in recent years, representing as much as 46 percent in volume and 41 percent in value in 2001. Frozen threadfin bream surimi was 19 percent in volume and 15 percent in value, while imports of frozen cod surimi, frozen Pacific whiting surimi, and frozen croaker surimi were minor, with combined shares of about 4 percent in volume and 5 percent in value. Frozen surimi made with other species accounted for 31 percent in volume and 39 percent in valued.

Japanese imports of frozen surimi from Alaska pollock came mostly from the United States, with lesser quantities imported from Russia, the Republic of Korea, China, Argentina, Hong Kong, Spain, and Thailand (Tables 11 and 12). Supplies of Alaska pollock surimi from the United States increased in 2001 to a record level, while shipments of this product from Russia, the Republic of Korea, and China decreased sharply. Imports of Alaska pollock surimi, however, decreased sharply from 72,499 mt in January-July 2001 to 56,834 mt in January-July 2002 due to decreased production and exports of surimi by the United States (Suisan Keizai Sha 2002).

Imports of frozen cod and Pacific whiting surimi, fluctuated between 17,000 and 26,000 mt from 1995 to 2000 (Table 13). The United States has consistently been the leading supplier of frozen Pacific whiting surimi to Japan, providing over 94 percent of the total (Tables 13 and 14). Imports in 2001 declined sharply from 2000 due mostly to decreased production and exports by the United States and Canada of Pacific whiting surimi. Supply of cod and Pacific whiting surimi for January-July 2002 was only 1,999 mt compared with 3,868 mt for the same period a year earlier. The United States supplied 96 percent of the total (Suisan Keizai Sha 2002).

Imports of frozen threadfin bream surimi rose sharply from 29,000 mt in 1995 to 59,000 mt in 2001 (Table 15). The products came mostly from Thailand, Hong Kong, and India (Tables 15 and 16). Since 1998, India replaced Hong Kong as the second leading supplier of this product to Japan. Significant quantities were also imported from Indonesia, Viet Nam, and Myanmar. Japan imported 79 mt of this product from the United States in 2001.

Imports of frozen croaker surimi increased sharply from 1995 to a high in 1997, but have since shown a downward trend (Tables 17 and 18). Supplies of frozen croaker surimi from Hong Kong, India, and Venezuela to Japan have declined since 1997, while shipments of this product from Myanmar have increased sharply.

Total imports of other frozen surimi have remained fairly stable since 1995, ranging between 83,000 and 103,000 mt (Tables 19 and 20). Thailand and Argentina continued to dominate the supplies of other frozen surimi. Supplies of frozen surimi from the Republic of Korea to Japan have declined sharply since 1995.

#### Trade barriers

Japan regulates imports of surimi with import quota (IQ) and tariffs. Import quotas are set once a year, with new quotas announced each year. To meet strong demand, the Japanese government increased the IQ for Alaska pollock surimi from 19,100 mt for fiscal year (FY) 1986 to 126,200 mt for FY 1988, and then to 205,400 mt for FY 2002 (Table 21).

While the Japanese Ministry of International Trade and Industry is the lead agency in administering the quota system, it coordinates its actions closely with the Fisheries Agency of the Ministry of Agriculture, forestry, and Fisheries (FAJ). In addition to setting quotas for imports, the government also controls the allocation among the following recipient groups:

- A. Traders: Trading companies with past import history;
- B. Users: Processors' associations, which usually hire traders to perform import functions on their behalf;
- C. Fishermen: Fishermen or fishery organizations fishing in foreign waters and designated by FAJ Director General, or those who received import orders from such fishermen or fishery organizations;
- D. Overseas fishery development: Companies which received import orders from the Overseas Fishery Cooperation Foundation;
- E. First-Come-First-Served: Companies which have import contract for Alaska pollock surimi (more than 10 mt) signed after the date of this IQ announcement.

There is a great deal of variation in the amount of quota held by recipient groups (Table 21) and individual importers. Japanese importers holding surimi import quota allocations are listed in Appendix 1.

Imports of frozen surimi are subject to tariffs. As the United States and Japan are signatories to the World Trade Organization (WTO), WTO tariffs apply to U.S. exports of frozen surimi and frozen fish meat: 4.2 percent for frozen surimi and frozen fish meat of cod, pollack, hake; and 3.5 percent for frozen surimi of threadfin bream (Japan Fish Traders Association 2002).

Tariff rates are calculated as percentage of cost, insurance, and freight (CIF) value.

	Alaska	Cod/	Threadfin		Other	
Year	pollock	Pacific whiting	bream	Croaker	surimi	Total
1995	149,165	19,487	33,592	5,404	82,679	290,327
1996	126,750	17,228	28,507	6,431	87,073	265,989
1997	125,011	26,285	37,319	10,408	103,007	302,030
1998	108,221	17,700	36,365	7,608	84,149	254,043
1999	103,740	20,121	45,098	8,326	88,309	265,594
2000	106,505	17,577	49,741	7,951	87,474	269,248
2001	142,213	6,034	59,131	7,365	94,569	309,312

Table 9. Japanese annual imports of frozen surimi by products and volume, 1986-2001 (metric tons).

Source: Japan Fish Traders Association 1996-2002

## Table 10. Japanese annual imports of frozen surimi by products and value, 1986-2001 (U.S. \$1,000).

	Alaska		Threadfin		Other	
Year	_pollock	Cod	bream	Croaker	surimi	Total
1995	411,316	52,428	84,848	17,054	285,756	851,402
1996	268,285	28,814	64,478	19,776	292,780	674,133
1997	322,832	66 <b>,</b> 675	86,755	31,503	331,191	838,956
1998	209,569	24,722	56 <b>,</b> 473	15 <b>,</b> 759	203,008	509,531
1999	259,175	41,208	83,880	20,140	239 <b>,</b> 375	643,778
2000	207,465	29,881	86,506	22,013	231,950	577,815
2001	233,284	9,213	86,020	18,042	224,463	571,022

Country of origin	1995	1996	1997	1998	1999	2000	2001
U.S.A. Russia Korea, rep. China Argentina Hong Kong Spain Thailand	124,074 22,071 1,764 1,256 0 0 0	110,480 15,715 211 339 0 0 0 0	110,957 12,650 1,039 349 0 0 17 0	93,719 13,315 999 0 0 188 0 0	89,745 13,697 298 0 0 0 0 0	99,118 7,387 0 0 0 0 0	137,193 4,676 278 48 18 0 0 0
Total	149,165	126 <b>,</b> 750	125,011	108,221	103,740	106,505	142,213

Table 11. Japanese imports of frozen Alaska pollock surimi by country of origin and volume, 1995-2001 (metric tons).

Source: Japan Fish Traders Association 1996-2002

Table 12.	Japanese imports of frozen Alaska pollock surimi by
	country of origin and value, 1995-2001 (U.S. \$1,000).

			1997	1998	1999	2000	2001
U.S.A. Russia Korea, rep. China Argentina Hong Kong Spain Thailand	343,153 60,295 4,660 3,208 0 0 0	231,919 35,280 459 611 0 0 0 16	283,638 35,909 2,457 786 0 42	27,035	223,460 34,880 835 0 0 0 0	191,907 15,558 0 0 0 0 0	225,370 7,287 472 122 33 0

Total may not add due to rounding

Country of origin	1995	1996	1997	1998	1999	2000	2001
U.S.A. Chile Canada Russia Argentina Thailand	18,738 688 20 0 41	16,407 624 19 50 128	24,838 544 903 0 0	17,010 0 646 0 26 18	19,077 0 1,044 0 0	16,519 100 796 142 20	5,918 95 21 0 0
Total	19,487	17,228	26,285	17,700	20,121	17,577	6,034

Table 13. Japanese imports of frozen cod and Pacific whiting surimi (excluding Alaska pollock surimi) by country of origin and volume, 1995-2001 (metric tons).

Source: Japan Fish Traders Association 1996-2002

#### Table 14. Japanese imports of frozen cod and Pacific whiting surimi (excluding Alaska pollock surimi) by country of origin and value, 1995-2001 (U.S. \$1,000).

Country of origin	1995	1996	1997	1998	1999	2000	2001
U.S.A. Chile Canada Russia Argentina Thailand	50,872 1,468 45 0 42 0	27,169 1,353 28 127 136 0	63,099 1,380 2,195 0 0 0	23,708 0 921 0 63 30	39,320 0 1,889 0 0 0	28,048 205 1,321 265 41 0	8,964 218 32 0 0
Total	52,428	28,814	66 <b>,</b> 675	24,722	41,208	29,881	9,213

Total may not add due to rounding

Country of origin	1995	1996	1997	1998	1999	2000	2001
Thailand India Indonesia Viet Nam Myanmar U.S.A. Singapore China Malaysia	24,167 478 0 138 34 0 201 154	21,582 277 86 5 4 0 0 125 54	24,547 2,786 836 179 119 0 0 34 71	31,167 3,375 600 191 163 0 8 5 96	38,076 5,857 822 74 132 24 24 24 50 40	40,689 7,436 1,178 39 356 0 0 18 24	40,909 14,835 2,707 309 220 79 54 18
Hong Kong Korea, Rep. Taiwan	8,419 0 0	6,351 24 0	8,748 0 0	98 747 0 14	40 0 0	24 0 0 0	
Total	33 <b>,</b> 592	28,507	37,319	36,365	45,098	49,741	59,131

Table 15. Japanese imports of frozen threadfin bream surimi by country of origin and volume, 1995-2001 (metric tons).

Source: Japan Fish Traders Association 1996-2002

Table 16.	Japanese impo	rts of frozen	threadfin bream	surimi by
	country of or	igin and value	≥, 1995-2001 <b>(</b> U.	S. \$1,000).

Country of origin	1995	1996	1997	1998	1999	2000	2001
Thailand	62,507	46,266	56,966	48,556	72,589	71,670	60,455
India	1,306	469	5,232	4,731	9,739	12,667	21,062
Indonesia	0	202	2,028	862	939	1,504	3,632
Viet Nam	209	8	383	397	141	70	346
Myanmar	85	8	216	252	197	519	289
U.S.A.	0	0	0	0	40	0	121
Singapore	0	0	0	11	48	0	84
China	526	352	85	7	105	40	25
Malaysia	328	89	152	136	82	36	7
Hong Kong	19,886	17,027	21,693	1,509	0	0	0
Korea, Rep.	0	57	0	0	0	0	0
Taiwan	0	0	0	13	0	0	0
Total	84,848	64,478	86,755	56,473	83,880	86 <b>,</b> 506	86,020

Total may not add due to rounding

Country of origin	1995	1996	1997	1998	1999	2000	2001
Thailand	3,528	3,448	4,273	4,435	4,938	4,409	4,543
China	1,251	902	1,976	1,511	1,765	1,507	1,509
India	49	630	1,167	915	1 <b>,</b> 127	1,089	613
Myanmar	108	62	141	150	263	390	406
Mexico	154	206	153	75	179	195	125
Venezuela	108	216	528	125	20	284	76
Indonesia	0	40	89	40		0	72
Taiwan	17	15	18	25	16	18	17
Viet Nam	103	10	17	20	10	10	± ′
			1	5	0	0	5
Korea, Rep.	0	2	1	0	0	0	0
Hong Kong	65	901	2,047	328	0	0	0
Malaysia	21	0	0	0	10	60	0
Panama	0	0	0	0	2	0	0
Total	5,404	6,431	10,408	7,608	8,326	7,951	7,365
	-,		,	.,	.,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.,

Table 17. Japanese imports of frozen croaker surimi by country of origin and volume, 1995-2001 (metric tons).

Source: Japan Fish Traders Association 1996-2002

# Table 18. Japanese imports of frozen croaker surimi by countries of origin and value, 1995-2001 (U.S. \$1,000).

Country of	<u> </u>						
Country of	1005	1000	1007	1000	1000	0000	0001
origin	1995	1996	1997	1998	1999	2000	2001
Thailand	11,316	9,589	12 <b>,</b> 938	9,113	11,986	13,039	11,012
China	. 3,808	2 <b>,</b> 789	4 <b>,</b> 967	4,102	4,440	4,123	4,125
India	89	1,386	2,693	1,450	2,321	2,095	1,199
Myanmar	328	158	373	278	469	782	765
Mexico	730	935	654	331	799	855	559
Venezuela	304	624	1,486	359	28	927	234
Indonesia	0	90	232	47	6	0	100
Taiwan	57	46	55	63	41	44	42
Viet Nam	180	46	52	10	1 F 0	0	7
	001		52	0	0	0	1
Korea, Rep.	-			5	0	0	0
Hong Kong	212	4,109	8,050		0	0	0
Malaysia	50	0	0	0	44	149	0
Panama	0	0	0	00	5	0	0
Total	17,054	19 <b>,</b> 776	31,503	15 <b>,</b> 759	20,140	22,013	18,042
				-	-	-	÷

Total may not add due to rounding

Table 19. Japanese imports of frozen other surimi by major countries of origin and volume, 1995-2001 (metric tons).

Country of origin	1995	1996	1997	1998_	1999	2000	2001
Thailand Argentina Chile China Panama Denmark Korea, Rep. Viet Nam Peru U.S.A. India Norway Indonesia New Zealand U.K. Venezuela Philippine Iceland Myanmar Taiwan Hong Kong Malaysia Others	32,644 21,502 4,527 8,440 0 29 8,175 795 698 2,169 20 525 200 341 665 976 350 219	$\begin{array}{c} 28,433\\ 19,905\\ 7,937\\ 10,525\\ 0\\ 114\\ 6,782\\ 1,266\\ 618\\ 1,632\\ 144\\ 207\\ 528\\ 109\\ 0\\ 635\\ 81\\ 50\\ 554\\ 6,913\\ 91\\ 549\end{array}$	35,190 23,201 8,469 13,007 0 70 6,077 1,695 1,122 2,935 811 139 2,243 86 16 474 61 24 2,123 4,625 55 580	32,329 21,107 9,736 8,994 2 35 5,517 1,301 981 1,152 91 392 782 45 46 388 107 17 359 271 24 470	$\begin{array}{c} 34,358\\22,356\\8,200\\10,014\\350\\156\\4,048\\1,467\\1,705\\1,585\\474\\910\\225\\637\\280\\236\\201\\50\\29\\183\\21\\0\\824\end{array}$	$\begin{array}{c} 34,587\\ 22,407\\ 6,613\\ 10,424\\ 1,992\\ 595\\ 2,702\\ 1,716\\ 1,518\\ 1,063\\ 653\\ 1,021\\ 343\\ 23\\ 229\\ 56\\ 174\\ 558\\ 32\\ 144\\ 0\\ 18\\ 606\end{array}$	40,798 16,654 9,887 9,706 3,286 2,809 2,171 1,976 1,931 1,528 1,019 855 535 328 214 168 82 65 42 41 2 0 472
Total	82,679	87,073	103,007	84,149	88,309	87,474	94,569

Table 20. Japanese imports of frozen other surimi by major countries of origin and value, 1995-2001 (U.S. \$1,000).

Country of origin	1995	1996	1997	1998	1999	2000	2001
OIIGII		1990				2000	2001
Thailand	92,467	78,901	94,021	60,615	74,021	75,164	77,670
China	36,147	46,453	60,134	36,469	40,972	48,522	48,203
Argentina	59,908	40,099	56,456	36,468	50,013	44,172	28,982
Chile	11,778	19,156	23,637	20,682	20,544	16,015	22,957
Korea, Rep.	57,073	47,902	42,637	27,863	23,995	19,592	15,779
Viet Nam	2,612	4,044	5,650	4,985	4,554		5,937
Peru	1,889	1,784	3,378	2,957	4,681	3,722	5,072
Denmark	. 98	306	172	72	786	1,144	4,271
Norway	937	1,067	558	2,382	4,118	4,467	4,154
U.S.A.	5,194	2,948	5,475	1,652	3,530	2,124	2,497
India	2	237	1,345	112	585	738	1,092
Indonesia	535	1,227	5,245	1,324	419	543	1,031
Panama	0	0	0	4	109	584	985
New Zealand	165	242	246	145	1,554	91	707
Philippine	5,472	6,679	3,294	1,883	1,157	1,278	540
U.K.	37	0	23	170	766	622	489
Iceland	1,418	1,006	808	1,026	770	1,194	478
Venezuela	0	0	5	4	338	81	250
Myanmar	1,000	116	70	40	300	343	191
Taiwan	1,717	1,413	3,674	945	890	430	70
Hong Kong	4,517	34,054	21,106	161	24	0	7
Malaysia	726	138	98	35	0	81	0
Others	2,064	5,008	3,159	3,014	5,249	6,210	3,101
Total	285,756	292,780	331,191	203,008	239,375	231,950	224,463

Table 21. Allocation of Japanese import quotas for Alaska pollock and Alaska pollock surimi by recipient groups for Japan's fiscal years\* 1986-1988 and 1998-2002 (metric tons).

Fiscal	Total	Traders	Users	Fishermen	Overseas	First-come-
year						First-served

Alaska pollock (round weight) and Alaska pollock surimi\*\*

1986 1987 1988 1998 1999	95,500 147,000 631,000 1,027,000 1,027,000	-*** - 91,500 91,500	- - 55,500 55,500	- - 180,000 180,000	- - 700,000 700,000	- - 0 0
2000 2001 2002	1,027,000 1,027,000 1,027,000	100,940 100,940 100,940	63,060 63,060 63,060	160,000 160,000 160,000	700,000 700,000 700,000 700,000	3,000 3,000 3,000

\*.... Japan's fiscal year extends from April 1 through March 31 of the following year.

\*\*.. If imported as surimi, fish weight shall be calculated by multiplying surimi weight by 5.

-\*\*\*..not available

Source: U.S. embassy, Tokyo 1989, 1998-2002

#### EXPORTS

Japanese exports of frozen surimi from 1988 through 2001 are summarized in Table 22. In 2001, Japan exported 3,749 mt, amounting to \$9.85 million worth of frozen surimi, a decrease of 18 percent in volume and in value from the 2000 level.

Japan's export of frozen Alaska pollock surimi hovered near a meager 700 mt until about 1980 (Table 23). Exports began to rise sharply in 1981 and continued the trend through 1986. Total exports of surimi increased almost 10 times, from 709 mt in 1980 to 6,676 mt in 1986. The U.S. share of the exports was about 91 percent in 1986.

The sudden surge in the Japanese sale of frozen Alaska pollock surimi to the United States from 1981 to 1986 stemmed from the interest shown by the U.S. food industry in producing imitation crab meat in this country. Exports of Alaska pollock surimi to the United States began to decline in 1987.

In 2001, Japan exported only 309 mt of frozen Alaska pollock surimi, a decrease of 53 percent from the 660 mt exported during 2000. Taiwan was the major market taking 41 percent in volume of Japanese exports of frozen Alaska pollock surimi in 2001. Other important buyers in 2001 were the Republic of Korea (34 percent), China (15 percent) and New Zealand (11 percent). The United States has not purchased frozen Alaska pollock surimi since 2000.

Exports of frozen other surimi in 2001 also showed a decrease from 2000 (Table 24). Much of the decrease was due to lower exports to New Zealand. New Zealand was by far the largest market purchasing 74 percent in volume of Japanese exports of this product. Other important buyers for frozen other surimi in 2001 were the Republic of Korea (17 percent) and the United States (4 percent).

Year	Alaska	pollock	Other	surimi	To	otal
	Volume*	Value**	Volume*	Value**	Volume*	Value**
1988	724	207	163	60	887	267
1989	398	115	272	75	670	190
1990	707	246	77	48	784	294
1991	1,486	763	160	83	1,646	846
1992	1,155	465	424	133	1,579	598
1993	70	22	126	35	196	57
1994	163	44	1,161	314	1,324	358
1995	39	14	5,028	992	5,067	1,006
1996	843	188	3,805	776	4,648	964
1997	2,627	1,449	2,788	1,218	5,415	2,667
1998	1,085	436	639	202	1,724	638
1999	596	125	292	317	888	442
2000	660	108	3,892	1,346	4,552	1,454
2001	309	46	3,440	1,145	3,749	1,191

Table 22. Japan's annual exports of frozen surimi by volume and value, 1988-2001.

volume\* in metric tons value\*\*in million yen

Sources: Ministry of Finance 1989-2002

Year	Total	U.S.A.	Taiwan	China	Korea, Rep. of	Hong Kong	New Zealand	Australia
1974	603	599		_	-	_	-	-
.975	695	686	-		-	_	-	-
.976	489	488	-	-		-	-	-
977	793	771	-	-	-	-		-
978	661	655	-	-		-	-	-
979	693	681	-	-	-	-	-	-
980	709	703	-	-	-	-	-	-
981	928	829	-	-	-	-	_	-
982	1,276	1,114	-	-			-	-
983	1,963	1,708	-	-	-	-	-	-
984	2,580	2,306	-	_		-	-	-
985	5,158	4,801	-		-	-		-
986	6,676	6,056	-	-	-	-	-	-
987	1,233	-	-	-	-	-	-	-
988	724	13	65	115	230	0**	0	1
989	398	12	90	173	20	16	0	33
990	707	3	77	22	514	17	0	1
991	1,486	6	79	63	1,186	1	0	2
992	1,155	60	16	0	692	1	0	31
993	70	2 3 1	0	0	0	1	0	64
994	163	3	0	23	0	0	0	90
995	39		0	1	36	1	0	1
996	843	1	100	19	395	111	214	0
997	2,627	1 2 1	110	14	0	2,329	145	0
998	1,085		217	7	0	678	163	0
999	596	1	144	20	347	1	80	1
000	660	O	253	117	290	0	0	0
001	309	0	126	45	105	0	33	0

#### Table 23. Japan's exports of frozen Alaska pollock surimi by major countries of destination and volume, 1974-2001 (metric tons)

Total may include other countries not listed

Sources: Japan Frozen Foods Inspection Corporation 1975-1988 Ministry of Finance 1988-2002 Sonu 1975-1991

Year	Total	U.S.A.	Taiwan	China	Korea, Rep. of	Hong Kong	New Zealand	Australia
1988	163	47	1	1	1	5	100	0*
1989	272	34	ō	10	1	1	205	0
1990	77	15	18	11	3	1	0	0
1991	160	38	0	1	61	1	0	1
1992	424	43	24	0	334	1	21	1
1993	126	11	28	0	83	3	0	0
1994	1,161	43	1	1	65	191	834	0
1995	5,028	15	18	15	1,533	2,427	1,012	0
1996	3,805	8	3	7	672	3,100	0	1
1997	2,788	61	113	124	1,109	1,365	0	0
1998	639	42	45	99	400	47	0	1
1999	292	109	26	50	25	32	1	0
2000	3,892	119	180	537	49	16	2,945	18
2001	3,440	154	11	111	599	1	2,542	1

#### Table 24. Japan's exports of frozen other surimi by major countries of destination and volume, 1988-2001 (metric tons)

0\* ...no exports Total may include other countries not listed

Sources: Ministry of Finance 1989-2002

#### COLD STORAGE HOLDINGS

Table 25 shows Japan's monthly inventories of frozen Alaska pollock surimi, frozen surimi (excluding Alaska pollock surimi), and total frozen surimi between 1987 and 2002. Monthly average inventories of Alaska pollock surimi, frozen surimi, and total frozen surimi for May, June, and July 2002 were lower than the level in the same period a year earlier due mainly to decreased supply from imports.

From the January 1999 to July 2002, Japanese inventories of frozen surimi had been lower than the level in the preceding year.

Japanese monthly cold storage holdings of frozen Alaska pollock surimi, frozen surimi (excluding frozen Alaska pollock surimi), and total frozen surimi, 1987-2002 (metric tons). Table 25.

		255 220 2530 2530 2530 2530 2530 2520 252	800 400 400 400 400 400 400 400
Dec	1	1110 9910 9117 9117 9117 9117 9117 9117	03,70,90,1,92,298, 03,70,90,4,93,4,92,298, 03,70,90,4,93,4,95,298,5 03,70,6,4,4,9,7,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5
Nov.		114, 192 94, 580 91, 088 93, 059 91, 088 120, 2849 120, 2849 82, 849 82, 849 82, 849 82, 039 54, 938 52, 039 59, 010	18,862 27,366 32,681 366 39,450 44,505 44,505 44,505 44,505 44,505 337,021 34,7021 34,7021 34,7021
Oct.		118, 281 99, 005 85, 149 85, 149 89, 970 80, 694 95, 355 51, 375 51, 375 55, 571 56, 571 58, 150	20,215 29,061 32,669 46,703 46,703 56,916 56,916 418 47,244 32,003 22,003
Sent	2	128,781 104,170 79,172 87,961 82,914 82,563 42,697 42,697 42,697 45,035 45,035 54,903 54,903	21,431 26,465 33,711 35,475 35,475 35,475 45,881 45,881 45,629 481,471 426 421,471 28,156 421,421 28,1731 28,114 28,257
And	5	140,781 110,544 82,884 99,073 99,073 11,7,593 86,056 65,629 41,751 45,185 49,767 49,767	22,22,203 23,704 23,704 44,955 44,953 44,657 44,279 444 657 337,475 337,475 337,475 337,475 337,475 337,475 337,475 337,472
vľuľ.	+)	152,711 90,018 99,686 99,686 93,955 93,955 93,955 713,381 73,381 73,955 73,955 73,955 73,955 73,955 73,713 73,955 73,713 73,955 73,713 73,955 713 73,955 713 73,955 713 73,955 713 73,955 713 73,955 713 73,955 713 73,955 713 73,955 713 73,955 713 73,955 713 727 73,955 713 727 727 727 727 727 727 727 727 727 72	21, 859 21, 859 201, 450 201, 450 200, 730 200, 745 200, 748 200,
entit		167, 716 135, 355 101, 494 72, 574 106, 474 72, 574 112, 455 101, 768 81, 893 82, 496 62, 494 62, 494 55, 659 55, 659 55, 059 55, 385 55, 385	23, 546 222, 091 229, 965 249, 982 26, 010 45, 155 45, 155 45, 155 44, 856 42, 187 31, 888 31, 888 31, 888
N e M	5	166,783 138,682 109,638 76,518 119,650 87,666 96,6173 69,673 69,673 59,131 55,014 59,131 55,014 59,783 50,783 50,7	23,691 223,691 222,135 222,135 222,135 222,135 232,032 232,048 427,1463 427,163 427,163 427,163 427,163 231,654 231,654 292,155 292,155 292,155 292,155 292,155 292,135 292,135 292,135 292,135 292,135 292,135 292,135 292,135 293,135 293,135 293,135 293,135 293,135 293,135 293,135 293,135 293,135 293,135 293,135 293,135 293,135 203,25 20,
Anril	4	162,640 1362,640 115,753 101,692 80,601 117,653 94,371 94,371 94,371 94,633 74,126 74,126 60,039 57,125 58,131 60,039 57,125 58,131 64,954 <b>Laska pc</b>	18,280 21,205 31,155 25,037 25,037 45,544 45,544 45,285 42,307 44,751 44,167 33,336 44,167 33,336 44,167 33,336 44,167 393 37,667 393 37,667 393 37,18
March	<b>Sur</b>	394 154, 720   440 147, 256   919 125, 917   919 110, 202   919 110, 202   150 108, 585   150 108, 585   331 117, 508   332 73, 0122   732 73, 0122   732 73, 0122   732 743   810 59, 743   810 59, 743   731 54, 1133   940 54, 1133   931 54, 1133   940 54, 1133   940 54, 1133   941 54, 1133   940 54, 1133   940 54, 1133   941 54, 1133   941 54, 1133   941 54, 1133	18,647 22,376 32,349 25,251 45,659 45,659 42,227 48,419 45,227 42,751 31,881 26,327 42,751 31,881 26,327 31,881
ے۔ م لیا	a poll	8022001320000	15,237 20,500 29,569 26,268 20,985 40,982 35,311 41,912 41,912 24,450 24,450
	en A	<b>c n surimi n surimi n surimi n surimi n surimi surimsuri surimsurimsurimsurimsurimsurimsuri surimsurim</b>	14,687 18,324 29,509 27,907 26,509 39,502 36,596 36,966 36,406 451 451 451 451 45,990 27,724
2 2 2 2		L 1987 1988 1999 199	20000 2000000

(continued). Japanese monthly cold storage holdings of frozen Alaska pollock surimi, frozen surimi (excluding frozen Alaska pollock surimi), and total frozen surimi, 1987-2002 (metric tons). Table 25

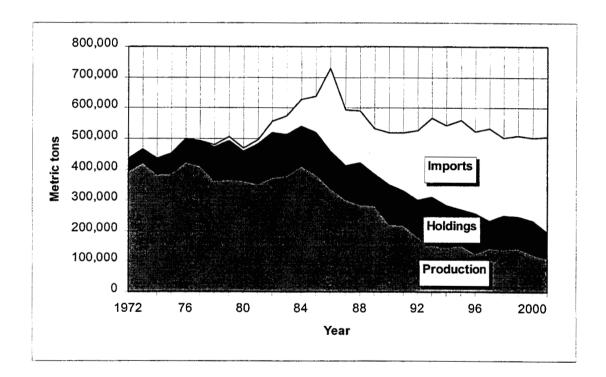
Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total	. frozen	n surimi										
	134,658	155,631	173.367	180.920	190.474	191.262	174.570	162.984	150 212	138 496	133 054	135 010
1988	142,544	162,940	169,632	157,530	160,817	157,446	140,391	134,248	130,635	128,066	121,946	129,289
	146,687	159,471	158,266	146,908	141,710	131,459	120,748	113,915	112,883	117,818	123,769	125,841
	132,321	137,187	135,403	125,553	127,254	131,456	125,622	125,964	125,711	129,891	121,088	109,832
	103,166	98,943	110,365	105,638	100,436	98,584	96,173	106,668	118,813	120,660	117,436	116,274
	120,031	133,132	154,229	165,179	162,798	154,054	150,212	159,516	168,259	170,788	165,449	155,369
	153,673	147,168	162,735	162,938	157,023	151,113	141,270	132,832	135,484	154,139	145,742	133, 688
	123,290	123,805	144,224	136,122	130,452	127,048	119,159	109,908	114,192	129,137	122,985	114,010
	113,057	111,500	134,349	138,945	138,061	136, 382	129,211	123,725	127,740	147,379	136,800	126,870
	119,523	112,640	116,651	117,462	113,348	107,681	96,946	87,099	83,859	97,793	98,943	89,025
	79,787	76,084	85,938	85,508	83,914	83,779	87,081	85,942	87,678	114,245	111,283	106,299
	99,356	98,671	108,162	107,499	106,520	97,386	93,273	87,761	89,187	103,644	107,909	99,615
666	99,525	91,740	99,704	102,386	100,657	98,851	94,344	86,230	83,879	101,099	109, 632	109,164
	98,411	87,503	93,705	98,897	100,188	95,901	90,429	82,921	87,680	95,067	91,965	86,828
	82,691	76,424	86,064	89,024	93,074	90,239	85,442	79,854	83,160	90,153	93,780	83, 595
	74,702	72,481	81,101	93, 672		83,097	73,542					

Ministry of Agriculture, Forestry, & Fisheries 1989-2002 Hokkai Keizai Shinbun Sha 2002 Suisan Tsushin Sha 2002 Sources:

#### SUPPLY

The annual supply of frozen surimi for the Japanese market and for export is comprised of the cold storage inventory on January 1, plus domestic production and imports. The annual supply reached a record high in 1986 due to sharply increased imports (Figure 4). Total annual supply decreased steadily from 1987 to 1991 because imports did not make up for decreased domestic production. In 2001, however, sharply increased imports of frozen surimi helped avert a large deficit in supply, as the production was at a 34-year low (Tables 1 and 9).

Between 1992 and 2001, annual frozen surimi supplies ranged between 502,000 and 567,000 mt, averaging 527,699 mt. During this period Japanese production averaged 143,921 mt per year, about 27 percent of the total supply. The January inventory averaged 113,714 mt (22 percent), and imports 270,699 mt (51 percent). The percentage of the market supplied by imports increased from 43 percent in 1992 to 61 percent in 2001.



## Figure 4. Japanese annual supply of frozen surimi , 1972-2001 (metric tons).

Sources: Japan Surimi Association 1984 Hokkai Keizai Sha 2002 Ministry of Agriculture, Forestry, & Fisheries 1974-2002; Suisan Tsushin Sha 2002; Minato Shinbun Sha 2002; Japan Fish Traders Association 1996-2002 Sonu 1986

## DEMAND

Japanese demand of frozen surimi (supply minus exports and the cold storage inventory on December 31) was 418,977 mt in 2001, an increase of 2 percent compared with 2000 (Table 26). Between 1990 and 2001, annual demand of frozen surimi averaged 413,088 mt per year.

Year	Supply	Exports	Inventory	Demand
1972 1973 1974 1975 1976 1977 1978 1979	436,042 466,082 435,405 452,683 499,233 493,932 480,642 505,928	-* 603 692 489 793 661 693	43,000 51,105 65,000 75,000 80,483 106,080 124,735 95,598	393,042 414,977 369,802 376,991 418,261 387,059 355,246 409,637
1980	469,190	709	127,384	341,097
1981	494,827	928	146,882	347,017
1982	556,116	1,276	134,834	420,006
1983	573,549	1,963	125,860	445,726
1984	629,265	2,580	133,481	493,204
1985	638,388	5,158	117,855	515,375
1986	730,731	6,676	108,708	615,347
1987	593,249	1,233	135,942	456,074
1988	590,087	887	129,289	459,911
1989	562,632	670	125,841	436,121
1990	521,484	784	109,832	410,868
1991	521,021	1,646	116,274	403,101
1992	526,515	1,579	155,369	369,567
1993	567,375	196	133,688	433,491
1994	544,090	1,324	114,010	428,756
1995	558,891	5,067	126,870	426,954
1996	521,945	4,648	89,025	428,272
1997	534,678	5,415	106,299	422,964
1998	502,158	1,724	99,615	400,819
1999	511,145	888	109,164	401,093
2000	503,574	4,552	86,828	412,194
2001	506,621	3,749	83,895	418,977

# Table 26. Japanese demand for frozen surimi, 1972-2001 (metric tons)

-\*....not available

Sources: Japan Surimi Association 1984 Hokkai Keizai Sha 2002 Ministry of Agriculture, Forestry, & Fisheries 1974-2002 Suisan Tsushin Sha 2002; Minato Shinbun Sha 2002 Sonu 1986 Japan Fish Traders Association 1996-2002 Japan Frozen Foods Inspection Corporation 1975-1988 Ministry of Finance 1988-2002 Sonu 1975-1991

### MARKETS

Surimi is usually sold with a set price at consumer wholesale markets located in consumption areas, and at production wholesale markets located at Japanese ports of landings. Surimi is also sold directly to processors and representatives of supermarket chains. There are about 270 consumer and 340 production wholesale markets for fish and fishery products in Japan (Suisan sha 1993 and 1995). The largest consumer wholesale fish market is the Tokyo Central Wholesale Market. In 2001, this market handled about 718,000 mt of fish and fishery products valued at about \$5.1 billion (Tokyo Metropolitan Government 2002). It therefore plays an important role in providing indicators about supply and demand of fishery products in Japan. Wholesale prices at the Tokyo Central Wholesale Market generally serve as price indices for fishery products throughout the world.

Wholesale prices for surimi vary widely, depending on quality, origin, species, supply and demand, and other factors.

Tables 27-31 show monthly average wholesale prices of frozen surimi in Japan between 1987 and January-June 2002. Figures 5-9 compare monthly cold storage holdings and wholesale prices of surimi in Japan from 1987 through January-June 2002. Monthly average wholesale prices for frozen surimi fluctuated considerably during that period. The fluctuations were influenced mainly by the quantities in cold storage holdings; usually, the lower the cold storage holdings, the higher the prices and vice versa.

Wholesale prices for frozen surimi generally fall during summer. In 2002, however, summer prices did not decline, due to reduced imports and low levels of inventory of frozen surimi. Average wholesale prices of frozen surimi in June 2002 were up 8-19 percent from prices for December 2001 and 4-15 percent higher than prices for the same period in 2001. Japanese imports of Alaska pollock surimi decreased from 10,663 mt in June 2001 to 1,371 mt in June 2002 (Suisan Keizai Shimbun Sha 2002).

Figure 10 shows annual average wholesale prices of frozen surimi including all species and grades at 10 central wholesale markets in major cities in Japan between 1983 and January-June 2002, in comparison with annual average wholesale prices of Alaska pollock at 59 markets in major landing ports for the same period. The price trends of wholesale prices of frozen surimi at 10 major markets and wholesale prices of Alaska pollock at 59 markets in landing ports showed similar patterns. Informed sources cite price of Alaska pollock as an additional important factor affecting the price of surimi.

	<b>  -  </b> 	processed,	grade	2, 1987-2	-2002	002 (yen/kg).						
Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
98	230	$\sim$	$\sim$	4	ς	$^{\circ}$	З	220	$\sim$	1		0
98	210	$\mathcal{C}$	$\mathcal{C}$	$\sim$	Ē		Ч	205	0	σ		ω
1989	195	190	195	195	200	205	205	205	200	200	200	210
66	260	9	Q	9	9	9	5	270	5			$\sim$
99	320	ω	$\circ$		1	0	$\sim$	520	$\sim$	$\sim$		0
99	490	ω	ω	ഹ	0	$^{\circ}$	ω	270	9	S		$^{\circ}$
99	250	ω	ω	ω	ω	ω	$\sim$	270	9	ഹ		$\mathcal{C}$
99	230	$\mathcal{C}$	4	9	9	ω	9	260	9	ω		σ
66	290	σ	σ	σ	σ	δ	6	280	ω	5		ഹ
99	250	S	ഹ	ഹ	ഹ	9	വ	240	S	പ		9
66	270	ω	0	$\sim$	З	4	4	340	4	$\sim$		σ
99	280		9	ഹ	S	ഹ	ഹ	250	S	S		4
99	240	4	4	4	4	4	4	240	4	0		ω
00	200	Ч	$\sim$	$\mathcal{C}$	4	$^{\circ}$	$\mathfrak{S}$	230	$\sim$	Ч		$\mathfrak{S}$
00	220	$\sim$	$\sim$	m	З	4	4	240	4	4		ഹ
00	250	S	ഹ		ß	9						

a pollock surimi for on-shore	
ozen Alask	
e wholesale prices of frozen	de 2, 1987-2002 (yen/kg)
Table 27. Monthly average	processed, gra

Minato Shinbun Sha 1987-2002 Sources:

Monthly average wholesale prices of frozen Alaska pollock surimi for off-shore processed, SA grade, 1987-2002 (yen/kg). Table 28.

							ļ	1				
Year	Jan.	Feb.	March	April	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
98		8	8	8	480	8	480	ω	480	ω	8	œ
1988	480	480	480	480	480	480	480	480	480	480	480	480
98		ω	ω	ω	477	5	470	5	470	$\sim$	5	9
66		$\sim$	വ	$\sim$	410	7	410	0	385	ω	σ	-
99		$\[ \] \]$	9	$\sim$	620	$\sim$	670	σ	750	0	0	З
66		ω	5	$\sim$	670	ഹ	620	-	580	4	4	$\sim$
99		5	ഹ	S	450	$\sim$	390	ω	370	$\sim$	9	ഹ
66		4	വ	$\[ \]$	370	~	370	$\sim$	370	ω	ω	ω
66		ω	ω	0	400	0	400	ω	370	ഹ	ഹ	S
99		S	ഹ	7	370	7	370	~	370	$\sim$	$\sim$	$\sim$
99		$\sim$	$\sim$	S	450	Q	460	Q	460	4	4	$\sim$
99		$\sim$	$\sim$	$\sim$	420	$\sim$	420	$\sim$	420	9	9	9
66		ഹ		7	470	Q	450	S	450	$\sim$	Ч	0
00		σ	ω	7	370	5	370	5	360	9	4	4
00		$^{\circ}$	$\mathfrak{S}$	4	340	ഹ	360	Q	360	9	9	9
00		7	ω	0	400	0						

Sources: Minato Shinbun Sha 1987-2002

hore	Dec.
off-s]	Oct. Nov. I
for	
surimi	. Oct
llock	Sept.
a po	Aug.
Alask	
rozen g).	June July
s of f (yen/k	June
e prices 7-2002	May
wholesale prices of frozen Alaska pollock surimi for off-shore ade, 1987-2002 (yen/kg).	April
verage wh , FA grac	March
Monthly average processed, FA gr	Feb.
	Jan.
Table 29	Year

Year	Jan.	Feb.	March	April	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1991	390	430	520	590	600	600	650	660	720	760	760	780
1992	780	750	730	700	650	610	580	560	550	510	500	500
1993	450	400	400	400	400	390	370	350	320	320	320	320
1994	300	300	310	320	330	330	340	340	340	350	350	350
1995	350	350	350	370	370	370	370	360	350	330	320	330
1996	310	310	300	320	320	320	320	320	340	370	370	370
1997	370	390	390	430	430	440	440	440	440	420	420	400
1998	400	400	370		360	360	360	360	360	420	420	420
1999	420	420	450	450	440	400	400	400	400	380	360	360
2000	360	350	340	340	330	330	330	330	320	320	300	300
2001	290	280	280	300	310	320	320	320	320	320	320	330
2002	330	340	350	360	370	380						

Source: Minato Shinbun Sha 1992-2002

		markets	in major	cities	in Japan,		1987-2002	(Yen/kg)				
Year	Jan.	Feb.	March	April	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	(	C	E		(	L	•	Ł		•	L
98	γ	$\gamma$	ъ	<u> </u>	9	٥	Ω	4	Ω	$\sim$	4	S
99	4	4	S	4	ഹ	Э	$\sim$	$^{\circ}$	Ţ	$\mathfrak{c}$	$\mathcal{C}$	4
99	4	ω	4	ω	Ξ	$\sim$	4	9	0	0	Ч	σ
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99	$\sim$	H	0	0		$\sim$	0	-		$\dashv$	$\mathcal{C}$	S
1995	337	351	344	340	353	346	353	338	363	347	342	327
99	$\mathcal{C}$	Ξ	Ч	$^{\circ}$	0	4	$^{\circ}$	ω	0	0	ε	$\sim$
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00	$\sim$	<del>~~1</del>	σ	0	0	σ	0	$\sim$	ω	7	ω	σ
0	7	ω	ω		-		5	9	9	σ	σ	σ
00	0	σ	0									

rerage wholesale prices of frozen surimi* at 10 central wholesale	
central	
10	
at	
surimi*	(yen/kg) .
frozen	1987-2002
of	ч ,
prices	Japan
wholesale	ajor cities in Japan,
average	in major
Monthly	markets
Table 30.	

\*....includes all grades, all species of surimi

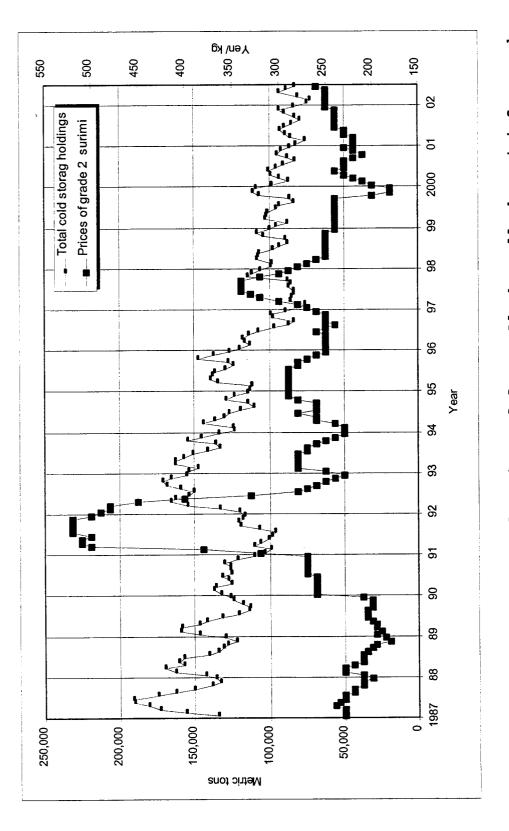
Ministry of Agriculture, Forestry and Fisheries 1991-2002 Suisan Tsushin Sha, 2001, 2002 Suishan Keizai Shinbun Sha 2001, 2002 Sources:

o Central Wholesale	
at Tokyo	
Surimi*	
f frozen	
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	1988-2001
Monthly	Market,
Table 31.	

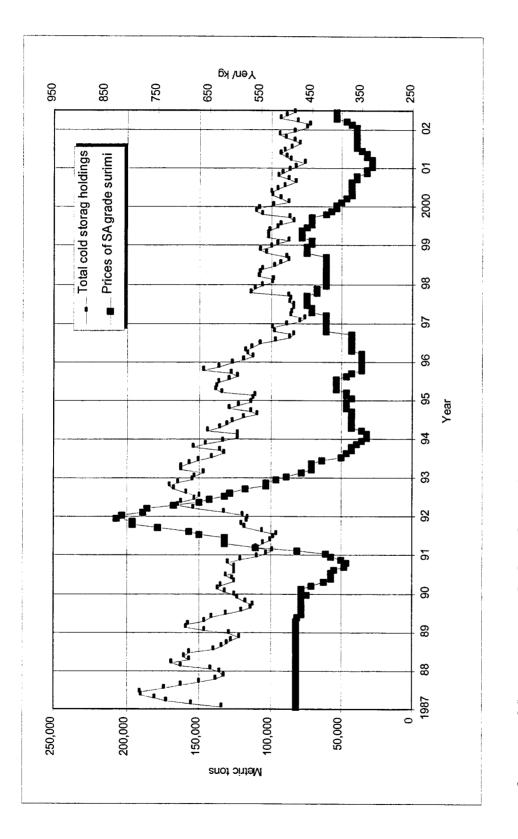
	77.7				. / 54							
Year	Jan.	Feb.	March	April	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
(	(	1	1	l		(	1	1				
98	$\sim$	2	2	-	5	Q		S	9	$\sim$	-	4
98	$\mathcal{C}$	$\mathcal{C}$	S	σ	7	Ы	$\sim$	$\mathcal{C}$	പ	ഹ	5	9
1990	407	364	360	401	379	378	321	354	348	364	366	358
99	~	0	ω	$\sim$	$\sim$	$\sim$	$\sim$	4	σ	4	ഹ	9
99	ω	$\sim$	4	З	Ч	0	0	4	$\sim$	ഹ	S	-
99	ω	$\mathbf{c}$	S	4	9	0	$\mathfrak{C}$	4	4	$\sim$	$\mathcal{C}$	Э
99	$\sim$	$\mathcal{C}$	S	4	$\sim$	ഹ	0	Ч	Ч	4	4	ω
99	4	S	ω	9	S	$\sim$	4	$\sim$	2	σ	$\sim$	ഹ
99	σ	0	9	$\sim$	9	4	σ	σ	8	σ	ഹ	$\sim$
66	9	5	8	ω	σ		9	5	σ	$\mathfrak{C}$	Ч	σ
99	Ξ	Ъ	4	$\mathfrak{S}$	$\sim$	$^{\circ}$	$\sim$	5	9	$\sim$	4	4
99	σ	$\mathcal{C}$	4	$\mathcal{C}$	9	9	9		σ	4	ω	$\mathfrak{S}$
00	9	9	ഹ		$\sim$	0	N		$\sim$	0	4	ω
00	$\mathfrak{C}$	0	σ	2	ω	S	5	9	0	ω	S	8

\*....includes all grades, all species of surimi

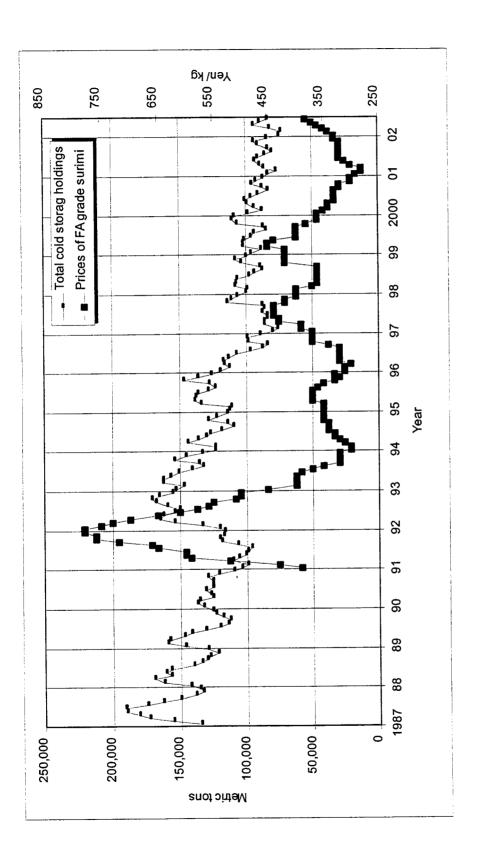
Source: Tokyo Metropolitan Government 1989-2002



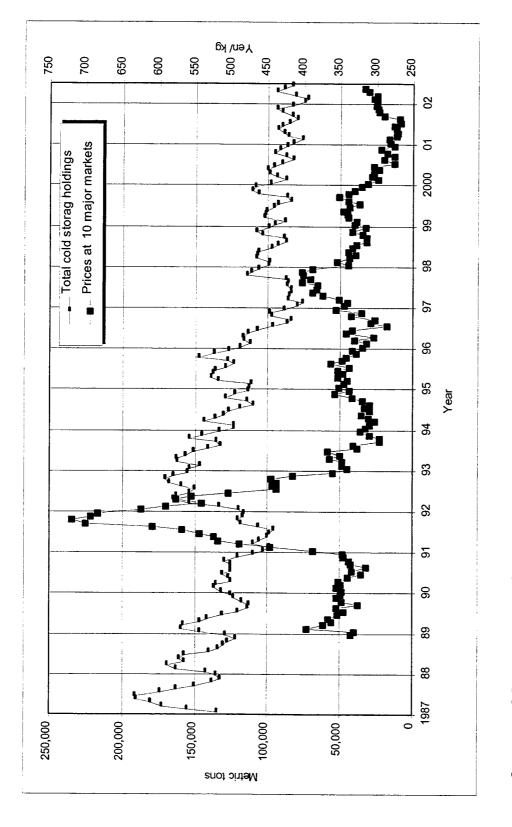
- Monthly average wholesale prices of frozen Alaska pollock surimi for on-shore processed, grade 2 and monthly cold storage holdings of total frozen surimi in Japan, 1987-2002 Figure 5.
- Ministry of Agriculture, Forestry, & Fisheries 1989-2002 Hokkai Keizai Shinbun Sha 2002 Suisan Tsushin Sha 2002 Minato Shinbun Sha 1987-2002 Sources:



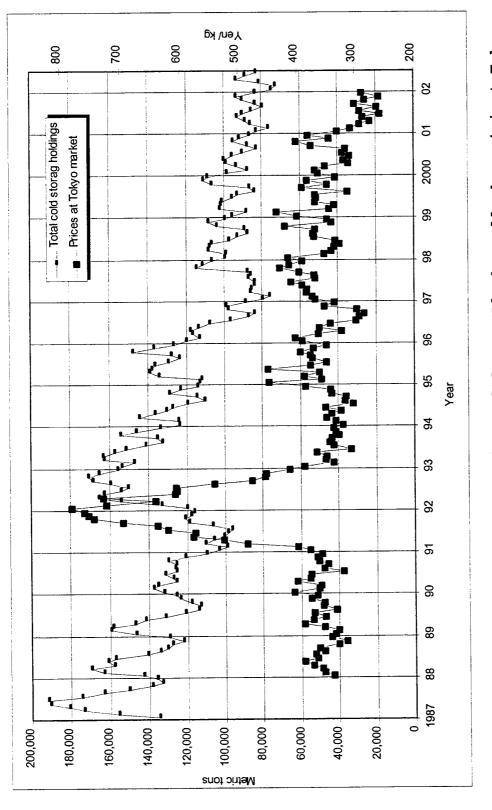
- processed, SA grade and monthly cold storage holdings of total frozen surimi in Japan, 1987-2002. Monthly average wholesale prices of frozen Alaska pollock surimi for off-shore Figure 6.
- Ministry of Agriculture, Forestry, & Fisheries 1989-2002 Hokkai Keizai Shinbun Sha 2002 Suisan Tsushin Sha 2002 Minato Shinbun Sha 1987-2002 Sources:



- processed, FA grade and monthly cold storage holdings of total frozen surimi in Monthly average wholesale prices of frozen Alaska pollock surimi for off-shore Japan, 1987-2002. Figure 7.
- & Fisheries 1989-2002 Ministry of Agriculture, Forestry, Hokkai Keizai Shinbun Sha 2002 Suisan Tsushin Sha 2002 Minato Shinbun Sha 1987-2002 Sources:



- markets in major cities in Japan and monthly cold storage holdings of total Monthly average wholesale prices of frozen surimi at 10 central wholesale frozen surimi, 1987-2002. . 8 Figure
- & Fisheries 1989-2002 2002 Forestry, Hokkai Keizai Shinbun Sha 2002 Suisan Tsushin Sha 2001, 2002 Suisan Keizai Shinbun Sha 2001, Ministry of Agriculture, Sources:



- Central Wholesale Market and monthly cold storage holdings of total frozen Monthly average wholesale prices of frozen Alaska pollock surimi at Tokyo surimi in Japan, 1987-2002. Figure 9.
- & Fisheries 1989-2002 Tokyo Metropolitan Government 1989-2002 Ministry of Agriculture, Forestry, Hokkai Řeizai Shinbun Sha 2002 Suisan Tsushin Sha 2002 Sources:

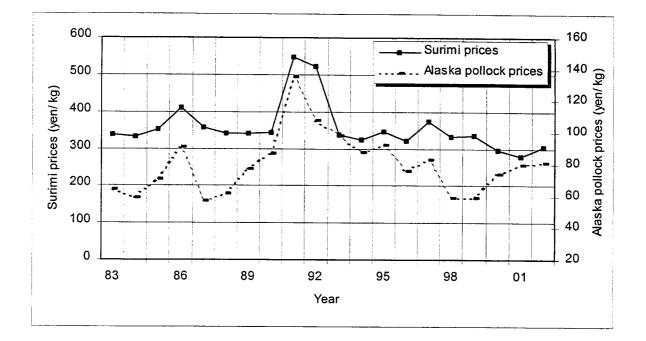


Figure 10. Annual average wholesale prices of surimi at 10 central wholesale markets in major cities and annual average wholesale prices of Alaska pollock at 59 markets in major landing ports in Japan, 1983-2002\*(yen/kg)

2002\*...January-June 2002

Sources: Ministry of Agriculture, Forestry and Fisheries 1985-2002 Suisan Tsushin Sha, 2001, 2002 Suishan Keizai Shinbun Sha 2001, 2002

## SURIMI-BASED PRODUCTS

For many centuries, the Japanese have practiced the art of manufacturing surimi-based products. Traditional methods consisted of processing the fish into raw surimi and then kneading it immediately into a finished product. Since both fish and raw surimi would denature quickly, the entire process had to be performed without much delay after the fish was landed (Okada 1981).

The advent of stable frozen surimi in 1960 revolutionized the traditional methods for making surimi-based products. With year-round availability of frozen surimi, manufacturers of surimi-based products were no longer dependent on unstable local fish catches and fresh surimi. The tremendous expansion of the surimi-base product industry was made possible by this important change.

The majority of surimi-based products, approximately 70 percent, is comprised of various types of fish cake called "kamaboko". About 30 percent of surimi-based products are represented by yaki-chikuwa (broiled surimi product), fish sausage, and fish ham (Table 32).

Kamaboko products are divided among three major categories: steamed kamaboko, fried kamaboko, and boiled kamaboko. Typical steamed kamaboko is called itatsuki (board-mounted) kamaboko, but the variety also includes imitation shellfish. Typical fried kamaboko (age-kamaboko) products are satuma-age and tempura. Typical boiled kamaboko is hampen, a spongy marshmallow-like product which contains entrapped air. Yaki-chikuwa is broiled surimi product which has the shape of a hollow bamboo stem.

In Table 32 the production of imitation crab meat has been listed under the category of "flavored" kamaboko only since 1987. Until that time, it was included in the category of "other kamaboko".

The main ingredient of surimi-based products is a homogeneous gel of ground fish muscle, obtained by kneading the thawed frozen surimi or raw surimi into a paste with salt. It also contains other ingredients such as sugar, starch, sweet sake, and monosodium glutamate.

Table 32 and figure 11 summarize annual production of surimi-based products by Japan since 1957. The production peaked at 1,185,100 mt in 1973, but decreased continuously, to 702,920 mt in 2001.

tons)
(metric
1957-2001,
Products,
Surimi-based
of
Production
ın' s
Japaı
e 32.
Table

Total	434,152 436,592 476,229 509,407	573,445 649,645 688,054 734,639 797,178	895,136 911,887 999,378 1,077,190 1,081,311	1,127,105 1,156,205 1,185,205 1,185,700 1,148,701 1,154,970	1,136,747 1,086,962 1,037,216 976,191 911,141
Fish ham/ Sausage	35,895 59,604 71,516 101,438	123,681 142,441 158,666 175,864 188,094	176,026 164,431 161,753 168,778 183,515	180,207 178,801 179,586 132,693 120,708	123,114 125,088 113,109 106,815 87,412
Yaki- chikuwa	- 108,980 107,650 96,841	98,230 104,748 112,564 119,455 121,774	157,636 171,745 194,035 204,290 221,484	238,539 244,615 249,172 250,946 258,882	235,278 214,393 190,911 177,192 174,377
Sub-total	- 268,008 297,063 311,128	351,534 402,456 416,824 439,320 487,310	561,474 575,711 643,590 704,122 676,312	708,359 732,789 756,342 765,062 775,380	778,355 747,481 733,196 692,184 649,352
Others	9,548 6,080 5,691	7,869 8,338 15,243 14,317 8,190	7,644 13,380 71,039 16,915 6,363	6,384 6,384 1,593 3,275 1,324	9,931 16,086 16,615 17,589 18,037
Flavored	1111	1111		1111	1 1 1 1 1
Boiled	1111	1 1 1 1 1	- - 61,021 53,041	56,387 63,766 75,595 76,913 84,519	83,897 84,304 93,110 76,558 73,184
<u>Kamaboko</u> Fried	- 122,092 141,221 153,266	155,700 179,712 196,437 205,129 234,004	283, 616 267, 549 289, 501 319, 191 313, 552	322, 161 326, 623 329, 692 324, 149 327, 068	316, 929 303, 224 289, 481 272, 175 269, 211
Steamed	- 136,368 149,762 152,171	187,965 214,406 205,144 219,874 245,116	270,214 294,782 259,599 283,917 277,483	291,927 305,984 317,423 275,264 271,683	285,588 266,216 258,951 252,035 230,578
In casings	*	1111	- 23,451 23,078 25,873	31,500 30,032 32,039 85,461 90,786	82,010 77,651 75,039 73,827 58,342
Year ]	1957 1958 1959 1960	1961 1962 1963 1964 1965	1966 1967 1968 1969 1970	1971 1972 1973 1974 1975	1976 1977 1978 1979 1979

|--|

ar	In casings	Steamed	Kamab Fried	boko Boiled	Flavored	Others	Sub-total	rakı- chikuwa	rısn nam/ Sausage	Total
	7,83	27,69	91,41	4,05	I	5,35	76, 33	80,67	1,86	48,88
	6,36	12,17	89,36	83,539	i	6, 55	77,99	87,73	5,15	60,87
	0.54	95,12	97,25	•	ł	150,220	3,1	194,931	98,098	996, 171
	7.63	88,10	98,06	I	1	55,74	99,54	96,22	4,68	90,44
85	57, 329	184,340	6	I	ı	8,97	91,62	99,86	,27	83,76
9	2.75	75.60	76,20	1	1	4,65	59,21	95,35	0,73	45,30
2	06.7	70.95	71.48	9.79	8,95	18,31	47,49	89,29	9,14	25,93
. @	8.64	72.76	77,61	6,30	0,68	9,75	45,77	90,45	4,30	20,53
5	63,226	169, 784	273, 563	55,152	58,011	26,037	645,773	184,713	85,345	915,831
90	84	65,17	79,60	4,14	5,27	5,38	47,42	81,69	5, 65	14,77
	7.64	55,61	70,45	9,99	9,32	7,60	20,64	74,73	8,33	73,70
2	50,979	158,173	265,960	47,541	55,493	26,719	604,865	169,607	70,884	845,356
63	8,03	46,27	64,95	7,48	7,42	6,19	90,36	72,57	6, 82	29,77
	4,26	42,21	65,34	5,91	9,36	6,15	83,26	73,44	6,05	22,77
	2,69	35, 63	58, 69	4,83	9,03	4,26	65,16	69, 55	6,19	00,91
	8,44	32,74	58,92	3,81	8,13	6,13	58,20	66,9	5,28	ò
	5.45	29.70	58,11	4,33	6,54	3,66	47,81	59,8	5,28	72,90
	5,41	25,6	S	2,44		ω	7,57		62,816	54,45
	3.64	19,77	35,83	8,21	0,98	6,11	94,56	59,8	2,30	16,71
00	7	119,950	12	-	S	0	93,	53,2	0,28	06,59
001	34,472	117,740	230,658	41,779	50,591	19,061	494,301	145,962	62,657	702,920

<sup>-\* ....</sup>not available Sources: National Surimi Association 1984 Ministry of Agriculture, Forestry and Fisheries 1959-2001 Suisan Tsushin Sha 2001, 2002

<sup>-47-</sup>

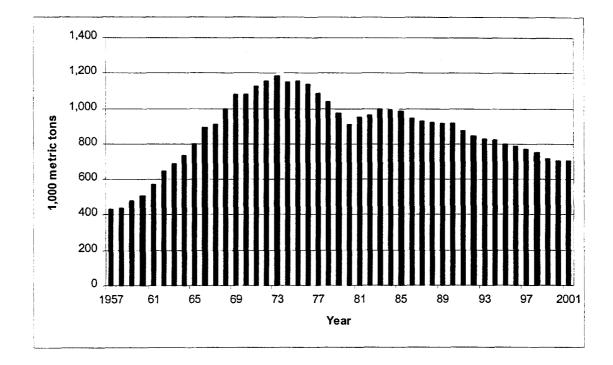


Figure 11. Japanese Production of Surimi-based Products (1,000 metric tons), 1957-2001.

Sources: National Surimi Association 1984 Ministry of Agriculture, Forestry and Fisheries 1959-2001 Suisan Tsushin Sha June 27, 2001

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Appendix 1. Japanese Surimi Importers with Import Quota

COMPANY: Anyo Fisheries Co., Ltd. (Tokyo) ADDRESS: 2-9-1 Shinbashi, Minato-ku, Tokyo 105-0004 PHONE: 81-3-3593-0669 81-3-3593-0685 FAX: COMPANY: Azabu Shokuhin K.K. ADDRESS: 2-2-1 Azabudai, Minato-ku, Tokyo 106-0041 COMPANY: Beniko K.K. ADDRESS: 2-14-8 Ginza, Chuo-ku, Tokyo 104-0061 COMPANY: C and C, K.K. ADDRESS: 3-11-12 Shinjuku, Shinjuku-ku, Tokyo Chosen Sangyo K.K. COMPANY: ADDRESS: 1-2-17 Higashi-shimbashi, Minato-ku, Tokyo COMPANY: Co-op Trade Japan Ltd. ADDRESS: 3-29-8 Shibuya, Shibuya-ku, Tokyo 150-8913 Mr. Katsuyoshi Zenbutsu, Manager, Fresh Food CONTACT: 81-3-5778-8060 PHONE: 81-3-5778-8160 FAX: katsuyoshi.zenbutsu@jccu.coop E MAIL: COMPANY: Daido Boeki Koshi, K.K. ADDRESS: 5-2-15 Miyuki-doei, Chuo-ku, Kobe, Hyogo COMPANY: Daiei Charman Tsukiji Akashicho 5-13 Akashicho, Chuo-ku, ADDRESS: Tokvo Daimaru Kogyo Ltd., Agricultural & Marine Products COMPANY: Dept. Daimaru Core Bldg., 2-18-11 Kiba, Koto-ku, Tokyo ADDRESS: 135-8510 CONTACT: Mr. Haruji Fujimori PHONE 81-3-3820-7123 FAX: 81-3-3820-7089 COMPANY: Dainichi Suisan K.K. ADDRESS: 2-1-2 Kajiyacho, Hyogo-ku, Kobe, Hyogo 652 81-78-681-3333 PHONE COMPANY: Dairoku, K.K. ADDRESS: 1-1-12 Minato, Chuo-ku, Tokyo

COMPANY: Daitoh Koun K.K. ADDRESS: 3-7-9 Shibaura, Minato-ku, Tokyo COMPANY: Direct, K.K. ADDRESS: 2-11-10 Tsukiji, Chuo-ku, Tokyo COMPANY: Eastern Products Co., Ltd. ADDRESS: 2-8-4 Kachidoki, Chuo-ku, Tokyo 104-0054 CONTACT: Mr. Kaoru Fukuda, Manager PHONE 81-3-3533-5911 81-3-3533-5918 FAX: EMAIL: epctobu@blue.ocn.ne.jp COMPANY: Endo Shoji, K.K. ADDRESS: 4-7-28 Yamada, Itami, Hyogo COMPANY: Esashi Gyogyo K.K. ADDRESS: 12 Esashi, Esashicho, Esashi-gun, Hokkaido COMPANY: Eyu, K.K. ADDRESS: 5-12-1 Shimbashi, Minato-ku, Tokyo COMPANY: FIT Trading Co., Ltd. ADDRESS: 5-9-5-102 Uozaki-kitamachi, Tokai-ku, Kobe, Hyogo 658-0082 CONTACT: Mr. Mitsutaka Ikeda, Managing Director 81-78-453-4325 PHONE FAX: 81-78-453-4324 EMAIL: fittrd@silver.ocn.ne.jp COMPANY: Godak Marketing Corp. ADDRESS: Tsukiji First Bldg., 4-7-3 Tsukiji, Chuo-ku, Tokyo 104 CONTACT: Mr. Kimihiko Araya, President 81-3-3545-3771 PHONE FAX: 81-3-3545-3734 EMAIL: tokyo@godak.co.jp COMPANY: Goshoku, Co., Ltd. Tokyo Branch ADDRESS: 6-17-4 Tsukiji, Chuo-ku, Tokyo 104-0045 CONTACT: Mr. Yuichi Sunagawa, Executive Director PHONE: 81-3-3542-5699 FAX: 81-3-3545-1604 y.sunagawa@goshoku.co.jp EMAIL: WEB SITE: http://www.goshoku.co.jp COMPANY: Hamaya Gyoqyo K.K. ADDRESS: 1-18 Chishimacho, Nemuro, Hokkaido

COMPANY: Hanwa Co., Ltd., Tokyo, Food Dept. 1-13-10 Tsukiji, Chuo-ku, Tokyo 104-8429 ADDRESS: Mr. Masavoshi Kojima, Manager, Food No. 2 Dept. CONTACT: 81-3-3544-2015 PHONE: 81-3-3544-2050 FAX: kojima@hanwa.co.jp EMAIL: COMPANY: Hanwa Kogyo K.K. (Osaka ADDRESS: 4-3-9 Fushimicho, Chuo-ku, Osaka CONTACT: Mr. Tetsuro Yamamoto, Manager 81-6-6206-3319 PHONE: 81-6-6206-3389 FAX: COMPANY: Haruki Shoji ADDRESS: 5-32 Kamekawa-chuocho, Beppu, Oita COMPANY: Hayakawa Tsusho ADDRESS: 4-6-6 Myojincho, Hachioji, Tokyo COMPANY: Henderson Trippe K.K. 527 Hibiya Park Bldg., 1-8-1 Yurakucho ADDRESS: Chiyoda-ku, Toyama 100 CONTACT: Mr. Ohji Matsuo 81-3-3271-2921 PHONE 81-3-3271-2922 FAX: COMPANY: Hinomaru Sangyo K.K. ADDRESS: 81-32-1 Takagicho, Fukui, Fukui Hiroshima Trading Co., Ltd. COMPANY: 3-4-4 Uchikanda, Chiyoda-ku, Tokyo 101 ADDRESS: Mr. Masao Kumura CONTACT: Hohsui Coporation COMPANY: Kyoei Bldg., 1-6-1 Hatchobori, Chuo-ku, Tokyo 104-8412 ADDRESS: CONTACT: Mr. Hiroshi Imachi, President 81-3-3297-8181 PHONE: 81-3-3297-8205 FAX: EMAIL: omata@hohsui.co.jp WEB SITE: http://www.hohsui.co.jp/ Hokkai Seafoods Co., Ltd. COMPANY: ADDRESS: Tsukiji Asakawa Bldg., 11-3 Akashicho, Chuo-ku, Tokyo 104 - 0044CONTACT: Mr. Koichi Yamamoto 81-3-3546-1261 PHONE: FAX: 81-3-35461260

COMPANY: Hoko Fishing Co., Ltd. ADDRESS: 1-2-4 Tsukiji, Chuo-ku, Tokyo 104-0045 CONTACT: Mr. Shiqeyuki Sanjo, Managing Director PHONE: 81-3-3542-5644 FAX: 81-3-3545-2167 COMPANY: Hokuyo Kyodo Gyoqyo K.K. ADDRESS: 1-8-10 Toranomon, Minato-ku, Tokyo CONTACT: Mr. Tetsuya Araya, President PHONE: 81-3-3508-1411 FAX: 81-3-3508-1445 COMPANY: Honami Bussan Co., Ltd. ADDRESS: Gyokou Bldg. Room505, 1-16-1 Yamato-cho Shimonoseki, Yamaguchi 750-0065 PHONE: 81-832-67-5670 81-832-66-2181 FAX: COMPANY: Honda Trading, K.K. ADDRESS: Daiichi Tekko Bldg 2F 1-8-2 Marunouchi Chiyoda-ku, Tokyo COMPANY: Ihara & Co., Ltd. ADDRESS: 1-24 Funabacho, Rumoi, Hokkaido 077 CONTACT: Mr. Miura-san PHONE: 81-164-43-0001 FAX: 81-164-43-4707 EMAIL: y-miura@po.teleway.ne.jp COMPANY: J Ocean, K.K. ADDRESS: Maison d'Or New 2-16 Akashicho, Chuo-ku, Tokyo COMPANY: Japan Food K.K. ADDRESS: 3-11-36 Mita, Minato-ku, Tokyo COMPANY: JALUX, K.K. JAL Building, 2-4-11 Higashi-shinagawa, Shinagawa-ku, ADDRESS: Tokyo 140 CONTACT: Mr. Koji Yagi, Nosuisan-bu PHONE: 81-3-5460-7151 81-3-5460-7223 FAX: EMAIL: yagi@jalux.com COMPANY: Jissho Nakata, K.K. ADDRESS: 2-17 Iriecho, Shimonoseki, Yamaguchi COMPANY: Kaiyo Boeki K.K. ADDRESS: 2-201 Yokogawa, Kanazawa, Ishikawa

COMPANY: Kakoren Ltd. ADDRESS: Mainichi Bldg. 8F, Nishi 6, Kita 4-jo, Chuo-ku Sapporo, Hokkaido 060-0004 81-11-241-0101 PHONE: 81-11-221-1628 FAX: COMPANY: Kanbe Ltd. ADDRESS: 7-13-5 Tsukiji, Chuo-ku, Tokyo COMPANY: Kanematsu K.K. ADDRESS: 2-1 Narayacho, Hakata-ku, Fukuoka, Fukuoka COMPANY: Kaneshin Suisan, K.K. ADDRESS: 4-10-5 Tsukiji, Chuo-ku, Tokyo COMPANY: Kankoku Katsugyo Yunyu Hanbai Kyodo Kumiai ADDRESS: Dainichi Suisan Bldg., 2-1-2 Kajiyacho, Hyogo-ku Kobe, Hyogo COMPANY: Kawaei Shokai Co., Ltd. ADDRESS: 1-16-2 Yamatomachi, Shimonoseki, Yamaguchi 750 PHONE: 81-832-66-7557 81-832-66-7557 FAX: COMPANY: Kawamoto Shoji Co., Ltd. ADDRESS: 1-10-13 Yamatomachi, Shimonoseki, Yamaguchi 750-0067 81-832-67-1321 PHONE 81-832-67-1322 FAX: COMPANY: Kibun Shoji, K.K. ADDRESS: 7-14-13 Ginza, Chuo-ku, Tokyo 104 CONTACT: Mr. Jerry Iwasa 81-3-3543-7208 PHONE: 81-3-3543-7209 FAX: yoshiyasu iwasa@kibun-ti.co.jp EMAIL: COMPANY: Kibun Shokuhin, K.K. ADDRESS: 7-14-13 Ginza, Chuo-ku, Tokyo 104-8101 CONTACT: Mr. Eiji Nishimura, Manager, Surimi Division, Purchasing Dept. 81-3-3544-2615 PHONE: 81-3-3544-2580 FAX: COMPANY: Kinnan Shoji K.K. ADDRESS: 1-16-1 Ymatocho, Shimonoseki, Yamaguchi COMPANY: Kita Borneo Suisan K.K. ADDRESS: 4-4-8 Tsukiji, Chuo-ku, Tokyo

COMPANY: Kobe Yoko Ltd. ADDRESS: KIMM Bldg., 4-2-8 Isobe-dori, Chuo-ku, Kobe, Hyogo 651 CONTACT: Mr. Takamasa Ohashi PHONE: 81-78-232-3521 FAX: 81-78-232-3723 COMPANY: Kodaira, K.K. ADDRESS: 4-48-9 Shimoarata, Kagoshima, Kagoshima COMPANY: Kohyo Co., Ltd. ADDRESS: 5-4-19 Shinsei, Yokkaichi-shi, Mie 510-0064 CONTACT: Mr. Shintaro Hayashi, Director, Business Dept. PHONE: 81-593-55-2441 FAX: 81-593-54-3428 EMAIL: shayashi@kohyoj.co.jp COMPANY: Koike Industries ADDRESS: 3-4-22 Sakanamachi, Ishinomaki, Miyaqi 986-0022 CONTACT: Ms. Ikuyo Koike, President 81-225-94-9434 PHONE: FAX: 81-225-94-9435 EMAIL: koike-il@dup.joho-miyagi.or.jp COMPANY: Kokusai Shoji K.K. ADDRESS: 1-3-8 Yaesu, Chuo-ku, Tokyo COMPANY: Kongo Bussan Co., Ltd. ADDRESS: 3-14-4 Kosei, Minato-ku, Osaka, Osaka 552 COMPANY: Kosei Trading Ltd. ADDRESS: Togeki Bldg., 4-1-1 Tsukiji, Chuo-ku, Tokyo 104-0045 COMPANY: Kotake Tsusho K.K. ADDRESS: 2-15-13 Tsukiji, Chuo-ku, Tokyo COMPANY: Kyodo Agri-Marine MFG. Ltd. ADDRESS: 940 Gushikawa, Gushikawa, Okinawa 904-2223 CONTACT: Mr. Noriaki Ishikawa, Managing Director 81-98-974-3133 PHONE: FAX: 81-98-973-8537 EMAIL: inaokajp@ii-okinawa.ne.jp COMPANY: Kyoritsu Shoji Co., Ltd. ADDRESS: 4-12-24 Hikoshima nishiyama-cho, Shimonoseki, Yamaguchi 750-0093 81-832-61-1430 PHONE: FAX: 81-832-61-1431 COMPANY: Kyowa Suisan K.K. ADDRESS: 4-13-10 Tsukiji, Chuo-ku, Tokyo

COMPANY: Kyushu Kaisan, K.K. ADDRESS: 1-47-35 Harada, Higashi-ku, Fukuoka, Fukuoka COMPANY: Leaf Shoji K.K. ADDRESS: 6-6-2 Shimorenjaku, Mitaka, Tokyo CONTACT: Mr. Naganori Hayama 81-422-48-1133 PHONE: 81-422-48-1134 FAX: COMPANY: Marubeni Corporation, Marine Products Dept ADDRESS: 1-4-2 Ohtemachi, Chiyoda-ku, Tokyo 100-0004 CONTACT: Mr. Kazu Nakamura 81-3-3282-4752 PHONE: 81-3-3282-9654 FAX: Nakamura-K@marubeni.com EMAIL: COMPANY: Marugen Marinefoods Co., Ltd. ADDRESS: 93 Tabata-cho, Kitami, Hokkaido 090 CONTACT: Mr. Toru Fujisawa, President PHONE: 81-157-24-8211 81-157-24-9213 FAX: COMPANY: Marukin Sangyo K.K. ADDRESS: 3-43-6 Nihonbashi-hamacho, Chuo-ku, Tokyo COMPANY: Marusen Shoji, K.K. ADDRESS: 4-11-5 Hikoshima-nishiyamacho, Shimonoseki, Yamaguchi COMPANY: Marutaka Co., Ltd. (Shimonoseki) ADDRESS: 1-2-8 Yamatocho, Shimonoseki, Yamaguchi 750-0067 81-832-66-4106 PHONE: 81-832-67-3019 FAX: COMPANY: Maruyoshi, K.K. ADDRESS: 91-13 Nishiminatocho, Kokurakita-ku, Kita-kyushu, Fukuoka COMPANY: Masumine Tsusho K.K. ADDRESS: 3-12 Nihonbashi-hakozakicho, Chuo-ku, Tokyo COMPANY: Matsuda Sangyo K.K. Shinjuku Nomura Bldg. 6F, 1-26-2 Nishi-shinjuku ADDRESS: Shinjuku-ku, Tokyo 163 Mr. Kyohei Toyoda, General Manager, Quality Assurance CONTACT: Dept., Food Division 81-3-3993-6235 PHONE: FAX: 81-3-3993-6632

COMPANY: Matsuoka Co., Ltd. ADDRESS: 1-10-12 Higashi-yamatomachi, Shimonoseki, Yamaguchi 750-8512 81-832-67-5566 PHONE 81-832-67-5286 FAX: COMPANY: Matsuyama Co., Ltd. (Shimonoseki ADDRESS: 11-39 Hananocho, Shimonoseki, Yamaguchi 750-0014 81-832-34-4131 PHONE FAX: 81-832-34-4138 COMPANY: Meika Trading Co., Ltd. ADDRESS: Noe Bldg., 1-2-17 Shibadaimon, Minato, Tokyo 105-0012 CONTACT: Mr. Hiroyuki Ando, President 81-3-3438-0505 PHONE COMPANY: Miei Bussan K.K. ADDRESS: 9-20 Nakashimacho, Nishinomiya, Hyogo COMPANY: Mineichi Suisan, K.K. ADDRESS: 2-3-38 Honcho, Hyogo-ku, Kobe, Hyogo COMPANY: Mitsubishi Corporation, Marine Products Dept. ADDRESS: 2-3-1 Marunouchi, Chiyoda-ku, Tokyo 100-8086 CONTACT: Mr. Mikio Sasaki, President 81-3-3210-6705 PHONE: 81-3-3210-6726 FAX: WEB SITE: http://www.mitsubishi.co.jp/ COMPANY: Mitsui & Co., Ltd., Marine Prod. Div. ADDRESS: 1-2-1 Ohtenachi, Chiyoda-ku, Tokyo 100-0004 CONTACT: Mr. Hiroshi Hirano, Chief Operating Officer, Foods Group 81-3-3285-6020 PHONE: 81-3-3285-9909 FAX: Web Site: http://www.mitsui.co.jp/ COMPANY: MK, K.K. ADDRESS: 3-3-3 Irifune, Chuo-ku, Tokyo COMPANY: Momokawa Co. ADDRESS: 2-16-4 Nihonbashi, Chuo-ku, Tokyo CONTACT: Mr. Keiji Momokwa, President PHONE 81-3-3272-7321 81-3-3272-7324 FAX: COMPANY: Morikawa Shoji K.K. ADDRESS: 4-2 Kojimachi, Chiyoda-ku, Tokyo

COMPANY: Nagae, K.K. ADDRESS: Life Science Bldg 7F 2-6-6 Nihonbashi-horidomecho Chuo-ku, Tokyo COMPANY: Natsuyama Shokai, K.K. ADDRESS: 3-3-25 Takezakicho, Shimonoseki, Yamaguchi COMPANY: New Asia Trading Co., Ltd. ADDRESS: 3-3-9 Senba-chuo, Chuo-ku, Osaka, Osaka 541 CONTACT: Mr. Hiroshi Okuuchi 81-6-6245-0251 PHONE 81-6-6425-0255 FAX: COMPANY: Nichiboren K.K. ADDRESS: 1-26-14 Higashishinmachi, Itabashi-ku, Tokyo COMPANY: Nichimo Co., Ltd., Food Business Department ADDRESS: Tennozu Yusen Bldg., 2-2-20 Higashi-shinagawa Shinagawa-ku, Tokyo 140-0002 CONTACT: Mr. Katsuyasu Ito, Director 81-3-3458-3020 PHONE 81-3-3458-3088 FAX: COMPANY: Nichirei Corporation, Marine Products Division ADDRESS: 6-19-20 Tsukiji, Chuo-ku, Tokyo 104-8402 CONTACT: Mr. Masahiro Abe 81-3-3248-2201 PHONE: 81-3-3248-2159 FAX: abemsh@nichirei.co.jp EMAIL: COMPANY: Nichiryo, K.K. ADDRESS: 2-2-1 Azabudai, Minato-ku, Tokyo COMPANY: Niki Corporation ADDRESS: Okamura Bldg. 5F, 3-16-7 Hatchobori, Chuo-ku, Tokyo COMPANY: Niki Shoji ADDRESS: 6-32-5 Hirai, Edogawa-ku, Tokyo COMPANY: Nikkan Suisanbutsu-boeki Kyodo Kumiai ADDRESS: 4-4-16 Daigakucho, Shimonoseki, Yamaguchi COMPANY: Nippon Samsung K.K. ADDRESS: 3-2-1 Hakataekimae, Hakata-ku, Fukuoka, Fukuoka COMPANY: Nippon Suisan Kaisha, Ltd. ADDRESS: 2-6-2 Otemachi, Chiyoda-ku, Tokyo 100-8686 CONTACT: Mr. Naoya Jinushi, Manager, Distribution Sction 1, PHONE: 81-3-3244-7000 FAX: 81-3-3244-7465 EMAIL: nao@nissui.co.jp

COMPANY: Nippon Trading Co., Ltd. ADDRESS: 3-17-1 Soyamacho, Kita-ku, Kobe, Hyogo 651-11 PHONE: 81-78-594-4711 FAX: 81-78-594-4811 COMPANY: Nipporos Corporation ADDRESS: 1-18 Kanda-sudacho, Chiyoda-ku, Tokyo 100-0041 CONTACT: Mr. Katsuhiro Yoshizumi, President PHONE: 81-3-5296-1061 COMPANY: Nissei Kosan ADDRESS: 285 Hanasakiko, Nemuro, Hokkaido COMPANY: Nogami Shoten ADDRESS: 4-12-30 Nishiyamacho, Hikoshima, Shimonoseki, Yamaguchi 750 PHONE: 81-832-67-7435 81-832-67-8392 FAX: COMPANY: Nomura Trading Co., Ltd., Food Business Unit ADDRESS: Higashikanda Daiji Bleg 1-7-8 Higashikanda, Chiyoda-ku, Tokyo 101-0031 CONTACT: Mr. Susumu Nasihmoto, Executive Director, Food Business Unit PHONE: 81-3-5821-1507 FAX: 81-3-5821-1257 EMAIL: s-nashimoto@nomuratrading.co.jp COMPANY: Northern Trading, K.K. ADDRESS: 1-1-3 Iwamotocho, Chiyoda-ku, Tokyo COMPANY: Okinawa Free Zone Foods, K.K. ADDRESS: Bldg. 1, Okinawa Free Trade Zone, Kagami-mizusakihara, Jisaki, Naha, Okinawa COMPANY: Otake Ooru K.K. ADDRESS: 1-11-8 Kanda-ogawacho, Chiyoda-ku, Tokyo COMPANY: Rasa Corporation ADDRESS: 8-1 Nihonbashi-hakozakicho, Chuo-ku, Tokyo 103 CONTACT: Mr. Hiroaki Yamashita PHONE: 81-3-3667-0291 FAX: 81-3-3249-5344 COMPANY: Royal Greenland Japan Ltd. ADDRESS: 1-16-14 Shinkawa, Chuo-ku, Tokyo 104-0033 CONTACT: Mr. Motonobu Sato, Planning Manager PHONE: 81-3-3551-1130 FAX: 81-3-3551-2351 EMAIL: mots@royalgreenland.com

COMPANY: Ryushoko K.K. ADDRESS: 2-17-2 Kitahorie, Nishi-ku. Osaka, Osaka COMPANY: Samon Tsusho K.K. ADDRESS: 20-7 Samoncho, Shinjuku-ku, Tokyo COMPANY: Sanei Shokuhin ADDRESS: 1025 Oaza-toshima, Annocho, Aki-gun, Mie COMPANY: Sankei Suisan K.K. ADDRESS: 4-3-12 Tsukiji, Chuo-ku, Tokyo COMPANY: Sanko Kaisanbutsu K.K. ADDRESS: 1-1 Isonocho, Hyogo-ku, Kobe, Hyogo 652-0842 CONTACT: Mr. Takumi Adachi, President 81-78-651-8181 PHONE: COMPANY: Sankyo Food Kogyo Co., Ltd. ADDRESS: Tokiwa Bldg 4-3-8 Tsukiji, Chuo-ku, Tokyo 104 CONTACT: Ms. Atsuko Yoshida PHONE: 81-3-3543-8661 81-3-3545-8375 FAX: COMPANY: Sanyo Trading Co., Ltd. ADDRESS: 2-11 Kanda-nishikicho, Chiyoda-ku, Tokyo 101-0054 PHONE: 81-3-3233-5882 81-3-3233-4158 FAX: COMPANY: Shin Ajia Boeki K.K. ADDRESS: 3-3-9-301 Senbachuo, Chuo-ku, Osaka, Osaka COMPANY: Shin Nihon Global Inc ADDRESS: SK Bldg. 3F, 1-13-19 Shintomi, Chuo-ku, Tokyo 104-0041 CONTACT: Mr. Yoshihiko Kuroda PHONE: 81-3-3555-3605 81-3-3555-3602 FAX: EMAIL: kuroda@sng.co.jp COMPANY: Shin Tokyo International Inc. ADDRESS: Lira Nogizaka Bldg. 6F, 1-15-18 Aoyama, Minato-ku, Tokyo 107 CONTACT: Mr. Masahiko Ishihara 81-3-3479-3903 PHONE: 81-3-3479-5959 FAX: mishihara@shintokyo.co.jp EMAIL: COMPANY: Shinko Shoji, K.K. ADDRESS: 7-5-15 Akasaka, Minato-ku, Tokyo

COMPANY: Shinko, K.K. ADDRESS: 7-13-5 Tsukiji, Chuo-ku, Tokyo COMPANY: Shinmei Jitsugyo K.K. ADDRESS: 2-6-2 Otemachi, Chiyoda-ku, Tokyo COMPANY: Shinten, K.K. ADDRESS: 20-7 Samoncho, Shinjuku-ku, Tokyo COMPANY: Shinto Corporation ADDRESS: 2-14-8 Tsukiji, Chuo-ku, Tokyo CONTACT: Mr. H. Tsuchikane PHONE: 81-3-3546-1281 FAX: 81-3-3546-1277 COMPANY: Shinyei Kaisha ADDRESS: 77-1 Kyomachi, Chuo-ku, Kobe, Hyogo 651-01 CONTACT: Mr. Shigefumi Yamaguchi, Manager PHONE: 81-3-5443-1789 FAX: 81-3-5443-1788 s-yamaguchi@sk.shinyei.co.jp EMAIL: COMPANY: SK Group Japan K.K. ADDRESS: 2-7-4 Nishishimbashi, Minato-ku, Tokyo COMPANY: Suevoshi Corporation, K.K. ADDRESS: 5-29-22-410 Shiba, Minato-ku, Tokyo 108-0014 CONTACT: Mr. Masataka Sueyoshi PHONE: 81-3-5446-5938 FAX: 81-3-5446-0938 EMAIL: sueyoshi@cnr.ne.jp COMPANY: Sumitomo Corporation (SC Foods Co., Ltd.) ADDRESS: Kandabashi Yasuda Bldg., 1-1 Kanda-nishikicho Chiyoda-ku, Tokyo 101-0054 CONTACT: Mr. Shin Matsumoto, President 81-3-3219-3030 PHONE: FAX: 81-3-3219-3045 WEB SITE: http://www.scgourmet.co.jp COMPANY: Sunland Corp. ADDRESS: Kitaguchi Saito Bldg., 5-6-20 Honcho, Funabashi, Chiba 273-0005 CONTACT: Mr. Akiyoshi Okubo, President 81-47-460-2080 PHONE: 81-47-460-2099 FAX: EMAIL: sunland@pop21.odn.ne.jp

COMPANY: Taito Seiko Co., Ltd. ADDRESS: Imaasa Bldg., 1-1-21 Higashi-shimbashi, Minato-ku, Tokyo 105-0021 PHONE: 81-3-3572-3235 FAX: 81-3-3571-7881 COMPANY: Taiyo Shokuhin K.K. (Yokohama) ADDRESS: 2-28 Otacho, Naka-ku, Yokohama, Kanagawa, Nihonbashi-kayabacho, Chuo-ku, Tokyo 103-0025 COMPANY: Takeichi & Co., Ltd. ADDRESS: Shuwa No. 3 Kayabacho Bldg., 3-12-6, CONTACT: Ms. Hiromi Kawada PHONE: 81-3-3669-9252 FAX: 81-3-3669-3540 COMPANY: Takuto Tsusho ADDRESS: 757-49 Ishihata, Mizuho-cho, Nishitama-gun, Tokyo COMPANY: Tin Hon, K.K. ADDRESS: 1310-1 Yoshioka, Daieicho, Katori-gun, Chiba COMPANY: Tohei Shokai, K.K. ADDRESS: City Square Tsukiji Rm 601, 6-4-5 Tsukiji Chuo-ku, Tokyo COMPANY: Toho Bussan Kaisha, Ltd., Food Stuff Div., Marine-Products Team ADDRESS: Shuwa Shiba Park Bldg., A-8F, 2-4-1 Shibakoen Minato-ku, Tokyo 105-0011 CONTACT: Mr. Ken Suizu, Deputy Manager 81-3-3438-5742 PHONE: FAX: 81-3-3438-5798 EMAIL: ken.suizu@tohob.co.jp COMPANY: Toka Boeki K.K. ADDRESS: 9-1 Nisshincho, Kawasaki-ku, Kawasaki, Kanagawa COMPANY: Tokai Suisan Trading Co., Ltd. ADDRESS: Kyoei Bldg. F, 6-1-8 Tsukiji, Chuo-ku, Tokyo 104-0045 CONTACT: Mr. Hannosuke Hanabusa, President 81-3-3546-1900 PHONE: FAX: 81-3-3546-1906 COMPANY: Toko Industrial Co., Ltd. ADDRESS: 1-2-5 Higashi-yamatomachi, Shimonoseki, Yamaguchi 750-0066 CONTACT: Mr. Kunio Kanemitsu, President PHONE: 81-832-67-2385 FAX: 81-832-67-0100

COMPANY: Tokyo Commercial Co., Ltd. ADDRESS: 8-15 Toyomicho, Chuo-ku, Tokyo 104-0055 CONTACT: Mr. Kosuke Sakai, Deputy Manager PHONE: 81-3-3534-1301 FAX: 81-3-3532-9420 EMAIL: k.sakai@tccwf.co.jp COMPANY: Tomei Fruits Co., Ltd. ADDRESS: Kyobashi NS Bldg. 8F, 2-5-21 Kyobashi, Chuo-ku, Tokyo 104 CONTACT: Mr. Hiromaru Tadao 81-3-3563-3751 PHONE: FAX: 81-3-3563-3755 COMPANY: Tomen Corporation, Marine Product Dept. ADDRESS: Tomen Marunouchi Bldg., 3-8-1 Marunouchi Chiyoda-ku, Tokyo 100-8623 CONTACT: Mr. Ikebuchi-san 81-3-5288-3124 PHONE: 81-3-5288-9115 FAX: WEB SITE: http://www.tomen.co.jp/ COMPANY: Tosan Gyogyo K.K. ADDRESS: 1-10-15 Yamatocho, Shimonoseki, Yamaguchi COMPANY: Tosho Co., Ltd. ADDRESS: 1-2-8 Yamatomachi, Shimonoseki, Yamaguchi 750-0067 PHONE: 81-832-66-5141 FAX: 81-832-66-5142 COMPANY: Toyokawa, K.K. ADDRESS: 3-7-16 Edobori, Nishi-ku, Osaka, Osaka PHONE: 81-6-6441-1072 COMPANY: Toyota Tsusho Corporation, Foods Dept. 2 ADDRESS: 2-14-9 Nihonbashi, Chuo-ku, Tokyo 103-8655 CONTACT: Mr. Masayuki Morita, General Manager 81-3-3242-8367 PHONE: FAX: 81-3-3242-8528 EMAIL: MASAYUKI 1 MORITA@gw.toyotsu.co.jp COMPANY: Tsukasa Shoji, K.K. ADDRESS: 1-18-6 Nishishimbashi, Minato-ku, Tokyo COMPANY: Tsukiji Suisan, K.K. ADDRESS: 3-11-18 Tsukuda, Chuo-ku, Tokyo 104-0051 CONTACT: Mr. Yoshihiro Enomoto, Managing Director WEB SITE: <u>http://www.tsukiji-suisan.com</u> COMPANY: Tsukiji Toyo K.K. ADDRESS: 2-13-40 Konan, Minato-ku, Tokyo

COMPANY: Umada Boeki K.K. ADDRESS: 5-2 Bentencho, Kokurakita-ku, Kitakyushu, Fukuoka COMPANY: Umimar, K.K. ADDRESS: 2-2-7 Kudan-minami, Chiyoda-ku, Tokyo COMPANY: Unicoop Japan (Kumiai Boeki, K.K.) 1-1-12 Uchikanda, Chiyoda-ku, Tokyo 101 ADDRESS: 81-3-3296-8983 PHONE: FAX: 81-3-3219-1460 COMPANY: Union Foods K.K. 3-20-30 Kokubu-minami, Ebina, Kanagawa ADDRESS: COMPANY: Unique Trading K.K. ADDRESS: Tsukiji SK Bldg., 2-1-16 Tsukiji, Chuo-ku, Tokyo COMPANY: Yamasaki, K.K. ADDRESS: 1484-1 Oaza-fukue, Shimonoseki, Yamaguchi COMPANY: Yamawaki Shoten, K.K. ADDRESS: 1-16-1 Yamatomachi, Shimonoseki, Yamaguchi COMPANY: Yazawa Trading, K.K. ADDRESS: 3-15 Hamacho, Kushiro, Hokkaido COMPANY: Yokohama Tsusho K.K. 6-104 Aioi-cho, Naka-ku, Yokohama, Kanagawa ADDRESS: COMPANY: Zensui Co., Ltd. ADDRESS: 1-10-3 Ginza, Chuo-ku, Tokyo 104 CONTACT: Mr. Taiga Nakano, Sales Section PHONE: 81-3-5250-2411 FAX: 81-3-5250-2415 EMAIL: zensui@mb.kcom.ne.jp The U.S. Embassy Tokyo, USFCS Tokyo and the National Marine Fisheries Service cannot be responsible for the accuracy of this information nor do they endorse any companies listed herein.

Source: U.S. Embassy, Fisheries Commercial Service Section, Tokyo, Japan 2002