ALASKA LEGISLATURE COMMITTEE FILES 1991-1992 8672
7125 HOUSE RESOURCES

Canadian Catch by Species

	Reds	Pinks	Chums	Coho	Kings	Total
1980	16,000,000	30,000,000	36,000,000	19,000,000	14,000,000	118,000,000
1981	46,000,000	84,000,000	13,000,000	16,000,000	13,000,000	173,000,000
1982	66,000,000	8,000,000	33,000,000	20,000,000	15,000,000	144,000,000
1983	31,000,000	87,000,000	10,000,000	23,000,000	11,000,000	164,000,000
1984	28,000,000	26,000,000	19,000,000	22,000,000	13,000,000	110,000,000
1985	69,000,000	83,000,000	52,000,000	19,000,000	12,000,000	236,000,000
1986	68,000,000	65,000,000	55,000,000	29,000,000	11,000,000	228,000,000
1987	33,000,000	59,000,000	22,000,000	17,000,000	11,000,000	143,000,000
1988	26,000,000	70,000,000	66,000,000	15,000,000	13,000,000	191,000,000
1989	72,000,000	63,000,000	19,000,000	17,000,000	11,000,000	185,000,000

As he predicted for the Alaska fishery, Hunter estimates that Canadian commercial catches will increase 20 to 25 percent by 2000. The University of British Columbia's Larkin notes that ocean ranching programs may increase commercial harvests by up to 50 percent, based on the success of Alaska's program.

Japan

Japan's commercial harvest of salmon has changed dramatically in the past 15 years as Japanese fleets have been removed from traditional fishing grounds. Salmon formerly caught by Japanese motherships and driftnet fleets have been replaced, for the most part, by wild (and ranched) Pacific salmon imports from the U.S., Canada, and some farmed Atlantic and Pacific salmon—mostly from Norway and Chile.

The Japanese high seas salmon fishery has been operating in the northern and western Pacific, mainly targeting Soviet salmon. During the past several years, the Soviets have continued to reduce salmon allocations to Japan with the reported goal of completely phasing out all Japanese high seas salmon operations by 1992. All mothership operations have already been phased out with the land-based driftnet fleet participating for limited tonnage.

This year, the Japanese fleet operating within the Soviet 200-mile zone is mainly restricted to pink salmon areas only, according to Bill Atkinson's *News Report*. Atkinson reports that more and more boat owners are losing interest in the high-seas fishery due to heavy financial losses.

Since high-seas operations have been greatly reduced, the harvest of ranched chums in the coastal regions of Hokkaido and Honshu provides the bulk of the Japanese commercial catch in this late summer-fall fishery. At the beginning of the decade, the fall chum fishery constituted about 58 percent of the total Japanese catch. By the end of the decade, the fall ranched harvest averaged above 80 percent of the total Japanese commercial catch.

Japanese Chum Catches

	Chum Catch	Domestic Landings	% of Chum catch
1980	166,000,000	284,000,000	58%
1981	224,000,000	344,000,000	65%
1982	197,000,000	314,000,000	65%
1983	251,000,000	367,000,000	68%
1984	255,000,000	359,000,000	71%
1985	350,000,000	460,000,000	76%
1986	313,000,000	389,000,000	80%
1987	303,000,000	397,000,000	76%
1988	330,000,000	373,000,000	88%
1989	377,000,000	478,000,000	79%
1990	363,000,000	–	–

The fall chum fishery is centered in two northern Japanese regions: Hokkaido and Honshu. They are mainly harvested in fixed nets as they return to spawn in the rivers in which they were released. The number of chums returning has increased dramatically. According to the Japanese External Trade Organization, 17.5 million fish returned in 1975, resulting in a harvest of 127 million pounds. By the mid-1980s, harvests of the artificially incubated chums had stabilized around the 308- to 374-million pound level.

H. Suzuki of the Nichiro Corporation (one of the three largest Japanese fishing companies) calls the fall chum catch fairly stable. He believes the fall chum fishery has reached its maximum production level, based on the escapement capacity of the river systems. He also expressed some concern about the price difference between males and females—especially dark males.

Soviet Union

Relatively little is known about historical levels of Soviet salmon harvests.

Recently, the Soviets restricted Japanese salmon fleets operating in the Soviet 200-mile zone. Annual negotiations on salmon harvests in the Soviet zone between the Japanese and the Soviets usually end by May, so that fleets can begin operations. This year, the Japanese land-based fleet was restricted to pink salmon areas only. It is anticipated that by 1992, the Soviets will have excluded the Japanese fleet from Soviet waters and salmon catches will be reserved for domestic fishermen.

Reportedly, the Soviets harvested about 176 million pounds of salmon in 1986 (3 million pounds of kings, 11 million pounds of coho, 17 million pounds of sockeyes, 54 million pounds of chum and 89 million pounds of pinks). The harvest in 1989 was of a similar size to the 1986 harvest and the harvest in 1990 was expected to be about 286 million pounds, according to the Alaska State Office in Tokyo. Some fishery observers anticipate even greater Soviet harvests in the coming decade.

At a recent symposium hosted by the Sakhalinsk branch of the Soviet Institute of Fisheries and Oceanography, salmon stocks and salmon enhancement were the major focus. The Canadian Department of Fisheries and Oceans discussed salmon enhancement methods with Soviet counterparts.

According to the June 1990 issue of *Fishing News International*, the Soviets revealed at the symposium their plans to increase enhancement operations to boost Soviet salmon harvests to 661 million pounds per year (about 30 percent of current world salmon production and roughly the level of Alaska salmon production). That may be optimistic, but does signal that the Soviets intend to be aggressive players in the salmon markets.

DOMESTIC U.S. MARKET: Situation Analysis

STRATEGIC ISSUES: AN OVERVIEW

The following Domestic U.S. Salmon Situation Analysis is divided into ten core marketing issues, each of which is discussed at length in this study. Because they represent threats to U.S. salmon consumption it will be critical to address them carefully to ensure an increase in the overall demand and preference for Alaska salmon.

■ **Trade preference for fresh**
Because the season for Alaska wild salmon is restricted to five months a year, the trade prefers farm-raised salmon, which are available year-round. Import market gains reflect this preference.

■ **Consumer preference for fresh**
Both in-home and restaurant consumers choose fresh salmon over frozen. Since the bulk of Alaska salmon not canned is distributed in frozen form, negative perceptions regarding frozen salmon must be eliminated in order to survive competitive pressure from imported fresh salmon. And because the fresh/frozen segment will likely constitute the majority of future consumption, this issue becomes vital.

■ **Declining canned salmon consumption**
Because consumption of canned salmon, which represents half of Alaska salmon production, is on the decline, programs to increase usage need to be implemented. Canned salmon currently has little foreign competition; therefore, immediate increased consumption will primarily benefit Alaska producers (with the exception of Canadian canned salmon). It should be noted, however, that farmed producers are now beginning to experiment with canning.

■ **Consumer and trade education**
Consumers lack knowledge of various species and their qualities, preparation

techniques and the benefits of Alaska frozen salmon. Overall there is low awareness of the superior health and nutritional benefits that fresh/frozen and canned salmon offer over other protein sources—namely, low fat and cholesterol content as well as Omega-3 fatty acids that lower the risk of heart disease. Canned salmon in particular suffers from an "old-fashioned" image that limits its use to a few traditional dishes.

Neither the retail nor foodservice trade are educated as to the best ways to maximize profit margins through effective merchandising, display, packaging and promotional campaigns. Foodservice operators in particular know little about the advantages of frozen fish, such as the limited product waste during preparation, as well as how to determine whole fish yields and plan flexible menus to accommodate unpredictable pricing changes. Tackling these trade issues is critical to competitive, year-round distribution.

■ **Low awareness**

Most consumers do not readily think of salmon when planning a seafood menu. Only 40 percent of all households consume fresh/frozen and canned salmon. Consumers who are aware of salmon-producing regions have positive perceptions of Alaska salmon, but general awareness of origin is low.

■ **Negative quality perceptions**

Among the trade, the quality of farm-raised salmon is perceived to be superior to ocean-caught. Some of the foodservice trade negatively perceives how fresh/frozen Alaska salmon is handled from catch through distribution. Consumers believe frozen is inferior to fresh salmon, despite flash-freezing techniques that protect the flavor and freshness. Consequently, trade groups and consumers [illegible]d to be educated on the superiority of Alaska salmon in order to expand distribution.

■ **Canned salmon versus competition of tuna**

The per capita consumption of canned tuna has grown steadily over the past several years, and is currently more than 10 times greater than canned salmon. In 1989 it was 3.9 pounds per person compared to 0.3 pounds for salmon—the same as canned sardines. In fact, tuna accounts for 25 percent of all fish and shellfish (U.S. per capita) consumption, whereas canned salmon constitutes less than two percent. Replacing just a fraction of tuna usage with canned salmon represents sizeable potential.

■ **Limited regional and seasonal usage**

Several regions in the U.S. have very low usage of salmon compared to an average for the rest of the country. Additionally, grocery trade promotion drives consumption for canned salmon from January through March and for fresh/frozen from October through December—leaving the balance of the year, for the most part, under developed and under marketed.

Limited canned salmon usage in foodservice

Of the total salmon consumed in foodservice, only eight percent is canned. Current usage is mostly in the smaller non-chain operations, which do not account for a great deal of volume. Food service perceptions that need to be overcome include beliefs that canned salmon is inconvenient, due to the bones and skin, and that it has a low consumer appeal.

Product unpredictability

Unpredictable harvests and higher export prices for higher-end Alaska species have caused inconsistent domestic supplies. As a result, Alaska's available domestic product mix has not been consistently competitive with the abundant, year-round supplies of imported high quality farmed salmon. Many Alaska producers focus on export markets due to premium prices. To attract supplies and command higher prices, the perceived value of Alaska salmon and relative value of each species must be increased within the domestic market. This is essential to build domestic consumption and defend against foreign competition.

SALMON CATEGORY

This section provides an overview to the U.S. salmon market, including such factors as market organization, significant market trends, competitive positions and strategies, trade concerns and external market factors. The analysis covers retail, consumer, and foodservice market segments.

Category Size and Trends

Exports represent half of market

U.S. salmon harvests reached a record 785 million pounds in 1989, following weaker 1986, 1987 and 1988 levels (see chart below). Exports have also reached record levels (377 million pounds in 1989) and now represent almost half of the total domestic harvest. U.S. salmon exports have continued to grow since 1985, increasing by 22 percent (59 million pounds). This is largely due to attractive foreign market prices and the shrinking U.S. market share for domestically produced fresh/frozen salmon.

Domestic Salmon Supply (Thousand Pounds)

	1985	1986	1987	1988	1989	
Total U.S. Harvest	726,946	658,521	562,018	606,148	785,868	100%
U.S Salmon Exports	308,710	371,068	305,596	327,015	377,790	48%
U.S Harvest Sold in U.S.	418,236	287,453	256,422	279,133	408,078	52%

Source: National Marine Fisheries Service

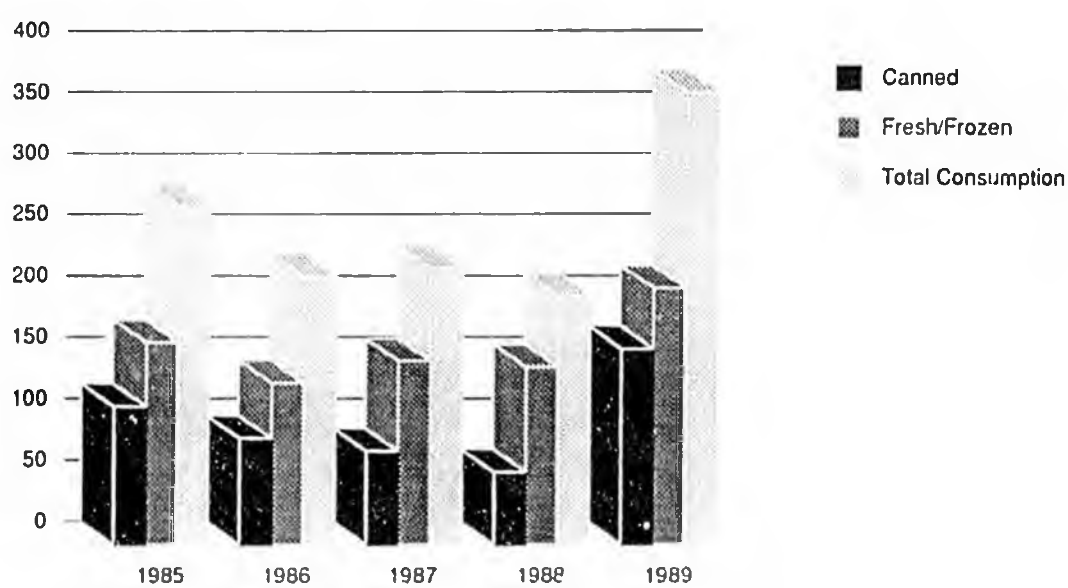
Imports making dramatic increases–canned consumption declining

Total U.S. salmon consumption reached a record high in 1989 of 368 million pounds, an increase of 33 percent (91 million pounds) since 1985 (see following chart). Of this total consumption, the fresh/frozen segment represents 57 percent (208 million pounds), with canned salmon representing 43 percent (159 million pounds).

Consumption of fresh/frozen salmon continues to increase (+20 million pounds since 1985). Imported fresh salmon has increased (+64 million pounds since 1985) at the expense of domestically produced salmon (-44 million pounds since 1985). Canned salmon consumption rose in 1989 after declines from 1986 through 1988. While the canned product increased during 1989, overall consumption per capita has declined since 1984.

U.S. Salmon Consumption

(million pounds)



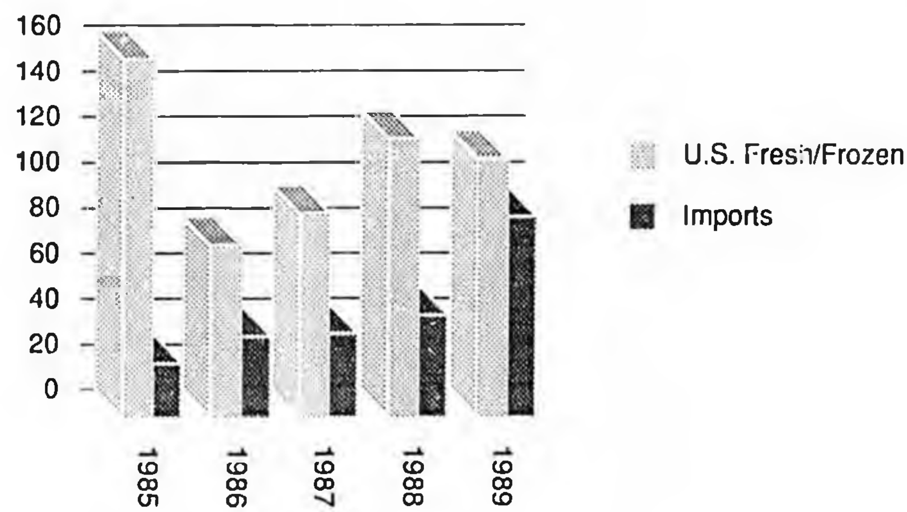
U.S. Harvest, Supply and Consumption (000 points)

	1985	1986	1987	1988	1989	4yr. Chg.
Total Alaska Harvest	651600	589600	489400	526400	713000	61400
Other U.S. Harvest	75346	68921	72618	79748	72868	-2478
Total U.S. Harvest	726946	658521	562018	606148	785868	58922
U.S. Salmon Exports	308710	371068	305596	327015	377790	69080
U.S. Pack (canned weight)	158953	141965	105206	88419	197044	38091
Canned Imports (canned wt.)	1958	4623	6652	3528	2943	985
Canned Exports (canned wt.)	48240	59434	35901	32900	40415	-7825
Canned Available for Consumption	112671	87154	75957	59047	159572	46901
Prior Year July 1 Carryover	734	735	1134	649	464	na
Current Year July 1 Carryover	735	1134	649	464	247	na
Net Change Inventory Carryover	1	399	-485	-185	-217	-218
U.S. Canned Consumption (fin. wt.)	112670	86755	76442	59232	159789	47119
U.S. Fresh/Frozen Production (prod wt.)	211596	102380	120285	164429	152203	-59393
U.S. Fresh/Frozen (adj for recvry @ 75%)	158697	76785	90214	123322	114152	-44545
Imports Fresh/Frozen (product weight)	27038	40549	41902	50144	98799	71761
Imports (adj for recvry @ 90%)	24334	36494	37712	45130	88919	64585
Fresh/Frozen Available for Consumption	183031	113279	127925	168451	203071	20040
January 1 Inventories (cold storage)	41259	60165	42197	21097	45164	na
December 31 Inventories (cold storage)	60165	42197	21097	45164	39657	na
Net change Fresh/Frozen Inventories	18906	-17968	-21100	24067	-5507	-24413
U.S. Fresh/Frozen (fin. wt.)	164125	131247	149025	144384	208578	44453
Total U.S. Consumption (fin. wt.)	276795	218002	225467	203616	368367	91572

In 1989, canned salmon contributed to total domestic salmon supply gains due to the record catch that year. More significantly, less demand for fresh/frozen resulted from increasing fresh salmon imports. Import supplies of fresh salmon have grown at a record pace since 1985 (up 267 percent, or 64 million pounds), while U.S. produced fresh/frozen supplies have declined (down 28 percent, or 44 million pounds (see chart below). Imports have been led by Canada, up 29 million pounds since 1985, followed by Norway (up 13 million pounds) and Chile (up 4 million pounds). The following chart further details fresh/frozen and canned salmon supply trends since 1985.

U.S. Fresh/Frozen Salmon Supply

U.S. Produced vs. Imports (million pounds)



Farmed imports increase to 17% of domestic supply

Imported farm-raised salmon continue to gain share of the domestic market supply. While ocean-caught salmon and virtually all of Alaska and other U.S. production represents 82 percent of the combined fresh/frozen and canned U.S. supply, farm-raised imports have increased from 7 percent in 1985 to 17 percent of the total 1989 supply. Alaska has lost a significant share of supply to imports within the fresh/frozen market. Alaska's share is now 63 percent down from 78 percent in 1985, while imports have grown to a 26 percent share of the fresh/frozen segment in 1989.

Foreign producers import mostly fresh salmon. Whereas Alaska wild salmon are harvested in summer months and frozen for consumption during the rest of the year, farmed salmon can be harvested and sold fresh year-round. Canadian and Norwegian import market gains are a direct result of this year-round availability of fresh salmon. The following chart further details the share of supply trends.

Share of U.S. Salmon Supply

	All Salmon		Canned Salmon		Fresh/Frozen	
	1989	Chg. vs. 85	1989	Chg. vs. 85	1989	Chg. vs. 85
Alaska	74.7%	-8.8 pts	98.2%	-0.1 pt	63.0%	-15.6 pts
Other U.S.	7.6	-2.0			11.2	-1.7
Total Domestic	82.3	-10.9	98.2	-0.17	4.2	-17.3
Canada	9.1%	6.3 pts.	1.6%	0.3pts.	13.3%	9.9 pts.
Norway	6.1	2.6	0.1	-0.1	8.8	4.3
Chile	0.9	0.9			1.4	1.3
All Other	1.6	1.1	0.2	-0.1	2.4	1.8
Total Imports	17.7	10.9	1.8	0.1	25.8	17.3
Total U.S. Supply	100%		100%		100%	

Source: National Marine Fisheries Service

Declining in-home consumption parallels canned salmon consumption

In-home salmon consumption per capita has declined 12 percent since 1984 (from 2.4 to 2.1 eatings per year). This is due to a decline in canned salmon consumption (30 percent), while fresh/frozen consumption has increased significantly (+25 percent) during this period. While no specific data is available for restaurant salmon consumption per capita, we believe it has increased along with the overall increase in fish consumption at restaurants (up 11 percent from 12.7 to 13.9 eatings per year).

Consumption Per Capita (eatings per 1000 capita)

	1983/84	1989/90	5 year Chg.	(Index)
In-Home				
Fresh/Frozen	788	986	+198	(125)
Canned	1,580	1,108	-472	(70)
Total Salmon	2,368	2,094	-274	(88)
All Fish/Shellfish	37,181	39,978	+2,797	(110)
Away From Home				
Fish/Shellfish	12,714	13,870	+1,156	(111)

Source: Market Research Corporation of America MRCA, June through May

Conclusion

Farmed fresh salmon imports represent a significant competitive challenge. Alaska's primary objective is to build consumer acceptance for Alaska frozen salmon to compete with the year-round availability of imported farmed fresh salmon. As the leading U.S. market supplier, Alaska must increase fresh/frozen salmon consumption while defending against foreign competition.

A second key marketing objective is to revitalize canned salmon consumption, as it represents half of all Alaska production.

PRODUCTION BY SPECIES

Increased exports/competitive pressure erode Alaska's share

Pink salmon represents almost half of the total domestic harvest (48%) followed by sockeye (36%), chum (6%), coho (6%) and chinook (4%). Canned salmon production uses mostly pinks because they tend to cost less. Chinook, sockeye and coho tend to be higher value, and theferfore are usually sold within the fresh/frozen market segment.

Pinks have increased significantly since 1980 as a percentage of the domestic harvest, while coho, chum and chinook have declined as a share of total harvest. Together, the three represent only 16%. Sockeye harvests have been volatile from year to year, yet have grown since 1980. Coho has remained stable as a percent of total harvests, but tonnage has grown as total harvest has increased. (Refer to the chart below.)

U.S. Harvest By Species (000 Pounds)

	1980	%H	1985	%H	1989	%H
Chinook	28533	5%	27187	4%	31500	4%
Coho	39270	6	52044	7	43800	6
Sockeye	207551	34	236077	32	274100	36
Chum	84916	14	92499	13	47500	6
Pink	253541	41	319139	44	367900	48
Total	613811	100%	726946	100%	764800	100%

Source: National Marine Fisheries Service

Coho harvests have increased slightly since 1980 while competitive imports have increased dramatically. Additionally, many Alaska producers are dependent upon exporting higher value species due to premium foreign market prices. As a result, the supply available for the domestic market has been limited and unpredictable.

Conclusion

Stable coho and chinook harvests, increased sockeye exports and increased competitive pressure from comparable high quality species have further eroded Alaska's share within the domestic fresh/frozen salmon market. Raising the value perception of Alaska salmon among U.S. consumers and the trade will increase domestic market demand, prices and thus profitability for Alaska producers.

Market Segments and Trends

Retail only 32% of category—canned & fresh dominate

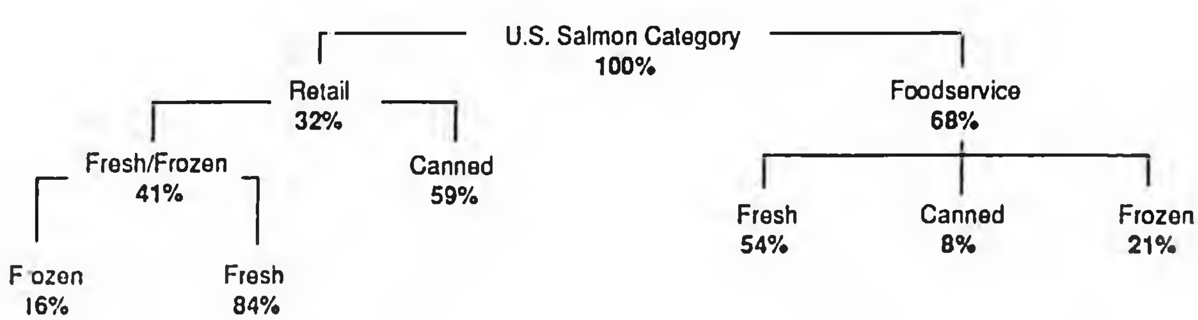
Sales through retail stores represent one-third (32 percent) of the domestic salmon category; the remainder is purchased through foodservice outlets. Two-thirds of the retail segment is purchased through supermarkets (62 percent), followed by fish markets (23 percent) and specialty outlets.

Fresh rather than frozen salmon consumption is increasing, as evidenced by import figures, trade response and consumer preferences. Four out of five consumers use fresh salmon. This preference is further supported by the fact that 84 percent of combined seafood sales are in fresh form, while only 16 percent are frozen.

The majority of farm-raised imports are distributed in fresh form, for the fish is harvested year-round, while Alaska salmon is inventoried and distributed frozen during off-season.

Canned salmon represents 59 percent of all retail salmon volume, and has experienced a decline in per capita consumption. Retail canned salmon consumption, however, fluctuates dramatically from year to year as supply and inventories vary depending on annual harvests. For example, during 1989 Alaska canned salmon production more than doubled as processors opted to "inventory" the record catch in canned form. Resulting trade price-cutting and heightened promotional activity drove canned salmon retail consumption up 46 percent (per Nielsen retail tracking). Despite these short-term volume increases, current canned salmon inventories remain high. The following chart estimates domestic salmon consumption by market segments:

Domestic Salmon Consumption



Only 1/3 of foodservice operators menu salmon

Foodservice represents 68 percent, or $6.9 billion, of seafood manufacturer sales, which translates into 250 million pounds of salmon. The foodservice segment is organized as follows with the largest volume attributed to restaurants:

% All Food Purchases

Commercial		Non-commercial	
Restaurants	52%	Business & Industry	9%
Retail Stores	5	Vending	8
Recreation	3	Health Care	6
Lodging	3	Schools	5
Drinking Places	1	Universities	3
		Airlines	2
	64%	Military	2
		Other	1
			36%

Source: Technomic Group, Foodservice Industry Analysis

Of all foodservice operators, only 35 percent currently include salmon on the menu. However, this level is up from 28 percent in 1982. To increase the number of operators menuing Alaska frozen salmon, top priority should be given to full-service restaurants, which represent the majority of food and salmon consumption. Specifically, commercial restaurants represent over half of all foodservice consumption, and 75 percent of away-from-home salmon consumption is at specialty seafood and white tablecloth restaurants. (See below.)

%Currently Menuing Salmon		% Full Service Restaurant Consumption	
Full Service Restaurants	43%	Specialty	39%
Fast Food	5	White Tablecloth	36
Hotels/Motels	70	Family	22
Health Care	35		
Colleges	36		
Schools	11		
Employee Feeders	29		
All Operators	35%		

Source: Restaurants & Institutions, 1990 Caravan Study

As seen in the following breakdown, fresh salmon usage in foodservice is more than twice that of frozen.

How Item Is Purchased

	Fresh	Frozen	Canned
Total Menuing Salmon	54%	21%	8%

Source: Restaurants & Institutions, 1989 Menu Census

Overall, 42 percent of all foodservice operators purchase fresh fish fillets and 35 percent purchase frozen fillets (unbreaded). Because usage of fresh salmon increases with the check average, fresh salmon is more likely to be found on the menus of more upscale restaurants (see figures below).

Index vs. Average

	Fresh Fish Fillets	Frozen Fillets
Commercial		
Upscale Restaurant	151	90
Midscale Restaurant	92	112
Hotel/Motel	158	129
Non-Commercial		
Health care	78	165
Business/Industry	112	116

Source: Simmons Research 1989

Canned salmon experiences very low foodservice penetration

Another factor to consider is the low level of canned salmon usage in food service. Only eight percent of restaurants menuing salmon purchase canned salmon. Fifty-two percent of this current usage is in the non-commercial side of the business (hospitals, colleges, schools and company dining facilities). On the commercial side (restaurants, hotels), the bulk of the business is in smaller non-chain operations and recreational feeding (e.g., Disneyland, theme parks).

Inconvenient image, perceived low appeal are barriers

At the operator level, the key objections to canned salmon by non-users are that it has a strong smell and is inconvenient, due to bones and skin, and therefore of low appeal to consumers.

At the distributor level, the perception is that canned salmon suppliers and producers do not aggressively market their product, and that operators have a low interest in buying canned salmon. An additional problem is the fact that distributors generally demand higher margins for canned salmon than for other types of canned seafood. Margins for canned salmon range from 10 to 35 percent, while tuna fluctuates from five to 20 percent.

In the current foodservice business, usage is limited to a few recipes—salmon patties, salmon loaf, salmon croquettes. Most canned salmon commercial usage is in small operations such as delicatessens and individually-owned coffee shops/family restaurants, which offer fewer fish entrees. Upscale restaurants that bake, broil and grill fish do not use canned salmon.

Conclusion

ASMI needs to educate upscale restaurants on Alaska frozen products versus imported farmed fresh salmon, as well as continue to expand frozen salmon in midscale restaurants and health facilities that are already familiar with the frozen product. Marketing efforts to increase menuing and usage of Alaska salmon need to target specialty, white tablecloth and family restaurants as well as the health care industry, as these segments represent large food volumes as well as opportunities to further increase the percentage of operators menuing salmon.

For canned salmon, operators need to be educated on the convenience benefits of the product, and given new recipe ideas and serving suggestions. Within the non-commercial segment, salmon burgers offer a large opportunity for schools. Within the commercial segment, family restaurants represent the biggest opportunity. As operator interest increases, so will that of the distributor. Foodservice distributors represent a small enough universe to make targeted marketing programs very effective.

In addition to its size, foodservice is an important market for both fresh/frozen and canned salmon because many consumers try different seafoods for the first time at restaurants. Further developing this market can increase home consumption.

COMPETITION

Competition for fresh/frozen—farmed is biggest threat

As farmed salmon quickly expands to a substantial share of the world's salmon production, Norway, Canada, and, to a lesser degree, Chile are Alaska's primary competitors in the fresh segment. Domestic producers, primarily Washington and Maine, also produce farmed salmon but collectively represent only eight percent of the domestic market and have been relatively stable since 1985.

While imports represent just 17 percent of total U.S. salmon consumption, they now have 26 percent of the fresh/frozen market. Share gains for these imports have directly impacted Alaska's market share. Marketing efforts must consider foreign-farmed competition as they have quickly captured a dominant share of the domestic fresh/frozen market. Alaska still dominates the domestic salmon market supply; therefore, increasing total consumption should be an additional priority.

COMPETITIVE MARKETING STRATEGIES

Norway's efforts focus on trade

The following foreign marketing programs may lend insight into how to compete effectively.

Norway: Overall, extensive marketing efforts consist of trade-directed programs, including co-op advertising, trade incentives, public relations, and trade print advertising to raise awareness of the quality and availability of Norwegian salmon. Programs are all built around fresh salmon. Trade education efforts are aimed at improving retail and foodservice perceptions of quality control and selling techniques through recommendations to buy Norwegian fresh salmon. The retailer co-operative advertising program is aimed at securing trade featuring. The following highlights Norwegian strategies:

Importers/Distributors

- Launch Norway "identification" program via trade shows, newsletters, trade advertising.
- Educate trade media on issue of emergency handling of fresh salmon.
- Build Norway awareness/education by providing materials free or at cost—e.g., brochures, aprons, press kits, menus, videos.
- Offer two price promotions during 1990.
- Arrange for Norway Sales and Marketing Council (NSMC) speakers.
- Produce three videos to educate the trade on Norway's quality control.

Supermarket Trade

- Advertise in trade magazines.
- Emphasize value-added products, quality control and availability through editorial contact.
- Put together a training package with quality videos and "How to Sell Norwegian Salmon" training courses.
- Establish a Norwegian Sale concept including advertising and point-of-purchase materials with a flagship supermarket chain.
- Send invitations to seafood buyers at "pro-Norwegian" restaurants where chefs sell the concept of the "most asked for."
- Participate in FMI, Food Marketing Institute trade show.
- Set up a co-operative advertising program at three percent retailer purchases; NSMC matches 50 percent of retailer's advertising costs.

Foodservice

- Trade magazine advertising and systematic editorial contact.
- Direct mail to promote quality and availability benefits.
- Seminars
- Restaurant newsletter for recipe, kitchen concepts, new restaurant information, etc.
- Initiate and sponsor chef seminars.
- Promote "Norwegian salmon weeks" with hotels and restaurant chains and exporters.
- Waitperson education program to develop recommendations and preference.
- National Restaurant Show participation.

Public Relations

- Video news releases to increase awareness of farming, quality control, and preparation targeting public television channels.
- Norway invitations to consumer press.

Canada: No apparent marketing efforts in the U.S. All efforts appear to target foreign markets such as Australia and France.

Chile: Trade magazine advertising targeting retailers, in addition to distribution of retail recipe booklets. Public relations events (e.g., at Trump Castle) to demonstrate recipes and gain editorial media coverage. No foodservice, consumer awareness or brand preference-building efforts.

Scotland: Limited regional efforts support Atlanta and Denver markets with consumer-directed radio, newspaper and magazine advertising. Retail trade-directed newsletters, point-of-sale materials and price promotions. Recipe cards and in-store demonstrations educate consumers and encourage trial usage.

Conclusion

Norway's plan does not include consumer-directed education and preference-building efforts. Instead, their strategy lies in gaining consumer acceptance through trade for recommendations. Alaska has the opportunity to target both the trade and consumer to build preference for Alaska salmon and build category consumption. Plus, Alaska can take the lead before foreign competition, such as Canada, begins to market aggressively in the U.S.

COMPETITION FOR CANNED SALMON

Limited within salmon category— tuna, other proteins are bigger issues

Although currently there is limited canned salmon competition from imports (less than 2 percent of the domestic supply), significant competition from other protein sources include canned tuna, canned chicken and convenience-oriented, value-added turkey and chicken products.

Tuna is a sizeable competitor. As seen in the chart below, per capita consumption has increased over the past few years and is 10 times greater than canned salmon (3.9 pounds per capita versus salmon's 0.3 pounds).

Canned Seafood Consumption Per Capita (pounds per capita)

	1985	1986	1987	1988	1989
Tuna	3.3	3.6	3.5	3.6	3.9
Salmon	0.5	0.5	0.4	0.3	0.3
Sardines	0.3	0.3	0.3	0.3	0.3

Source: National Marine Fisheries Service

Other proteins outspend salmon

Other protein alternatives to both canned and fresh/frozen include beef, chicken, turkey and pork. Because salmon competes for consumers' protein choices, these should be viewed as competition. In an effort to increase consumpt'on of their respective products, industry councils are aggressively pursuing consumers. Heavy advertising spending on both national and regional levels has helped to hold the consumption of pork steady, but has not boosted beef consumption. Beef, however, is still served by more households and more often than poultry or seafood. While salmon is significantly more expensive than these other alternatives, it has been minimally supported with advertising to educate consumers as to its value.

Advertising Spending and Consumption

	Advertising Spending ($Mil.)			U.S. Consumption per Capita (lbs.)		
	1988	1989	1990 Est.	1988	1989	Chg.
Beef Council	na	$27.0	$28.0	72.6	66.7	-5.9
Pork Council	6-7.0	6-7.0	7.0	63.0	62.8	-0.2
Poultry	-	-	-	81.7	83.6	+1.9
Dairy Board	58.0	58.0	58.0	na	na	na
U.S. Seafood Council	-	-	6.5	15.2	15.9	+0.7
Alaska Seafood/Salmon	1.0	1.1	1.3	0.8	1.5	+0.7

Source: Leading National Advertiser, Broadcast Advertising Reports, Frost & Sullivan, California Beef Council, National Broiler Council, National Beef Council.

Value-added products offer more competition

With the introduction of branded, value-added turkey products and the transformation of turkey from a seasonal to year-round item, consumption has risen from 13.3 pounds in 1986 to 16.9 pounds in 1989 (USDA). This increase is due in parı to the use of turkey products in patties and burgers, and pre-cut conveniently sized portions.

Similarly, chicken producers are developing a number of convenience-oriented, value-added products such as chicken breasts in marinated seasoning packets from Hormel and Foster Farms, seasoned breasts and drumsticks from ConAgra, and pre-packaged, roasted chicken breasts from Tyson. These trends continue to keep chicken and salmon in competition.

COMPETITIVE SPENDING

Norway outspends on per pound basis

Foreign competitive efforts are focused on salmon exclusively in contrast to Alaska's all seafood species approach. As a result, Alaska's salmon marketing impact is diluted and much lower than Norway's on a spending-per-pound basis. The following compares Norway's salmon with Alaska's all-seafood spending:

U.S. Marketing Spending Per Pound of Salmon (1990)

	Marketing Spending ($Mil.)	U.S. Salmon Supply (lbs.)	$ Spending/Pound
Alaska	$3.7 (All Seafood)	370,240,000	$0.01
Norway	$1.5	30,059,000	$0.05
Chile	na	4,593,000	na
Canada	-	44,993,000	0

Source: Norwegian Salmon Marketing Council, National Marine Fisheries Service

Pricing

Seasonal Alaska salmon is at a disadvantage

Pricing within the domestic salmon category is volatile. Many factors influence the pricing of fresh, frozen and canned salmon as well as species within each of these segments, such as the size and species mix of annual ocean-caught harvests, supplies of farm-raised fish, foreign market demands (particularly in Japan where prices tend to be premium to domestic markets), as well as processor and distributor inventories and anticipated future harvests.

Marketing distribution channels are complex, with many processors and middlemen that affect end-user pricing. The following chart compares average wholesale price trends per pound during the summer Alaska season.

"In Season" July (6-9lbs. Chum, Coho, Sockeye; 11-18 lbs. Kings; 2-4 lb. Pinks)

	1986	1987	1988	1989	1990
Atlantics (Norway 5-6kg.)	3.55	5.75	5.60	3.60	4.35
Farmed Coho (Canada)	na	3.40[1]	4.35	2.70	3.60[2]
Wild Coho (Fresh)	2.10	2.60	3.65	2.25	2.30
Wild Coho (Frozen)	2.05	2.45	3.75	2.40	na
Farmed King (Canada)	na	4.40[2]	4.25	2.80	3.15
Wild King (Fresh)	2.15	3.25	3.95	3.05	2.90
Wild King (Frozen)	1.90	3.60	4.30	2.00[3]	na
Sockeye (Fresh)	2.90	3.15	4.40	3.50	2.60
Sockeye (Frozen)	3.00	3.35	4.80	4.75[2]	na
Chum (Fresh)	1.45	1.60	2.65	1.70	1.55
Chum (Frozen)	1.40	1.50	2.70	1.30	na
Pink (Fresh)	na	1.20	na	1.10	1.10
Pink (Frozen)	.80	1.15	1.65	na	na

[1] *March 1987 prices* [2] *April prices* [3] *September 1989 prices*

Fresh imports have advantage in winter and spring

In-season, Alaska salmon is available fresh and has a price advantage over foreign competition. Another advantage is that little competition exists for sockeye, chum and pink during this period. When Alaska salmon is not readily available, prices for frozen Alaska coho are higher than Canada fresh, yet have an advantage over Norway fresh Atlantics. While Alaska can offer a wide variety of species in frozen form, imports have the decisive advantage of being able to supply fresh salmon during most of the winter and spring (see next chart).

"Off Season" February (6-9 lbs. Chum, Coho, Sockeye, Pink; 11-18 lb. Kings)

	1986	1987	1988	1989	1990
Atlantics (Norway 5-6 kg.)	4.35	4.65	5.20	4.35	4.20
Farmed Coho (Canada)	na	3.40	4.20	3.90	3.50
Wild Coho (Fresh)	2.10	3.75	na	-	3.50
Wild Coho (Frozen)	1.80	2.45	3.65	3.35	na
Farmed King (Canada)	na	4.00	4.15	4.05	3.80
Wild King (Fresh)	4.75	3.75	na	-	3.50
Wild King (Frozen)	1.70	2.65	3.70	3.55	na
Sockeye (Frozen)	2.90'	2.90	3.80	4.75	na
Chum (Fresh)	1.60	2.40	1.60	2.25	na
Chum (Frozen)	1.40	1.30	2.55	1.85	na
Pink (Frozen)	1.05	1.25	1.75	2.05	na
November Prices					

(NOTES: When a different month is used—other than July or February—it is closest month quoted by Urner Barry. NA is not available primarily due to fact that inventory was exported so quickly, Urner Barry did not track prices.)
Source: Urner Barry Publications

Alaska fresh below competition, when available

As seen below, the average price per pound for Alaska fresh salmon has remained below foreign competition when it is available. This is further evidence that market share gains for imports are a result of the availability of fresh salmon on a year-round basis, despite their pricing disadvantage.

Price per Pound (July)—Domestic vs. Norwegian

	Fresh Troll-Caught Coho (4 to 6 lb. FOB Seattle)	4 to 5 Kilo	Norwegian Fresh Difference
1987	$2.20	$5.20	-$3.20
1988	3.50	5.20	-1.70
1989	1.85	3.50	-1.65
1990	2.60	4.25	-1.65

Source: Urner Barry Publications

Conclusion

Despite higher wholesale prices, imports have still achieved significant volume and market share gains into the U.S. market. Foreign producer advantages and product benefits such as the availability of fresh salmon on a consistent, year-round basis have resulted in market gains. Alaska producers are at a disadvantage during November through May when fresh fish is not available.

TRADE FEATURING LENT PROMOTION BOOSTS CONSUMPTION

Trade featuring has a significant impact on retail consumption of canned salmon. For example, during the promotional period for Lent in February/March 1990, featuring increased from its annual average of 15 percent to 40 percent of all retailers featuring canned salmon. Consumption for this period increased 58 percent over the prior year in contrast to an annual average increase of 45 percent. Canned salmon prices were eight percent to 14 percent below average during the February/March period. From October to December, featuring levels dropped to 11 percent, and prices increased as a result.

Canned salmon prices at the retail supermarket averaged $2.77 per tall can of pink salmon in 1989. Pricing for pinks fluctuated from $3.40/3.74 during the September/October period to $2.38 during the peak Lenten promotional period in March. Prices for the remaining months were relatively stable.

Canned Salmon Pricing/ Impact of Retail Featuring (Index vs. Average)–1990

	Average Retail Price 48 Oz. Pink Talls		% Retail Featuring	% Chg. Consumption vs. Year Ago
February	$2.55	(92)	19%	+58%
March	2.38	(86)	40	+1000+
October-December	2.99	(108)	11	+39
Annual Average	$2.77	(100)	5%	+46%

Source: Nielsen Marketing Research 8/90

Conclusion

Canned salmon consumption can be boosted by increasing trade featuring. One way is to increase trade featuring through more frequent canned salmon promotions throughout the year.

TRADE PERCEPTIONS

Farmed seen to have many benefits
While price is not perceived to be an issue for wild salmon (many see it as having a price advantage over farmed), lack of consistent supply, availability and quality level are key trade concerns. Most view the quality of farmed fresh salmon as consistently higher than wild fresh salmon. The trade prefers fresh farmed salmon to frozen wild salmon because of its availability and consumer preference. For the most part, only specialty fish retailers currently perceive wild salmon as offering a taste advantage over farmed salmon. Others perceive that taste is essentially the same for both.

Trade perceptions have been summarized in a study entitled "How Do the Checkbooks Vote? A Review of Some Factors Affecting the Demand and Prices of Fresh/Frozen Salmon in the U.S." In it, Drs. Mittlehammer, Herrmann and Lin found the following:

"King, coho and sockeye remain competitive with imported Atlantic salmon through a price advantage. The Pacific species are losing the market battle with respect to:

- consistent quality;
- consistent supply;
- delivery time;
- shelf life;
- appearance (king and coho); and
- handlers having little or no experience with farmed salmon consider the wild-caught Pacific species superior in taste, texture and color to farmed salmon. However, increasing experience with farmed salmon changes opinion to the point where superiority is no longer clear-cut.

It seems advisable for fisherman and processors to research ways to mitigate the perceived advantages that farmed Atlantic salmon has over Pacific species. To remain competitive, maintain market share and support prices, attributes of Pacific species must be improved with respect to consistent quality, consistent supply, delivery time, shelf life and appearance."

Conclusion
Conflicting flavor perceptions among the trade between farmed fresh and ocean-caught fresh salmon, coupled with the fact that most consumers do not perceive a difference between farmed and wild salmon, suggests that ASMI must convince and educate the trade that fresh/frozen Alaska salmon is equal in quality to fresh unfrozen varieties.

FOODSERVICE PERCEPTIONS

Fresh is first consideration

The ASMI survey among restaurants found that farmed salmon is perceived to have excellent quality, while ocean-caught is thought to have good, but slightly lower quality. Farmed salmon has the edge due to its perceived consistent quality and year-round availability. Another study shows that foodservice operators prefer Alaska salmon over Norwegian, yet "fresh" is the most important factor.

% Operators Menuing Salmon Stating "Most Agree"	
I Prefer Fresh Salmon	37%
I Prefer Alaska Salmon	24
I Prefer Norwegian Salmon	20
I Prefer Farm-raised to Wild Salmon	4

Source: Restaurants & Institutions, Caravan Study 6/90

Conclusion

The key opportunity in the foodservice trade is to educate operators on the quality and freshness of fresh/frozen methods while creating stronger preference for Alaska-caught salmon.

EXTERNAL FACTORS—SEAFOOD INSPECTION

Alaska inspection a successful partnership of government and industry

Seafood quality is a prime concern of the U.S. consumer, as reports of a disproportionate number of seafood-related food-borne diseases are reportedto health authorities. Consumers are also becoming acutely aware of other factors affecting seafood such as ocean dumping, ocean burning, oil spills, shore development and acid rain. Unlike meat and poultry, fresh and frozen seafood are not subject to mandatory nationwide federal inspection.

Canada and Norway both have opted for a federally managed mandatory inspection program at the harvesting and processing levels. Norway is marketing its program to prospective buyers through extensive public relations efforts aimed at educating both the trade and consumer about the quality of their seafood. While research has shown that many U.S. consumers are under the impression that seafood in this country is under continuous mandatory inspection, this is not the case. Current thinking within the industry is that the U.S. will likely see mandatory seafood inspection in some form in the near future—it is not a question of whether it will happen, but when and what form it will take.

Alaska has what many in the industry consider to be a model seafood safety program. In order to process seafood in the state, a plan of operations must be submitted to the Department of Environmental Conservation's seafood division for review. A number of stringent criteria must be met to obtain *certified* approval to operate. The state is also a member of the federally managed Shellfish Sanitation Program and works closely with the National Food Processors Association (NFPA) to continually improve a voluntary strategy for safeguarding the canned salmon pack under the Canned Salmon Control Plan. This plan has the endorsement of the Federal Food and Drug Administration, the agency responsible for most of the seafood inspection conducted in the United States Seafood companies operating in Alaska have gone beyond these requirements by instituting their own quality control programs directed by trained seafood safety experts.

Conclusion

Programs like the NFPA have the potential to strengthen Alaska salmon quality perceptions among the trade and, if promoted, can create some perceived advantage over foreign imports.

SALMON CONSUMER

This section includes a detailed analysis of the domestic U.S. salmon consumer as understanding consumer demographics is key to increasing consumption. Marketing implications are presented throughout.

Salmon consumer demographics

In-Home Fresh/frozen Users are Upscale—Fresh/frozen salmon consumers tend to be slightly older than all-seafood consumers, with fewer children in these adult households. (Refer to next chart.) They tend to be more educated, having a higher percentage of college and post-graduate degrees, and hold occupations in professional, technical, managerial and sales fields. They command higher household incomes, particularly in the $55,000+ range.

In-Home Canned Users Are Older, Have Lower Incomes—Canned salmon users tend to be female and much older than fresh/frozen users. In fact, almost half (45 percent) are age 55 and older. They have fewer children and tend to be one-person households. Unlike fresh/frozen consumers, they are less educated; many are homemakers and retirees. Incomes are lower, with $35,000 as an average.

Restaurant Users Similar to Fresh—The restaurant salmon consumer shares a similar demographic profile to the fresh/frozen user, except in age where they are more similar to the all–seafood consumer (age 25–44).

Overall, they tend to be adult couples without children and are above average in college education. Incomes are higher ($45,000+), with occupations in the professional, technical, managerial and sales fields. Efforts to increase consumption should target all age groups 25+.

In-Home Users vs. Restaurant Users

	In-Home			Restaurant
	Fresh/Frozen	Canned	All Seafood Consumers	Order Salmon
Age of Head of Household				
18-24	6%	4%	7%	5%
25-34	25	11	25	23
35-44	20	21	25	26
45-54	18	16	15	16
55-64	16	23	12	14
65+	13	22	14	13
Household Income				
$25,000	17%	31%	25	16%
25-34,999	17	21	20	15
35-44,999	16	16	17	15
45-54,999	12	11	10	13
$55,000 +	26	10	15	28

Source: Market Research Corporation of America (MRCA) Menu Census, 8/90.

Conclusion

While increasing fresh/frozen usage among primary users (ages 35+) should be an ongoing effort, targeting the age 25 to 34 group could also further increase consumption. Targeting the younger consumer, ages 35 to 54, as well as the primary group (55+), can increase canned salmon usage.

Psychographics

Fresh/frozen users are successful/curious consumers

Fresh/frozen salmon consumers are divided into "actualizers" and "fulfilled". "Actualizers" are individuals with high self-esteem, leadership qualities and a wide range of social and intellectual activities. Image is important as an expression of independence and character. This segment is quality conscious and quick to try new products. The "fulfilled" consumers are mature, self-assured and well-informed. They are open to new ideas, seek challenges and are influential social leaders. Prestige and image are unimportant; they are practical consumers concerned with product function and value.

While specific psychographic profiles are not available for restaurant salmon consumers, we believe they have attitudes similar to in-home fresh consumers, as their demographic profile is much the same.

Canned users are older

Canned salmon consumers tend increasingly toward "empty nesters" and "grandpa/grandma" segments, but have well-below-average representation in "busy households" (working couples under age 55 with children) and "young/kidless" (couples over age 18 with no children).

Canned salmon usage could be significantly increased by targeting younger families and couples. Specifically, the large 25- to-44 age group represents a sizeable opportunity.

Seasonality

January-March strongest for canned/weakest for fresh/frozen

Most in-home canned salmon is consumed from January through March (39 percent) and October through December (28 percent). Canned salmon consumption is below average during April through September. Fresh/frozen salmon is consumed throughout the year. The following chart details in-home consumption seasonality:

% In-home Salmon Consumption

	Fresh/Frozen	(Index*)	Canned	(Index*)
January-March	20%	70	39%	134
April-June	23	115	17	85
July-September	26	113	16	70
October-December	31	111	28	101

**Index is the measurement versus average salmon eatings, 100 being average.*
Source: MRCA Menu Census

For Alaska salmon, there are two selling seasons: the "in-season fresh" period during the summer and fall harvest months; and the "off-season frozen" period from November through June. Farm-raised salmon has an advantage in that they are harvested and sold during Alaska's off-season.

Conclusion

Canned salmon consumption can be increased by targeting primary users (those ages 55+) throughout the year to encourage all-season consumption. Reaching sometime and new canned users (younger families ages 25 to 55) during the peak months of February through April can also be effective.

Fresh/frozen salmon consumption can be increased by augmenting awareness of its year-round high-quality availability, particularly during April through December among primary (more affluent, ages 35+) and secondary (ages 25 to 34) consumers.

Regionality

National marketing efforts are needed

All regions but the Pacific represent growth potential for fresh and frozen salmon; for canned, it's all but the West/South/Central and East/South/Central areas. A few regions could be "cross-developed". For example, canned salmon could be touted in the Pacific, which has well-above-average fresh/frozen salmon consumption. Conversely, the East/South/Central region, which has above average canned consumption (index 195), could use a boost in the fresh and frozen salmon market (index 36). See the following chart.

Regional Development - Salmon Eatings Index vs. Population

	Mature	Index	Development I	Index	Development II	Index
Fresh/Frozen	Pacific	295	West N. Central	168	East N. Central	27
			West S. Central	161	Mid Atlantic	70
			South Atlantic	168	East S. Central	36
					Mountain	32
					New England	26
Canned	West/ S. Central	196	South Atlantic	143	East N. Central	92
					Mountain	90
	East/ S. Central	195			Pacific	65
					Mid Atlantic	27
					West N. Central	22

Source: MRCA Menu Census
Index is regional consumption divided by national consumption; Index of 100 represents average consumption

The opportunity to develop consumption in additional markets is further evidenced by the fact that only 22 domestic U.S. markets have above or average consumption indexes for canned salmon (index 100 or above). Yet these markets represent only 48 percent of the canned salmon sales volume.

Canned Salmon Sales Volume (37-oz. cases)

	Mature Mkts.	Development II Mkts.	Development III Mkts.
# Markets	13	9	28*
% Canned Volume	29%	19%	11%

**Nielsen reported markets*
Source: Nielson Marketing Research, 8/90

Conclusion

Marketing efforts to increase both fresh/frozen and canned salmon consumption among current and potential salmon consumers should be national in scope, with heavier efforts targeting "development" markets.

Purchasing Habits

Restaurants top home consumption

Most consumers prefer to eat seafood at a restaurant (54 percent) rather than home (34 percent). The remainder say "both". The main reasons for restaurant preference is "they prepare it for you/ I enjoy eating out" (23 percent) and "it's properly prepared" (16 percent). The main reasons for in-home seafood preference is "I can prepare it the way I like" (18 percent). See following chart for other findings.

	Restaurant		Home	Both
Preference	54%		34%	9%
Reasons				
They Prepare/Enjoy Eating Out		(23%)	Can Prepare Way I Like	(18%)
Properly Prepared		(16)	Know It's Fresh	(6)
Makes the House Smell		(5)	Know What I'm Getting	(5)
Don't Like to Cook Seafood		(4)	Cheaper to Eat at Home	(5)

Source: Market Position/Tracking Study

Conclusion

Among those preferring to eat seafood at home, consumption is much higher than at restaurants. In order to increase salmon consumption, "ease of preparation" education must be aimed at the large population of current restaurant consumers.

Outlet Types for In-Home Purchases

Price not only factor in choice

Most fresh/frozen salmon for in-home use is purchased at supermarkets. The second choice, specialty fish markets, feature fresh, while all others sell both fresh and frozen forms. The primary reason for purchasing a particular seafood in a retail outlet is that it is a "favorite", followed by "in-store special". Over two-thirds of consumers purchase salmon for other than price-related reasons. See following chart for specifics.

Purchasing Locations and Behavior

Retail Store Type for Fresh/Frozen Salmon Purchases		Usual Reasons for Purchasing a Particular Seafood	
Supermarket	62%	Favorite	68%
Fish Market	23	In-Store Special	17
Live Market	2	Newspaper Ad	8
Takeout Restaurant	1	Other	7
Varies	12		

Source: U.S. Salmon Consumer Survey, 8/89/ Canadian Department of Fisheries and Oceans

Restaurant Types

Customers order their "favorite"

Most salmon is purchased at specialty seafood or other white tablecloth restaurants. Like retail, reasons for ordering seafood at a restaurant are that it is a "favorite" (69 percent), and the "restaurant's specialty" (13 percent). See following figures. According to the survey, waitperson recommendations or price considerations do not appear to influence purchase behavior. However, based on trade feedback, we believe waitperson recommendations do play an important role in seafood selection.

Restaurant Type for Fresh Salmon		Usual Reason for Ordering a Particular Seafood	
Specialty Seafood	39%	Favorite	69%
Other White Tablecloth	36	Specialty of Restaurant	13
Family	22	On Fresh Sheet	8
Ethnic	3	Daily Feature	6
Fast Food	0	Recommended by Waitperson	2
		Other	2

Source: U.S. Salmon Consumer Survey/Canadian Department of Fisheries and Oceans, 8/89

CONSUMER AWARENESS OF SEAFOOD–PRODUCING REGIONS

Alaska as a region lacks high awareness

Generally, consumer awareness is low regarding all seafood-producing regions. When asked, "Which seafood region first comes to mind?" New England (17 percent first mentioned/28 percent total mentioned) tallies higher than Alaska (7 percent first mentioned/23 percent total mentioned), California (7 percent first mentioned/21 percent total mentioned) and the Gulf of Mexico (5 percent first mentioned/21 percent total mentioned).

When asked, "When you think of fresh salmon, what country or region outside the lower 48 comes to mind?", consumers have a greater awareness of Canada than Alaska as a salmon producer. (See following chart.) Although Norway has less awareness among consumers, it is well-recognized among the trade who, we believe, will educate consumers over time. Also, Norway has launched an on-package, point-of-sale campaign to increase awareness of Norway as a salmon producer.

Consumer Awareness of Seafood Producing Regions

	% total mentioned
Canada	37%
Alaska	28
Norway	9
Japan	7
Others	3% or Less Mentioned

Source: U.S. Salmon Consumer Survey/ Canadian Department of Fisheries and Oceans, 8/89

AWARENESS OF DIFFERENT SEAFOOD

Shrimp, lobster and tuna top salmon

On a first-mentioned basis, consumer awareness for salmon is also low at only five percent. Specifically, when asked, "What seafood first comes to mind?", shrimp, lobster and tuna are mentioned—in that order—more readily than salmon. (Refer to following chart.) Salmon is, however, a recognized seafood (80 percent have heard of fresh or frozen salmon; 88 percent have heard of canned salmon).

% Consumers Aware

	First Mention	Total Mention	Aided
Shrimp	28%	60%	N/A
Lobster	14	45	N/A
Tuna	7	27	N/A
Fresh Salmon	5	19	80%
Crab	4	18	78 (King Crab)

Source: Market Position/Tracking Study, 5/90

Overall, there is a minimal consumer awareness about different species of salmon. Even among consumers who are familiar with the names of a few salmon species, there is little knowledge of specific attributes and differences between each. Canned salmon consumers, however, have some slight species awareness, since red, sockeye or pink are specified on the labeling. Red is considered to be better and more flavorful, and more expensive, than pink.

Conclusion

Salmon is familiar to most consumers, but is not readily remembered when it comes to choosing seafood. Awareness of Alaska as a major producer of salmon needs to be heightened to strengthen Alaska salmon's positioning among consumers. Before the advantages of Alaska salmon over competitors can be effectively communicated, awareness needs to reach at least a 50 percent level.

AWARENESS OF FARMED SALMON

Wild salmon has positive image/ farmed image is mixed

Overall, there is confusion over the perceived benefits of farmed salmon. Based on focus group research and the Canadian Department of Fisheries and Oceans U.S. Salmon Consumer study, consumer awareness for farmed salmon is relatively low (26 to 41 percent are aware in New York and San Francisco, respectively). More than two-thirds of consumers do not perceive farmed to be different than wild salmon, despite the fact that wild salmon, such as Alaska, feeds off natural stocks, while farmed fish are raised on pellets and chemicals. Further, among those who are aware of farmed, there are confused notions—some positively perceive both farm-raised and ocean-caught as being "natural and healthy", but others believe farm-raised to be artificial and chemically tainted. See following chart.

Consumer Perceptions

	Ocean Caught	Farm-Raised
Positives	Natural/Healthy	Natural/Healthy
	Cold Clear Waters	Clean Waters
	Fresh	Fresh
	Untainted	Untainted
	Alaska-Big	Controlled
		Word "Farmed"
		Cheaper
	Ocean Caught	rm-Raised
Negatives	Frozen	ontrolled
	Wild	Artificial
	Expensive	Chemicals

Source: ASMI Focus Group Research, 1990.

Conclusion

Consumer awareness and acceptance of farmed salmon is likely to continue to rise due to active trade acceptance and promotion touting its fresh aspect. Building consumer awareness and preference for Alaska salmon is crucial now as a strong defense against this competitive pressure.

CURRENT AWARENESS CAMPAIGN

Advertising boosts Alaska awareness

Overall, 1990 advertising focusing on the theme of "Alaska Seafood, Far and Away, the World's Finest" has increased consumer awareness of Alaska seafood as well as perceptions of Alaska as the "best seafood" producing region.

As the following chart indicates, when compared to pre-advertising period levels, Alaska was mentioned more often (23 percent versus 17 percent pre-advertising). Alaska was also mentioned more often as "the region for best seafood" (11 percent versus 8 percent pre-advertising). While advertising focused on all types of Alaska seafood, awareness of salmon increased dramatically from 9 to 31 percent, and those who are aware are twice as likely to have purchased Alaska seafood as those who are not.

% Consumers First-Mention

	Pre-Advertising (12/89)	Post (4/90)
Alaska Seafood	17%	23%
Alaska Seafood Advertising	11	15
Alaska as "Best Seafood" Region	8	11

Source: Market Position/Tracking Study, 5/90

Conclusion

The current Alaska all-species advertising approach has helped to increase awareness, but it is still low. A separate, focused effort highlighting salmon can build awareness levels and consumer preference for Alaska salmon.

CONSUMER ATTITUDES AND USAGE

Household penetration— less than half of households eat salmon

While nearly all households consume some fish or shellfish (MRCA estimates 99 percent), salmon is consumed in only 40 percent of households. Tuna figures are much higher, with an estimated penetration of 98 percent. (See following chart.) Targeting households that consume fish but not salmon represents a major opportunity.

	% of Eatings (all foods)	Household Penetration
Tuna	36%	98%
Fish Sticks	8	29
Shrimp	7	40
Salmon	5	40
All Other Seafood	13	N/A

Source: MRCA

FREQUENCY OF USE

Salmon consumers big seafood eaters

Salmon consumers eat seafood more often than non-salmon seafood consumers. Two-thirds of fresh and frozen salmon consumers eat seafood once a month or more, and about one-third eat it once a week or more. By contrast, about half (44 percent) of the non-salmon seafood consumers eat seafood once a month or more.

Salmon consumers also eat seafood at restaurants more often; two-thirds (63 percent) eat out at least once a month compared to 44 percent for non-salmon seafood consumers. While salmon users eat seafood more frequently, salmon is eaten infrequently compared to other fish.

Conclusion

It would be beneficial to encourage upscale non-salmon seafood users to try salmon as a substitute. Additionally, fresh and frozen salmon consumers should be encouraged to eat salmon more often.

REASONS FOR USE

Non-salmon users think it's expensive

Most salmon consumers eat fish and seafood for taste and health/nutrition reasons. However, among non-salmon seafood consumers, these benefits are rated lower, and salmon is perceived to be more expensive compared to other seafoods and meats. (See following chart.)

Reasons for Eating Fish/Seafood		Attributed Rating for Fresh/Frozen Salmon (1=disagree, 10=agree)	Salmon Users	Non-Salmon
Like the Taste	39%	Salmon Has High Nutrition	8.1	6.8
Health/Nutrition	36	Is Easy to Prepare at Home	7.9	5.9
Adds Variety to Diet	15	Mild, Delicate Flavor	7.5	5.3
Makes Light Meal	4	Has Few Bones	7.1	5.8
Easy to Prepare	3	Attractive Appearance	6.5	5.2
Good Value	1	Undesirable Fish Odor	6.4	4.9
		Consistently High Quality	6.3	5.2
		Is Readily Available	6.1	5.5
		Inexpensive vs. Other Seafood	4.3	4.1
		Inexpensive vs. Other Meat	4.2	4.0

Source: U.S. Salmon Consumer Survey; Canadian Fisheries

Conclusion

Marketing and communications efforts must present salmon as a value that offers taste and nutrition well worth the extra cost. Additionally, aggressive promotional programs to gain trade featuring support (for frozen salmon in particular) can strengthen value perceptions.

IN-HOME PREPARATION

Fresh salmon for dinner, canned for lunch

Salmon is considered to be appropriate for a family meal, not just "special occasions." Most is consumed during the week (78 percent), and typically eaten by family members rather than guests (88 percent family only). Dinners account for most usage (74 percent), followed by lunches (20 percent) and breakfasts (6 percent).

Canned salmon is used mostly at lunch, while fresh is used more for dinners and on weekends. Canned salmon is usually considered an ingredient and fresh/frozen a main dish.

For fresh/frozen, broiling (37 percent) and baking (27 percent) are the most common methods of preparation, followed by poaching (10 percent), frying (9 percent) and barbecuing (9 percent). Few use a microwave for preparation (5 percent).

Conclusion

Consumers need to be educated on how to prepare canned salmon to encourage dinner and main dish usage. Stressing its convenience and providing recipes can also attract non-salmon users. Fresh/frozen consumption can be increased by touting weekday family and weekend use, as well as providing microwave cooking instructions for preparation convenience.

FRESH AND FROZEN VERSUS CANNED USAGE

Fresh/frozen users not canned users and vice versa

Fresh or frozen salmon is eaten four out of 10 times within the in-home segment (37 percent). Consumers prefer fresh over frozen—four out of five purchases are fresh. Canned salmon represents about half (53 percent) of total in-home salmon eatings, while other forms, including smoked salmon, represent 10 percent. The following chart details consumption and purchases:

% of In-Home Salmon Eatings*		% Purchased Most Often In Retail Outlets			
Canned	53%	Fresh Steaks	39%	Frozen Fillets	11%
Fresh/Frozen	37	Fresh Fillets	30	Frozen Steaks	6
Other	10	Fresh Whole	10	Frozen Whole	2
	100%	Total Fresh	79%	Total Frozen	19%

*Source: MRCA

*Source: U.S. Salmon Consumer Survey; Canadian Fisheries; totals of fresh and frozen combined less than 100 percent due to excluding 5 percent prepared entrees

Consumers do not usually use both fresh and canned salmon. Eighty percent who use fresh or frozen salmon do not tend to use canned, and 74 percent of canned users do not tend to use fresh or frozen forms. (See chart below.)

% Using Other Forms

	Fresh Users	Canned Users
Fresh	80%	15
Frozen	11	3
Canned	2	74
Smoked	-	-

Source: Market Position Tracking Study 5/90

Conclusion
Marketing efforts must target each of these user groups separately.

ATTITUDES TOWARD CANNED SALMON

Users/non-users have different perceptions
Consumers who prefer canned salmon consider it to be nutritious, healthy, convenient and an "old family favorite". Those who do not use it see it as an expensive ingredient that can be substituted by tuna, and as a product with an out-of-date image, according to ASMI focus groups. Additionally, non-users do not appear to recognize the health benefits of canned salmon.

ATTITUDES TOWARD FRESH VERSUS FROZEN SALMON

Consumers prefer fresh
Consumers have a strong preference for fresh over frozen salmon. This is due to the belief that freezing adversely affects the flavor and texture. As salmon is viewed as having a short shelf life, freshness is a very important attribute at the retail level and at home. Most believe the salmon they buy is fresh, not previously frozen, since much of frozen is thawed.

Most salmon purchases are in fresh form and consumed the same day. If not, some consumers will freeze it for later use.

Conclusion
Overall, consumers do not believe frozen or previously frozen is as good as fresh salmon. But positive, limited consumer feedback on the concept of freezing "within hours of catch to lock in flavor" suggests that this should be further explored. Further evaluation of positioning statements is needed. The current, most frequently used statement "previously frozen" is strongly rejected by consumers as it connotes staleness and an alternative, "frozen for top quality," contradicts consumer perceptions.

Canned salmon needs to be positioned as an ingredient for contemporary recipes, as well as a healthy choice, among both nigh and low consumption targets.

PERCEPTIONS OF ALASKA SALMON

Alaska seafood enjoys positive image

Where awareness of Alaska salmon exists, consumers are positive about the association between Alaska and salmon—i.e., the pure, clean waters of Alaska and a high-quality, better-tasting product. It is perceived as more expensive, which reinforces a quality image but may also be considered a drawback to some non-salmon users.

Consumers believe Alaska seafood to be different from that of other places: it "tastes better" (22 percent) and "is fresher" (21 percent). The current advertising campaign is building on these positive perceptions and we believe these associations with Alaska seafood carry over to Alaska salmon.

First-Mentioned Impressions of Alaska Seafood	Rank	How Is Alaska Seafood Different From Other Places	Pre-Advertising	Post-Advertising
Salmon	1	Tastes Good/Enjoy It	22%	22%
Crab	2	Fresh/Fresher	21	
Good Quality	3	Good/Better Quality	7	8
Freshness	4			
Expensive	8			
Cold, Clear Waters	10			

Source: Market Position Tracking Study 5/90

Conclusion

Marketing efforts should leverage Alaska's favorable image through continued consumer-directed advertising. Reinforcing the belief that Alaska seafood is superior will protect consumer demand for Alaska's salmon against increasing foreign farmed salmon competition.

NON-USER PROFILE—VERY YOUNG OR OLDER

Those who do not eat salmon tend to be under age 18 or over age 65 and fit into the "young single" and "young kidless" lifestyles. (Users fit the "empty nester" and "grandpa/grandma" profiles.) Like salmon users, non-user households have fewer children; they also tend to be less educated.

Pockets of non-salmon users do exist in higher-use areas. Specifically, the Pacific, South/Atlantic and West/North/Central regions have a high presence of both salmon users and non-users.

Conclusion

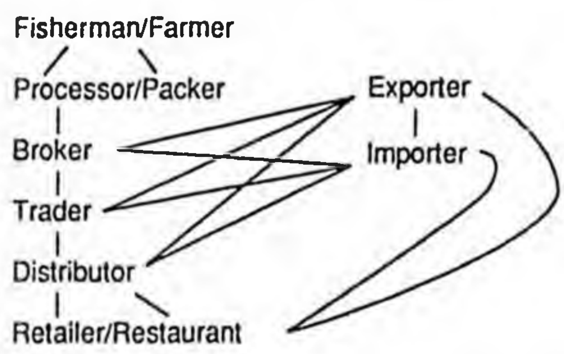
Once consumption of Alaska salmon among current users (canned and fresh/frozen) has been significantly increased, non-users represent a strong opportunity, requiring specific programs to address their needs.

DISTRIBUTING AND SELLING SALMON

Multi-layered system leaves marketing up to individual companies

The system that moves salmon from catch to end-user is complicated. Processors, importers, brokers, traders and distributors are involved in a structure that demands flexibility, since the distribution from fisherman/farmer to end-user is not a linear process. Each layer can, and often does, bypass the consumer to take on a different distribution flow. Businesses can also change roles—i.e., distributors may also be brokers, and vice versa.

Salmon Distribution Flow



Even though minimum attention to seafood is given by the retailers, seafood's profitability is still impressive. Once salmon arrives at the supermarket, most of it is sold in seafood departments adjacent to meat departments by personnel trained in the meat department. The majority of retailers say that seafood counters are necessary to build the overall image of the store, but the benefits appear to go beyond seafood-as-image. Seafood counters now account for 4.5 percent of total retail profits, according to *Seafood Leader*.

"Branding" of fresh/frozen is difficult

Within this complicated distribution channel, the focus is on pricing and moving salmon inventories. As with other commodities where there is no "brand label", seafood brokers, distributors, importers and traders are not in the business of marketing "brands" of fresh/frozen salmon. Any marketing support through the channel is generally for canned salmon by manufacturers and their assigned broker network. Unlike canned salmon, where each processor promotes his respective brand, there are no established brands in fresh/frozen. As a result, there is no "consumer link" or identification between the product at the point of sale and its origin or "brand".

Commodities use sales force to "brand" product

While ASMI's promotions have been readily accepted by the trade, promoting Alaska as an origin to build brand identity and value will require a more broad scale point-of-sale program. To ensure the execution of these programs through retail and foodservice channels, other commodity councils rely on four to five field sales personnel.

Below is a list of other commodity groups and the sales forces they each employ.

Sales Force Comparison

California Strawberry Board	5 regional reps
California Cling Peach	5 employed regionally; 1 Canadian
New Zealand Kiwi Fruit	5 regional reps - subcontracted via rep firm
California Iceberg Lettuce Commission	4 employed regionally
Idaho Potato Commission	4 regional merchandising reps
California Olive Industry	2 employed nationally
National Pork Producers	1 nationally

Establishing a sales force has allowed these commodity groups to maintain/increase point-of-sales presence in a majority of the stores/restaurants of the major retail and foodservice chains throughout the United States. The point-of-sales presence of these commodities has been accomplished by fulfillment of the following standard sales force responsibilities:

- Contact key decision makers at chains with a market share of at least 5 percent and notify them of the point-of-sale programs and materials available; encourage them to advertise and properly display product and point-of-sale materials during promotional periods.

- Provide a report for each chain contacted, detailing the reaction of the retailer to promotional programs and POS materials.

- Report any significant trends or market changes mentioned by key contacts.

- Check stores in each market and report back:
  - price of their product and competitive product;
  - promotional activity;
  - brands carried;
  - display position;
  - display size;
  - point-of-sale being used; and
  - comments

Creation of an AMSI sales force to fulfill similar responsibilities to those described above would result in an ASMI point-of-sale presence to ensure that an "Alaska" brand identity and high quality/value are communicated to the consumer.

Conclusion
To create added value and a preference for Alaska salmon, there must be origin identification and promotion at the point of sale. To ensure these programs are implemented fully, a national sales/marketing force is recommended.

MARKETING STRATEGIES

The following recommends key marketing strategies that address core issues, obstacles and opportunities to increase domestic salmon consumption. These strategies prioritize marketing resources and set direction for developing specific marketing programs.

Overall marketing objectives

- Establish a quality and value leadership position for Alaska salmon in all market segments—fresh/frozen, canned, foodservice and retail.
- Achieve quality, value leadership and volume growth by:
  - building a preference for Alaska salmon while developing an acceptance for frozen salmon among all trade segments and end-use consumers;
  - revitalizing retail and foodservice consumption of canned salmon; and
  - increasing overall domestic usage of Alaska salmon.
- Increase total awareness of Alaska salmon from its current 19 percent to 33 percent.

Key strategies:
Positioning

Consumer: Educate the consumer as to the high quality of Alaska salmon, unequalled in flavor because it is ocean-caught. This flavor difference supports frozen forms because it is "fresh frozen" to capture flavor, and canned because it is "packed" to capture the natural flavor.

Trade: Build confidence among retail and foodservice trade that the exceptional flavor of Alaska salmon adds value which enables premium pricing and maximum profitability.

Product: Educate retail and foodservice trades on the species and benefits of the natural Alaska salmon product line.

Merchandising

Identify and associate Alaska salmon with natural flavor, freshness and quality at the retail point-of-sale and on foodservice menus.

Advertising

Build consumer awareness for Alaska salmon via year-round national media that:

- targets all salmon users—fresh, frozen, canned and restaurant;
- targets primary as well as secondary users to build usage;.
- provides regional efforts in development markets; and
- delivers preparation tips and recipes to foodservice and retail consumers.

Promotion

Consumer: Increase trial and usage of Alaska salmon through promotion that:

- educates consumers on additional uses for canned salmon, and delivers preparation ideas for fresh and frozen salmon; and
- communicates health benefits of Alaska salmon.

Trade: Maximize trade featuring/menuing and in-store merchandising of consumer-directed promotions. Target all retail and key foodservice segments that offer maximum growth opportunity: specialty, white tablecloth, family restaurants, and the health care industry.

Public relations

Educate consumers and trade on the acceptability and advantages of frozen salmon, while encouraging increased usage through preparation ideas and recipes.

Spending

Allocate budgets year-round at levels that increase total Alaska salmon consumption by effectively changing consumer and trade perceptions.

FOREIGN MARKET ANALYSIS

OVERVIEW

Leading markets will maintain control

The major salmon markets are in the northern hemisphere—specifically Japan, the U.S., Canada, and western Europe. Potential markets exist elsewhere, but these four large salmon markets still will dominate at the end of the next decade.

Demographics

Forces within these major markets will bring changes that challenge salmon marketers. These forces include consumption patterns; nutrition and health concerns; quality; and population dynamics that include population size, growth, income, aging, household sizes and other demographics.

Price

The most important variable in the salmon markets is price. Production will help set prices, as will quality, packaging and product forms.

Technology

Also at play in the next decade's market equation is improved technology—both in the capture of wild and ranched salmon and in the production of farmed salmon. Researchers are reviewing traditional pen technology. Other scientists are altering feed compositions to custom produce salmon for specific market niches (increasing Omega-3 oils and producing specific flesh tints are two of the customizing techniques). One researcher predicts that consumers will be able to choose from a variety of customized salmon in the same way they select a wine.

Transportation

Transportation advances will change the markets. A review of the history of the salmon industry reveals a chronology of transportation improvements that have expanded salmon markets. Salmon has progressed from salted barrels to cans and from freezing to air shipments of fresh fish around the world.

Product form

Product form will play a major role in market changes. Shipment of whole fish, both fresh and frozen, will continue but value-added packaging of steaks, roasts, smoked, salmon mousse, dips and other products will affect markets. Canned salmon should continue to be a staple as well.

Other protein sources

Situations external to traditional seafood markets impact how salmon is sold and how much salmon is sold. The marketing efforts of competing protein sources (beef, pork, poultry and others) will help determine the parameters of the salmon markets.

As we review the foreign markets in this section, it is especially important to remember that what is true today will not necessarily be the case by the year 2000. Each of the above factors (demographic changes, pricing, packaging, transportation, product forms, harvesting technology) as well as others like diseases, global warming and other environmental factors will shape markets of the future.

The following market analysis of dominant salmon-consuming nations describes in general terms the industry and market changes that have occurred during the last several years and summarizes the views of some market observers about the future of the worldwide salmon markets.

JAPAN

Fishing, import and consumption leader: fish/seafood a Japanese staple

Japan is the world's largest fishing country, with domestic landings of 28,218 million pounds of seafood in 1988. Japan is also the world's largest importer of marine produce, with 1989 imports of 5,070 million pounds worth $10.5 billion. Japan, as the previous figures would indicate, leads the world in per capita consumption of fish and shellfish at 189.6 pounds per year.

The volume of fish and shellfish consumed, however, may be masking some demographic changes that have occurred during the past several decades. From 1974 to 1986, the average nominal family income in Japan rose more than 300 percent (real income increased about 47 percent). As the average family income increased, food expenditures also increased.

More Japanese dining out, eating pre-cooked; at home preparation/consumption stabilizing

Yet food as a *percentage* of the cost of living in Japan dropped from 32.2 percent to 25.5 percent during the years from 1974 to 1986. As the Japanese family has become better off, food expenditures have dropped from about one-third of the family income to one-quarter of the family income. Pre-cooked food rose from 3.6 percent of total food expenditures in 1970 to 6.7 percent in 1986 while eating out rose from 8.9 percent to 14.8 percent during the same period.

The highest expenditures on fish and shellfish are in the older age brackets (40-59) and expenditures on pre-cooked meals are roughly the same across all age groups. With the exception of the over–55 age group, the expenditures for eating out are significantly higher than expenditures for other food categories. Although consumers age 40-44 spend more on eating out than any other age group, consumers 25-29 spend the highest *percentage* of their total food expenditures eating out—nearly 20.1 percent.

Younger Japanese consumers spend more on pre-cooked food than do older Japanese consumers. As the current group of younger consumers mature, it should not be assumed that they will adopt the older group's consumption patterns.

The above consumption synopsis is from the *1986 Report on the Family Income and Expenditure Survey* as outlined in the April 1989 Canadian DFO study on the Japanese markets. The survey excluded one-person households which have dramatically different food expenditure patterns (for example, one-person households spend more than half their food expenditures dining out). When one-person households are included in the survey data, the tendency of younger people to spend a high percentage dining out is further reinforced.

When expenditures on salmon are expressed as a percentage of total seafood expenditures, it is shown that the under-24 age group spends the highest share on salmon. Although younger people eat seafood at home less frequently than older Japanese consumers, they prefer salmon when they do. This may be because salmon is sold cleaned and packaged into fillet portions that are easy to prepare.

There also is a strong regional preference for salmon in Japan. Hokkaido region residents consume nearly seven pounds of salmon per person. The region is the primary producer of chum salmon and fish is an important part of the regional diet. The Shikoku, Kyushu and Okinawa region residents consume less than one pound per person per year.

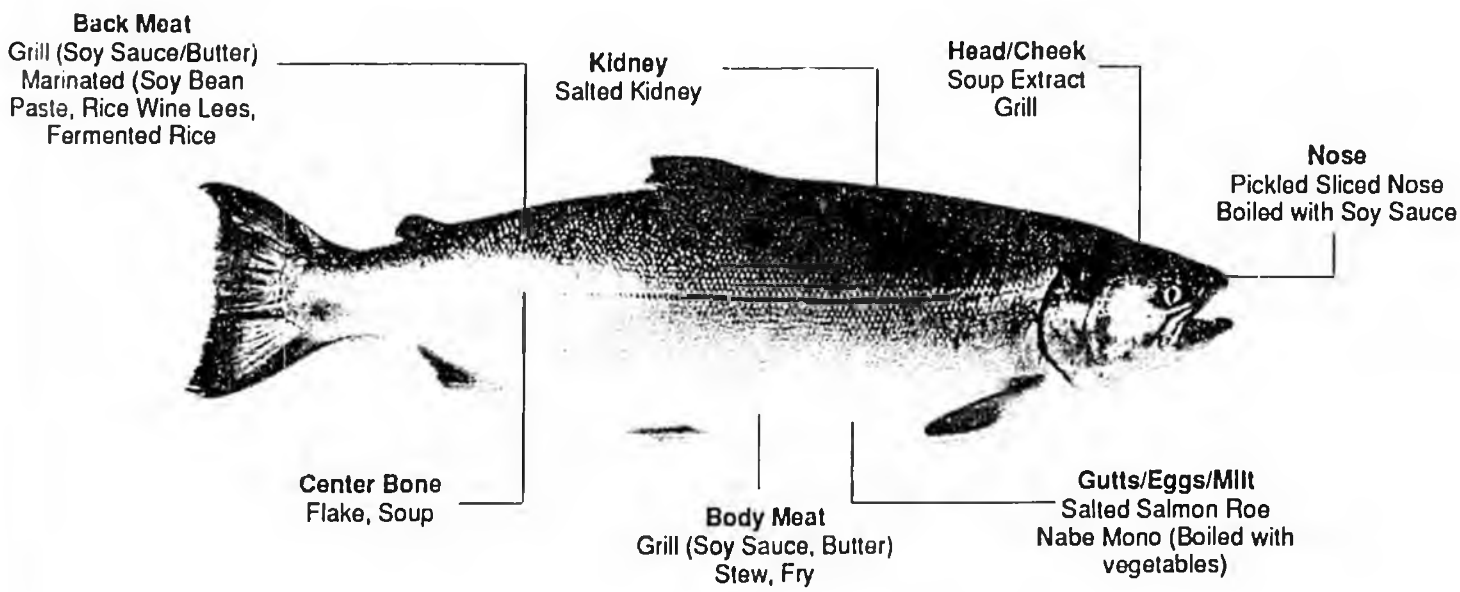
The DFO report suggests the Japanese consumer may be moving toward more convenience and variety. That data shows that expenditures on pre-cooked foods and dining out have increased while home consumption has stabilized. A small but significant portion of the population has increased its consumption of western-style food, in which meat is likely to be more prominent than seafood.

Another researcher, Yuko Kusakabe (a research assistant at the University of Rhode Island), found in a recently completed study of Japanese salmon markets that the markets were relatively stable over the past decade. She noted that consumption of seafood and meat maintained similar proportions over the last ten years, though she also identified a trend toward ready-to-eat foods and dining out.

Salmon is Japanese favorite at home; consumer is exacting connoissiur of species

Salmon is the most commonly consumed fish in the Japanese home. Kusakabe's review of product forms showed that current salmon consumption breaks out at 64 percent salted (though recent indications are that consumers are moving toward salted salmon that is less salty than in the past), 7 percent smoked, 19 percent fresh and 10 percent other. Kusakabe also noticed that the percentage of salted salmon consumed in the home dropped significantly between 1986 and 1989—from 74 percent to 64 percent. While most salmon is customarily consumed during the winter, there is a trend now toward year-round consumption.

How Salmon is Consumed in Japan



Broken down by variety of fish, the Japan External Trade Organization (JETRO), estimated Japanese consumption of salmon at 179 million pounds for sockeyes; 307 million pounds for chums; 84 million pounds of coho; 12 million pounds of kings; and 39 million pounds of Atlantic Salmon and sea trout. Another 87 million pounds of farmed trout were consumed.

Sockeyes are the preferred salmon, especially in western Japan where consumers often will buy nothing else, according to JETRO. Because of the seasonality of supply for sockeyes, domestic-caught chums are a substitute but are considered inferior in terms of color, oil and general quality. Coho enjoy considerable popularity and are the right color and size for the consumer. They are considered next-best to sockeyes by most consumers.

Consumption of salmon increases toward the end of the year because of the fall chum salmon harvests in northern Japan. These harvests make up close to 50 percent of Japanese consumption. There also is a large increase in the purchase of whole, salted salmon in December, spurred by the custom of seasonal gift-giving. A whole salmon is a popular gift (salted salmon, liquor and salted herring roe are other popular gifts).

Japanese choose wide variety of processing, preparation and serving options

Salted salmon usually is cut into fillet portions weighing between 80 and 130 grams. These are sold at retail stores, supermarkets and department stores. The salmon is available in several degrees of saltiness. The salted salmon is grilled at home without elaborate preparation and usually served with steamed white rice for breakfast or lunch. Use for dinner is infrequent.

Other traditional forms of salmon preparation include cooking in a pot with vegetables, pickling in sake lees and "sake chazuke" (a bowl of cooked rice with salted, dried and flaked salmon meat doused in hot tea). Salmon also is being prepared more often as westerners would prepare salmon. In recent years, salmon has been eaten raw in sushi and sashimi dishes.

About 22 million pounds of salmon were smoked in Japan in 1989, according to JETRO. Japanese consumers prefer smoked sockeyes, but also like smoked Yukon kings and Canadian cohos.

The salmon sold in department stores is of greater species variety and is processed in different ways. In addition to salted salmon, salmon marinated in rice wine lees (sediment from the wine fermentation process), fermented rice, and bean paste are available. This salmon also is grilled at home.

Fresh salmon is available at retail stores. Until recently, salmon was likely to be prefrozen except during the domestic harvest season. Now, domestic aquaculture and farmed salmon imports make fresh salmon more readily available.

There are several lines of salmon products which use low-value salmon. These include canned salmon, salmon flakes in air-tight containers, frozen salmon nuggets, and dehydrated salmon flakes.

Restaurant goers choose Atlantic salmon; Pacific is "common" home fare

Restaurants don't serve much Pacific salmon. It is hypothesized that Japanese diners don't want a dish they have frequently at home. They view salmon as easy to prepare and they want a restaurant dish that requires the skills of a chef.

On the other hand, Atlantic salmon are served at many Japanese restaurants and restaurant menus clearly distinguish Atlantic salmon from Pacifics. The appeal of Atlantics is that consumers are relatively unfamiliar with the product and restaurants can emphasize that the salmon they serve is different from what their customers are accustomed to at home.

The Canadian DFO report on Japanese salmon markets indicates the majority of the fresh aquaculture salmon has been distributed through the restaurant sector but the report authors believe there will be more fresh aquaculture salmon entering the retail sector. The restaurant sector is showing a decided preference for Chilean coho and Norwegian Atlantics.

Japanese Imports of Farmed Salmon

	Norway	Chile
1980	–	–
1981	NA	–
1982	94,000	–
1983	293,000	–
1984	637,000	–
1985	963,000	–
1986	1,700,000	73,000
1987	2,800,000	182,000
1988	6,600,000	2,400,000
1989	12,500,000	8,700,000
1990	NA	26,400,000

Japan distribution unique to world markets; importers deal with traders

The fish distribution system in Japan is complex and radically different from North American and European distribution systems. Direct access to the markets by fish importers is nearly impossible. Trading companies control about 70 percent of all Japanese imports. The vertical integration of the large trading companies reduces the flow of salmon through the wholesale markets. The product form of salmon usually changes at each distribution stage.

Bill Atkinson predicts there may be changes imminent in the Japanese marketing and distribution system over the next year or so. In his newsletter dated October 10, 1990, Atkinson says changes may be mandated by the rapid increase in interest rates in Japan.

In the past, the fishing industry has been able to borrow money at attractive rates which enabled purchase of product to hold in reserve until market conditions improved if necessary. According to Atkinson, the low rates also facilitated the rapid shift from domestic production to imports.

But Atkinson says the days of low rates for the Japanese fishing companies may be over. Heavy interest costs, in addition to rising costs for raw material and storage, indicate change. Most recently, importers of frozen sockeyes began a mini-dumping action to reduce inventory costs in September of 1990. September is the six-month midpoint of the fiscal year for Japanese companies.

Atkinson notes the situation affects more than importers: crab processors also were reportedly offering to sell frozen crab, purchased earlier in 1990, to meet their processing needs. They apparently are trying to free up money in inventory due to high interest costs. Atkinson predicts the industry will become more conservative in the future and buy only to meet short-term needs.

Improvements in freezing technology and freezer transportation have opened up routes which bypass the traditional wholesale markets. A portion of the frozen salmon now moves through "out market" routes. Large supermarkets can use these "out market" routes effectively. There are few tariff barriers to imported fish products.

Product identification at the retail level is minimal. In most retail fish stores and supermarkets, species and degree of saltiness consist of the product identification. Country of origin is not usually specified.

Japanese salmon imports have increased dramatically since the inception of the Magnuson Act (in 1974, Japan imported 18 million pounds of salmon; in 1989 Japan imported more than 17 times that amount). Japanese fleets have been shut out of salmon-rich areas off the U.S. and Canadian coasts and imports from the United States (primarily Alaska) and Canada have increased dramatically over the past 15 years.

More recently, the U.S.S.R. has restricted Japanese high seas salmon fishing in Soviet waters. In 1990, Japanese fishermen within 200 miles of the Soviet coast were restricted to areas that yield mainly pink salmon. *Seafood Leader*, in its May-June 1990 issue, reported that the Soviets would end Japanese salmon catches in Soviet waters by 1992.

In 1989, the Japanese produced 421 million pounds of salmon (less than 10 percent from the high seas, 10 percent by aquaculture means and the rest through coastal fisheries—mostly ranched chums). Mr. H. Suzuki of Japan's Nichiro Corporation estimates the maximum yield of Japan's fall chum production is about 330 million pounds. In 1989, Japan imported 315 million pounds of salmon.

During the 1980s, Japanese production of salmon and Japanese imports have stabilized to meet the annual demand by Japanese consumers of about 661 to 771 million pounds of salmon. In 1989, the Japanese consumed about 35 percent of all world production of salmon—wild and farmed.

Farming opens door for Japan to stabilize imports, meet needs domestically

While imports to Japan have stabilized, and Suzuki reports that Japanese production of fall chums has reached its maximum level, Japan's salmon alternatives are growing. Japan's production of farmed salmon has increased from 4 million pounds in 1980 to about 57 million pounds in 1990. Additionally, world farmed salmon production has grown to a level that now matches Alaska's production of wild salmon. Further, the Soviets will attempt to catch and export salmon formerly caught in Soviet waters by Japanese fleets. Canada has also expanded its imports to Japan (the salmon most highly valued by Japanese consumers, according to several surveys, is Canadian troll-caught sockeyes).

These expanded salmon alternatives make quality, price and product form paramount in the Japanese markets. Consumer substitution for traditional supplies of wild salmon will revolve around these three attributes.

Kusakabe noted the trade's resistance to farmed salmon seems to be dissipating. In 1988, 50 percent of the traders said farmed salmon was not a substitute for wild salmon but more recently that percentage seems to be dropping. Kusakabe believes consumers are even less finicky about farmed and wild than are the traders. She notes that some consumer taste tests in Japan show that consumers prefer the taste of farmed chinook and Atlantics.

Bill Atkinson also has noted that the market brokers are changing their attitudes toward farmed salmon. In his newsletter dated April 11, 1990, he pointed out that while sockeyes used to be the main source of "red"-fleshed salmon, the consumer is growing used to both domestic and imported farmed cohos, Atlantic salmon and ocean-farmed trout. He adds that while Alaska salmon still plays an important part in the Japanese market, it is no longer the only major source of product.

Apparently, as more consumers are exposed to farmed salmon through restaurants and as farmed salmon marketing efforts increase in the world's largest salmon market, consumers have shown they can shift between species. Suzuki even noted a rise in the consumption of farmed rainbow trout as consumers substituted trout for sockeyes when the price of sockeyes jumped.

Imported farmed fills niche as Japanese "work out bugs" domestically

Some impediments to farmed salmon in Japan include: the relatively poor reputation of penned Japanese cohos; the ingrained consumer preference for sockeyes (it is often noted that Japanese consumers shop with their eyes and the color of sockeyes is optimal for shoppers); and the need for freezing technology which will protect the quality of farmed salmon without dramatically raising production and handling costs.

Clinton Atkinson notes that frozen farmed salmon becomes competitive only when the average price for wild salmon exceeds the break-even point for farmed because the production and handling costs for farmed are high and inflexible. He cites an example of this break-even point: in 1988, Alaska sockeye prices were abnormally high and some Japanese companies turned to farmed salmon.

Clinton Atkinson also notes that farmed salmon from Japan, New Zealand, Chile and Europe have found niches in the large Japanese markets. Frozen farmed salmon is even arriving from northern Europe via the Trans-Siberian Railroad to compete price-wise with imports from Alaska and Canada. Bill Atkinson noted in his October 3, 1990, newsletter that projections for sales of Chilean farmed coho were 13 million pounds in 1990. That has now been revised to 26 million pounds with prices similar to prices paid for Alaska sockeyes.

Price competition will be closely tied to foreign exchange rates. Clinton Atkinson points out that every point increase in the rate of foreign exchange (i.e., from 150 to 151 yen per dollar) means a decrease of about $.02 per pound in FOB price. When the yen is fluctuating vis-a-vis the dollar, farmed salmon will control the extent of any price increase for wild Alaska salmon.

Perhaps the most disturbing Japanese market observation was made by Bill Atkinson in his newsletter dated January 9, 1991. He noted that the Bristol Bay sockeye fishery is being blamed by some for a large carryover of salmon from 1990 to 1991 (some project a 330- to 407 million-pound salmon carryover). The large harvest in 1990 had a definite effect on the increased supply. Atkinson said some Japanese processors believe there is no reason to pay for grades and products not easily marketable in Japan and are calling for a drastic reduction in the FOB price in 1991 to control the fishing effort in Bristol Bay.

As farmed and wild go head–to–head on quality/cost, Japanese will need branding to identify product origin

Suzuki foresees increased competition between farmed and wild salmon as the years progress with the key factors being quality and cost. He predicts more value-added processing prior to salmon exports to Japan (fixed salt, semi-dressed, dressed and filleted, portion cut, smoked, etc.). He also notes that as quality becomes more important there will be a need to brand salmon at the consumer end so that consumers can connect quality to product.

There also may be increased competition in Japan between salmon and other food products. Meat is becoming a more common part of the Japanese diet. JETRO notes some Japanese market experts believe there may be a relationship between the demand for high-grade fish such as salmon and trout and the price of beef. According to a study by the Ministry of Agriculture, Forestry and Fisheries, nearly two-thirds of the Japanese housewives surveyed indicated that if the price of beef fell by 20 to 30 percent they would increase their purchases of beef. A third of these housewives indicated they would cut back on their purchases of fresh fish to increase their purchases of beef.

Percentage Share of Protein Intake by Seafood in Total Animal Protein Intake in Japan

		1965	1970	1975	1978	1983	1988
Seafood	(grams)	16.4	16.6	18.1	17.9	17.8	18.9
	(percent)	61%	52.2%	50.7%	46.5%	44.3%	41.9%
Others	(grams)	10.5	15.2	17.6	20.6	22.4	26.2
	(percent)	39%	47.8%	49.3%	53.5%	55.7%	58.1%

Also, breakfast cereals are becoming Japan's fastest growing food product. In 1988, cereal sales shot up more than 60 percent, and Kellogg Co., General Mills and Nestlé are all getting in on the boom. Cereal substitution for the traditional Japanese breakfast fare of rice and salmon could impact salmon sales.

UNITED KINGDOM

The world's major canned consumer has opened to fresh and frozen

The British market for seafood has seen steady growth over the past decade. A January 1990 analysis for the American Embassy in London expects growth in real terms of 2.2 percent annually by 1993.

The domestic fishing fleet supplies about 60 percent of the seafood consumed in the United Kingdom. In 1987, there were 17,000 regularly employed fishermen in the UK with another 5,400 seasonally employed.

The UK is considered a primary market for canned salmon and a large market for fresh and frozen salmon. Recently, the salmon market exclusive of canned salmon has been undergoing considerable expansion, fueled primarily by a growing farmed salmon industry in Scotland.

Trends in Comsumption of Non–Canned Salmon in the United Kingdom and Sources of Supply, 1989–1987 (in metric tons)

Type/Source of Salmon	1981	1983	1985	1987
Scottish Production	2,000,000	5,000,000	15,000,000	28,000,000
Wild Landings	3,000,000	3,000,000	2,000,000	3,000,000
Imports, Fresh/Frozen	16,000,000	16,000,000	17,000,000	18,000,000
Exports, Fresh/Frozen	2,000,000	3,000,000	8,000,000	14,000,000
Balance of Domestic Consumption and Further Processing	20,000,000	24,000,000	26,000,000	36,000,000

Salmon overall is a growth market in U.K.
The total salmon market in the UK, based on AGB market figures presented at Salmon '90 in Trondheim, has been growing. Sales were up two percent in 1989 over 1988 and an additional eight percent growth was expected in 1990. Canned salmon accounts for 94-96 percent of all salmon sales but sales of fresh salmon have doubled from two percent to four percent during the past two years. Sales of smoked and frozen have been relatively stable during the past three years.

Significant changes are occurring in UK meal patterns. Dining out has become more popular and the consumption of meat, poultry and dairy products by volume has dropped while seafood consumption is up. Canned fish, according to an AGB study conducted for ASMI, accounts for 36 percent of all fish products sold in the UK (though tuna has overtaken salmon as the top-selling canned fish product). Between 1988 and 1989, sales of fresh salmon grew 50 percent by volume and 37 percent by value. During the same period, fresh salmon prices have fallen eight percent, while frozen (+14 percent), smoked (+7 percent), and canned salmon (+31 percent) prices have risen.

Sales of smoked and fresh salmon in the UK peak from Christmas to Easter, and again in the summer when prices are lowest.

Expanding fresh market absorbing Scottish farming boom
Herrmann reports that much of the non-canned salmon consumption has been taken over by domestic (Scottish) farmed salmon. Both consumers and smokers prefer smoked Atlantics to smoked Pacifics and, in 1984, the 65 Scottish smokers mostly switched from Pacifics to Atlantics.

Fresh salmon, Herrmann said, is still expensive in the UK but he expects consumers to absorb the large increase in Scottish salmon production. He notes that fresh salmon consumption was about .66 pounds per person in 1988.

Health awareness, increasing influence make less expensive/more accessible salmon a growing grocery favorite
Decreasing prices and increased availability are moving fresh and frozen salmon into the mass markets in the UK. Supermarkets are beginning to recognize the sales potential and are adding fresh and frozen salmon to product lines.

The trading manager for fish for the Argyll Group (with 400 stores expected by 1991 and the main chain being Safeway) notes that salmon is a star performer, and consumption of salmon (excluding canned) hit 72 million pounds in 1990. He credits healthy eating trends and increasing affluence of the general populace, coupled with the drop in fresh salmon prices, for salmon's increased popularity.

The trading manager reports that supermarket availability and an increasing choice of product form is less intimidating for the "underconfident" fish user. Marketing strategies that include packaging and recipes will also encourage the new customer.

Diversifying product form and packaging will further fresh and frozen growth in U.K.

The trading manager also believes that salmon will undergo an evolution similar to the product diversification for chicken. Chicken can be purchased in quarters, wings, drumsticks, thighs and breasts; with bone in and skin on; in boneless fillets with skin off or on. There are 22 product lines for chicken in the UK Safeway stores. Currently, he notes, the only cuts of salmon available are steaks and fillets with skin on and bones in. This year Safeway has expanded to boneless steaks, skinless-boneless fillets, salmon strips that are skinless and boneless, and salmon chunks that are skinless and boneless.

Product forms for salmon are increasingly diverse. Smoked salmon, steaks and fillets packaged in individual sizes, and fresh and frozen prepared dishes are common. The catering markets almost exclusively use fresh salmon purchased whole. Retail sales are mostly in individual portion sizes.

Marie Christine Monfort, a European seafood consultant familiar with salmon, reports that domestic consumption of salmon in 1980 (excluding canned salmon) totalled about 14 million pounds. By 1988, that figure had nearly tripled with consumption pegged at 40 million pounds. Per capita consumption of salmon (other than canned) in the UK is about 320 grams.

Argyll's trading manager for fish projects that fresh/frozen/smoked salmon consumption will exceed 66 million pounds in 1990. Monfort notes that salmon consumption over the past decade has increased at a much greater rate than consumption of other fish products. Annual growth in salmon consumption from 1980 to 1988 was 13 percent. If the trend continues, she adds, consumption for fresh/frozen/smoked salmon will reach 107 million pounds in 1995. That will be about 850 grams per person.

The retail salmon industry, historically based on wild Pacific salmon, is now turning to farmed salmon. There is a high degree of substitution between origins if prices differ dramatically.

The bulk of salmon sold fresh and frozen in the UK is salmon farmed in Scotland. By 1987, the U.N.'s 1989 *Globefish* report showed Scottish salmon has 60 percent of the fresh/frozen market. Globefish also reported that the quantities of Pacific salmon imported remained static between 1980 and 1987. Gains by Scottish salmon farmers in the domestic markets are apparently coming at the expense of imported Atlantic salmon from Norway. In 1989, Scottish salmon reportedly displaced about 4 million pounds of imported Norwegian salmon worth $11 million.

In 1989, Monfort reports, less than 17 million pounds of salmon (other than canned) were imported by the UK. About 9 million pounds were fresh farmed salmon (5 million pounds from Norway), 2 million pounds were from the U.S. and 1 million pounds were from Canada.

Some U.K. markets resist fresh/frozen, but large majority willing to try it

Expansion of the markets for fresh/frozen salmon is occurring even though a large segment of the UK population has never bought salmon other than canned. An AGB consumer survey of 1,007 shoppers revealed that 72 percent of the shoppers surveyed had never purchased salmon except for canned salmon. Of the 28 percent who have bought fresh/frozen salmon, less than half had made a purchase within the last three months.

The survey was broken out by sex, age, social class and region. Meshing with the assumption that salmon has a "top-end" image, the AGB survey showed the most frequent buyers of fresh salmon were those in the higher social classes.

But there were also strong regional differences. Fresh salmon sold best in London and Lancashire. These two regional areas account for 32 percent of the UK population, but 53 percent of fresh salmon consumption. London and southern England account for 29 percent of the UK population, but 64 percent of the sales of smoked salmon.

There was price resistance to fresh/frozen salmon, especially among women over the age of 55. Those least concerned with price were upper middle class young men.

While the AGB study revealed a very high percentage of shoppers who had never tried salmon that was not canned (72 percent), the study also showed that two-thirds of this group were willing to try salmon. This means that 6 million households have tried fresh or frozen salmon while another 16 million homes represent a wide-open marketing opportunity.

AGB notes that if one in ten of the people who has never tried fresh or frozen salmon could be persuaded to add fresh/frozen salmon to their diet, the market for fresh and frozen salmon would increase by 25 percent.

Fresh fish in the UK is generally sold through fishmongers or market stalls. Fishmongers account for about 50 percent of all fresh fish sales and market stalls account for another 16 percent. Supermarkets, though, are taking an increasing share of the fresh fish market, largely at the expense of market stalls. The UK's Sea Fish Industry Authority (SFIA) projects that by 1992 supermarkets will overtake market stalls and account for 18 percent of fresh fish sales.

The UK's five leading supermarkets, according to SFIA, now account for about half of frozen fish sales with freezer centers accounting for about 20 percent of frozen fish sales.

Globefish reports that the UK fresh/frozen salmon market represents one of the best prospects for increasing salmon consumption given current low levels of consumption coupled with growth sectors. The U.N. organization, however, believes that the market will be supplied mainly by its local industry—the Scottish salmon farming industry.

U.K. is canned import leader; U.S. share has declined

Consumption of canned salmon is very high in the UK, with an estimated 42 million pounds imported during 1989. Price increases of up to 44 percent were recorded in the canned salmon market that year.

In 1988, fully one-half of the total U.S. canned salmon pack was shipped to the UK. By the end of the 1980s, however, U.S. market share in the canned salmon markets had declined from 60 percent to 32 percent. This drop was attributed to Canadian trade practices, rising prices, competition from competing seafoods, and declining pack.

U.K. favors canned seafood; tuna has price edge over salmon

Herrmann reports that 12 percent of all consumed seafood in the UK is consumed in canned form. In a 1989 survey for ASMI by AGB, canned tuna was the most frequently mentioned seafood purchased, with 59 percent of surveyed shoppers reporting they had purchased canned tuna. Canned salmon was the second most frequently mentioned fish product purchased, with 45 percent of surveyed shoppers mentioning purchase of canned salmon. Fresh or frozen fish products trailed well behind canned tuna and salmon (frozen fish in batter or bread crumbs tied with canned sardines at 39 percent). Canned salmon purchasers are generally older and of the middle social classes. Canned tuna seems to be strongest in younger age groups, homes with children, and with middle and upper class shoppers.

Canned salmon is viewed strongly, according to AGB's ASMI survey, as being suitable for special occasions. A large proportion of those surveyed also believe that canned salmon is versatile and can be used in sandwiches and salads. However, most surveyed also believe that canned salmon is expensive (88 percent) while canned tuna was viewed as inexpensive (only seven percent thought tuna was expensive). More viewed tuna as an ideal snack than viewed salmon as an ideal snack.

One third of those sampled bought canned salmon at least once a month, with frequency highest in the middle and lower end social classes. Close to 30 percent purchased canned salmon only as regularly as every fourth month. Purchase of canned salmon seems to be stable, however, with 89 percent of the sample indicating they would buy the same amount of salmon over the next year.

Recognition of Alaska salmon as a source of canned salmon is relatively low in the UK. On an unprompted basis, only four percent of those surveyed identified Alaska as a source for canned salmon. Canada garnered a 36 percent recognition rate, while Scotland scored 23 percent.

Argyll's trading manager for fish and AGB both note a general trend among food shoppers in the UK which will affect all types of salmon as well as other food products. They say the UK shopper is much more alert to "food scares" than in the past. Reports of nematodes in cod and herring, salmonella in eggs, listeria in patés and cooked meats, and the "mad beef" phenomenon have all been catastrophic in the UK food markets. The trading manager also notes an increasing trend by UK shoppers to shop environmentally—considering food packaging, ozone layers, food chemicals and hormone additives.

FRANCE

Largest in Europe—third largest in world—France is major salmon market force

With over 1 million tons of seafood consumed in 1988, France is one of the European Economic Community's largest seafood markets. Monfort notes that with growth in seafood demand during the past 20 years, and French seafood landings relatively stable, France relies to an increasing extent on imports.

Consumption of fresh and frozen seafood in France in 1988 was estimated to be 18.4 kilograms per person. Consumption of salmon per person was about .95 kilograms per person, compared to 1.9 kilograms of cod per person.

France now is the largest European market for salmon and the world's third largest salmon market (trailing Japan and the U.S.). Salmon demand in France has grown dramatically due to availability of the product and relative price drops. Only very small amounts of imported salmon are processed and then exported, so imports accurately reflect French demand.

French demand for salmon grew from 39 million pounds in 1982 to 113 million pounds in 1989, according to Monfort. Most of that demand is for fresh, frozen and smoked salmon.

France has very limited demand for canned salmon. None is produced domestically, and less than 10 million pounds were consumed in 1989. As in other countries, Monfort reports, canned salmon is not perceived to be as nutritionally wholesome as fresh/frozen or smoked.

In 1982, the ratio of Pacific salmon to Atlantics imported by France was about 3:1. By ... the ratio of Pacifics to Atlantics imported was about 1:5. The growth in French ... consumption has been fueled almost entirely by imports of Atlantic salmon.

	1982	1984	1986	1988	1989
	[illegible]	51	71	91	113
Atl.	[illegible]	16	33	61	94
Pac.	[illegible]	35	40	30	19

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

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	1982	1984	1986	1988	1989
Total (mp)	40	51	71	91	113
Atlantic	10	16	33	61	94
Pacific	30	35	40	30	19

The market share for Pacific salmon dropped from 74 percent in 1982 to 17 percent in 1989 while demand for Atlantics increased tenfold during the same period, according to Monfort. Most of the Atlantics are from Norway, but the most prized Atlantics are of Scottish origin and Scottish salmon commands a small price premium over Norwegian. Clearly, increased salmon demand in France has not been covered by France's traditional suppliers—the U.S. and Canada—but by farmed salmon newcomers like Norway and Scotland and more recently Ireland and the Faroes.

U.S. imports maintain some French preference, despite onslaught of farmed

Globefish attributes Norwegian marketing efforts for much of the French increase in salmon consumption. The U.N. agency notes that fresh farmed salmon competes with turbot, sole, sea bass and hake *and* with frozen Pacific salmon that is usually offered at lower prices in freezer centers and retail outlets. *Globefish* notes, however, that while price is a key issue in substitution between Pacific and Atlantic, there is a market for those who prefer Pacific.

Monfort does not believe the Norwegian salmon incursions are irreversible. She notes that some of the recent shipments of Norwegian salmon did not meet quality expectations. She also notes that U.S. imports have at least three major advantages: the fish is red; the fish is wild; and French importers are familiar with Pacific salmon.

On the other hand, Monfort notes, both Norway and Scotland salmon producers opened offices in France in 1988. Promotional efforts involve regular and direct contact with importers, processors and distributors. Both offices have two permanent employees. The Norwegians have a budget of four to six million French francs, and Scotland's budget is two to three million French francs.

France also is farming salmon and harvested about 3 million pounds in 1990. The marketing approach for this salmon apparently will emphasize its French origins.

Smoked salmon is French staple; 43% of imports, half of Pacific, destined for smoking

In 1988, 43 percent of all salmon imports went into the smoking market. Fresh salmon imports (46 million pounds) were distributed to retail markets (40 percent), the catering sector (40 percent) and the smokers (20 percent). All 14 million pounds of imported frozen Atlantics went to smokers. About 50 percent of the imported frozen Pacifics (30 million pounds) went to the smokers in 1988, with 40 percent going to other processors and 10 percent to retail markets.

The market for smoked salmon in France, where it is usually served sliced with lemon and warm toast, seems almost limitless. Consumption of smoked salmon is seasonal with high demand at the end of the year and, to some extent, at Easter

In 1989, Monfort notes, French smokers absorbed between 39 and 50 million pounds of salmon and produced 26 to 33 million pounds of smoked salmon. The smoked salmon is marketed in whole sides, both fresh and frozen, and in small, mostly fresh packs of slices. Traditional smoked salmon markets were small food outlets and delis, but more recently the trend is toward vacuum-packed smoked salmon through other retail markets—mainly multiples.

Smoked Atlantic salmon is considered high-end and is sold through delis and restaurants. Smoked Pacific salmon is mostly marketed through the multiples. *Globefish* cautions that smoked Pacific consumption must be analyzed carefully, since some of that consumption includes high-value king and coho salmon by consumers with a taste preference for both species.

Other salmon processing has occurred to meet the demand for convenient prepared dishes. This segment has grown with the demand for healthy and low-calorie meals. Growth in this sector also has been more apparent since salmon became available year-round and at lower prices.

Fresh salmon is sold through retail outlets in several product forms: whole, head on, gutted or not (the trend has been toward gutted and away from the traditional not-gutted); in 100-gram to 200-gram fillets; and in 100-gram to 200-gram steaks. Globefish notes that the market for fresh salmon is less seasonal than in many other countries, and less seasonal than sales of smoked salmon.

Seafood demand—and salmon demand—projected to continue surge until mid-1990

Because of a relative price drop, salmon has been replacing other high-profile fish like turbot, sea bass and sole in the catering sector. Usually salmon penetration in restaurants has been in the high class restaurants. To improve their image, some commercial restaurants favor fresh salmon and use Atlantics almost exclusively.

Growth potential for salmon consumption in France is high, Monfort notes. Observers have noted the general increase in seafood consumption and that seafood consumption growth, to this point, has been confined to a relatively limited portion of the population. If prices remain competitive with other species, salmon will be an important part of the processing industries' seafood products.

Globefish's analysis of the French market led to the conclusion that the French market is more species-conscious and knowledgeable with respect to salmon than other European markets.

A recent study cited by Monfort foresees that demand for seafood will increase annually in France by about 2.2 percent until the year 2000, while population growth will be in the neighborhood of .3 percent per year. With this growth at this rate, it can be expected salmon consumption would reach about 132 million pounds per year by the year 2000.

But examination of the growth of salmon consumption since the beginning of the 1980s shows that the rate of salmon consumption has grown annually by 11.9

percent—far higher than projections based on overall seafood consumption. If salmon consumption keeps growing at the rate evident since 1982, consumption of salmon will reach 238 million pounds by 1995.

BELGIUM

Small nation with large salmon appetite: smokers have dominated; fresh/farmed is increasing

Consumption rates for salmon are relatively high in this small nation, with per capita consumption estimated to be about 600 grams. That translates to about 13 million pounds per annum.

The domestic smoking industry takes about half of all imports (a large portion of which is Pacific salmon). Both Pacifics and Atlantics are sold in the smoked markets, with a premium paid for Atlantics. Fresh salmon from Norway, and increasingly from Scotland, goes to markets where it is sold whole (often steaked at the selling point) or in fillets.

During the past decade, there has been a decrease in frozen salmon imports and a large increase in fresh salmon imports. Smoked salmon imports have remained relatively stable.

	1980	1984	1986	1989
Fresh (t p)	742	2,572	5,216	10,000
Frozen	4,296	4,188	3,847	2,425
Smoked	899	575	656	1,285

The market in Belgium is relatively well-developed. Demand is growing regularly and is expected to continue to do so. If demand does grow as expected, Monfort predicts consumption of salmon in the neighborhood of about 26 million pounds by 1995. *Globefish* believes the salmon market expansion prospects for Belgium are similar to prospects in the UK, France and Germany, with growth to be spurred by rising incomes and falling salmon prices.

THE NETHERLANDS

Salmon consumption jumped last decade, but limited growth predicted

Demand for salmon in the Netherlands has more than tripled during the past decade, from about 2 million pounds to about 7 million pounds. Per capita consumption is about 220 grams per year.

The bulk of imports is used for smoking (about 70 percent) with the rest going into the retail fresh market. Pacifics are usually diverted into the smoking sector while Atlantics are used both for smoking and for fresh sales.

Consumption in the retail sector presently occurs almost entirely during the Christmas period, largely because of price. Salmon is viewed as a luxury item. Dutch smokers have found export markets easier and more profitable to develop.

Globefish notes the increase in consumption is based on imports of farmed salmon in fresh form. Imports of Pacific salmon, however, seem to be holding their own.

Compared to other EEC countries, prospects for growth in the salmon markets are limited, according to Monfort. Seafood consumption growth in the Netherlands is lower than other countries. Average seafood consumption growth is expected to be about .6 percent annually to the year 2000. During the past decade, growth in salmon consumption has been about 11 percent per year. If that trend continues to 1995, salmon imports would reach about 14 million pounds.

GERMANY

Big reduction in commercial production boosts seafood imports; consumers favor prepared/preserved

Landings of seafood in Germany have fallen dramatically, from about 1.5 billion pounds in the early 1970s to 440 million pounds in 1987. This cutback is mainly attributable to restriction of access in waters traditionally fished by the Germans. Germany is a net importer of seafood.

Average consumption of seafood was 13.2 kilograms in 1989 (up from 11.8 kilograms in 1987, when there was a drop due to a national concern about fish worms). The market in Germany is dominated by prepared and preserved seafood such as canned, marinades and smoked. These market sectors constitute about 65 percent of sales. Frozen products take 20 percent of sales with fresh seafood accounting for about 15 percent.

Most salmon is imported fresh, consumed smoked; demand grows in static seafood market

About 80 percent of salmon imports are purchased in fresh form, Monfort says. In 1989, Germany imported 32 million pounds of salmon. Average per capita consumption was about 240 grams. About half of the salmon consumed is smoked; the rest is fresh.

German demand for salmon in the 1980s grew at an annual rate of 13 percent. *Globefish* notes this increased demand for salmon has happened in spite of a relatively flat market for seafood in general. If current trends continue, demand in 1995 will be about 74 million pounds, according to Monfort. That will be about 560 grams per person.

Fresh Atlantics are sold through fishmongers and in wet fish counters in multiples. They are displayed whole, head on and gutted. Interest in pre-packaged is reportedly growing.

Smokers buy both Atlantics and Pacific. The high quality smoked products are usually Atlantics, as is the case in France. Demand for smoked fish peaks at the end of the year with 30 to 40 percent of all sales occurring at that time. There is another small peak near Easter.

A larger percentage of fresh sales of salmon are in the restaurant rather than the retail sector, according to *Globefish*. The agency notes, however, that interest in fresh salmon in the retail markets is increasing. Retail outlets include specialty fish retailers, most department stores and some supermarkets with fish counters.

Salmon are imported into Germany primarily by specialty importers in the Hamburg and Bremerhaven areas or by large wholesalers. The catering sector is usually supplied by regional wholesalers, as are the specialty fish retailers. Some of the larger retail groups buy directly from importers. There is no central fish auction market as there is in the UK and France.

Atlantic growth, Pacific decline parallels overall European import trend

Over the past decade, imports of Pacific salmon have dropped, while there has been dramatic growth in the import of Atlantics. About 60 percent of all salmon in 1980 were Pacifics but that market share dropped to 11 percent in 1989. Norway supplied the bulk of salmon to Germany in 1989.

	1980	1984	1986	1989
Pacifics (mp)	5.8	5	3.2	3.5
Atlantics	3.7	7.1	12.6	28.6

Globefish reports that promotional efforts by the Norwegians, very high real incomes, extension of sales in supermarkets, and increased availability of quality salmon will contribute to a growing salmon market. The U.N. agency also believes that competition from Pacific salmon is not perceived as a threat to Atlantics given the "growing preference for Atlantic salmon in the smoking sector and low quality image of Pacific salmon."

Demand for seafood is not likely to grow that rapidly. However, the need for convenient food forms (processed and ready-to-eat dishes) should continue to grow. The processing industry may turn to salmon to fulfill that growing niche provided salmon prices remain competitive. *Globefish* reports the market for frozen prepared meals grew by 50 percent between 1980 and 1987 and there appears to be some room for salmon dishes in this market.

SPAIN

Salmon is growing segment of Europe's number one seafood market

The Spanish seafood market is the largest in Europe, with 2,645 billion pounds of product sold in 1988. Per capita consumption of seafood is more than 30 kilograms per year.

The demand for fresh fish is especially high (68 percent of total consumption in 1989) but demand for frozen fish is also increasing. Frozen fish sales grew from 440 million pounds in 1987 to 551 million pounds in 1988.

Demand for salmon in 1989 amounted to 24 million pounds, Monfort reports. That translates to a per capita consumption rate per year of about 280 grams. While demand for salmon has increased threefold over the past decade, very little of that demand is satisfied with Pacific salmon. Very small quantities of Atlantic salmon are farmed in Spain.

	1980	1984	1986	1989
Pacific(mp)	.6	1.6	.3	.8
Atlantic	.4	2	5.8	24.4

More than half of the salmon goes to the smoking industry while the remainder is sold fresh in restaurants. Only marginal amounts are sold in retail outlets, according to Monfort.

Farmed salmon is handled by importers who supply wholesalers in the main fish markets. In some cases, importers are smokers who sell small portions of their purchases through the fresh fish system.

Norwegian farmed has stronghold on Spain's current and projected salmon increases

Norway is the dominant supplier of salmon, with 20 million pounds in 1989. Scotland provided about 1.5 million pounds that year. Success of Norwegian marketers, traders report, is based on successful marketing by the Norwegian Farmed Fish Marketing Association. Spain's entry into the European Community and the resulting reduced tariffs on salmon also contributed to the growth in salmon consumption.

A relatively high population growth, growth in personal income and a demand for high profile foods are expected to contribute to growth in salmon imports. *Globefish* notes that a static supply of fish species consumed from the wild fishery will also contribute to a growth in the consumption of imported salmon.

The number of supermarkets in Spain is growing rapidly and the larger supermarkets have extensive fresh fish counters. Salmon is very substitutable with turbot, hake and bass, according to *Globefish* , and decisions to purchase are made based on price and the relative availability of other species.

Seafood consumption is expected to increase by about 1.9 percent per year till 2000. Salmon consumption is expected to grow as well, though predictions are difficult. The 39 percent growth rate for salmon in the 1980s may be misleading because of the very small amounts consumed in the early part of the decade.

Monfort assumes a growth rate for salmon in the neighborhood of about 15 percent per year, which translates to total salmon consumption in 1995 of about 66 million pounds. That represents less than two percent of total fish consumption. She bases her prediction on similar growth rates in other EEC countries.

Globefish outlines the case for a favorable salmon market in Spain because of Spain's increasing interest in northern European products. Also, increasing competition from within Europe is likely to improve the variable quality of Spanish smoked salmon, and seasonality of sales will even out as supermarkets handle more salmon and stimulate consumption. Increasing promotional efforts of salmon producers—especially the Norwegians—will also be a factor.

ITALY

Salmon is currently small player in large Italian seafood market

Demand for seafood in Italy is high at about 2.2 billion pounds per year. Nearly 70 percent of Italian demand is supplied by Italian fishermen, with 30 percent imported. Per capita seafood consumption is about 14.3 kilograms, most of which is consumed in fresh form.

According to Monfort, Italian demand for salmon is very light. Less than 11 million pounds were consumed in 1989, which translates to about 90 grams per person annually.

Kings and cohos are used in the domestic smoking industry and an additional 5 million pounds of smoked salmon were imported in 1989. *Globefish* reports that there seems to be a preference for fairly hard smoked sockeyes from wild Pacific fisheries, but that preferences may be changing with the rise in availability of smoked Atlantics. Smoked Atlantics seem to dominate in the upscale markets.

While some Atlantics are smoked, the majority go into the retail markets as fresh fish. Fresh Atlantics are perceived as a substitute for higher-profile sea bass and other species. Very little is currently used in the catering sector but that is expected to change in the future.

Norway is the dominant supplier of Atlantics. The market buys mainly ungutted salmon, with a preference for 2– to 3–kg and 3– to 4–kg fish; larger fish have been difficult to sell, according to *Globefish*.

Salmon is a relatively new product in the Italian market, so sales have not had a demonstrable effect on other species. As in France and Spain, the main competition is likely to be from sea bass and sea bream.

Most sales are during the Christmas and Easter seasons. The ratio of sales, according to *Globefish*, is 60:40 catering to retail.

Salmon expected to match or surpass projected seafood increases

Demand for seafood in Italy is expected to grow at a rapid clip—about 2.4 percent annually until 2000. Monfort expects the demand for salmon will grow at an even faster rate, since Italy is characterized by rapidly increasing levels of personal income.

Monfort expects growth in salmon consumption will be about 15.2 percent per year, with 1995 consumption reaching 30 million pounds. Growth in the catering section (especially in northern Italy) will be most dramatic.

AUSTRALIA

Trade barriers limit Australian imports to canned

The Australian market has been a traditional canned salmon market for Alaska pink salmon and sockeyes. There is no fresh or frozen market for salmon, other than for farmed Tasmanian salmon, because of artificial trade barriers imposed on all imports of fresh and frozen fish.

Canned salmon suppliers include John West (out of the United Kingdom) and other suppliers, as well as generic brand suppliers and "others". The "others" category includes high seas salmon canned in Asian countries and commonly referred to as outlaw salmon.

John West buys through the UK and supplies UK outlets and Australian outlets. They recently bought two other canned salmon brands selling in Australia. In spite of the company's expansion, sales of canned pinks dropped about 10 percent between September 1989 and September 1990. Canned sockeye sales rose about 6.8 percent during that year—an anemic increase considering that prices dropped about 20 percent. Market gains have been captured in the Australian canned salmon market by the outlaw salmon importers.

There have been some efforts—most recently by Canadians—to eliminate the trade barriers for fresh and frozen salmon. Removal of the barriers would clearly provide opportunities, since Australians are already familiar with salmon through the canned sales.

QUALITY SURVEY

As competition escalates, quality becomes chief marketplace concern

There is an obvious link between product quality and product success in the marketplace for salmon. In the increasingly competitive world of salmon marketing, quality is central to the advertising campaigns of the Chileans, Norwegians, Canadians, Shetland Islanders and other producers of farmed salmon.

Leading farmed producers jump on "quality" marketing bandwagon

During the late 1970s, Norwegian salmon importers in the U.S. built an identity for their farmed salmon by marketing—to the trade—the twin attributes of quality and consistent supply. The Norwegians now say their quality control is the "strictest in the world", the Chileans maintain they inspect every fish, and the Canadians claim to raise quality salmon in the unpolluted waters of British Columbia.

Farmed and wild on equal ground when caught

Quality also is being marketed by handlers of wild Pacific salmon. It is clear that wild or ranched Pacific salmon are at least the equal of farmed salmon when they are pulled from the waters of the North Pacific. The quality of wild and ranched salmon can change, however, after the fish comes over the transom.

Trade favors farmed salmon's consistent quality and availability

Martin Warp, a vice president of the Oregon Lox Company, wrote a letter recently to the *Alaska Fisherman's Journal* noting his belief that a farmed Atlantic salmon can't "hold a candle to well-handled commercially caught Pacific salmon." But he continues:

> *"I think it's arrogant to promote Alaskan, B.C. or Washington wild salmon as superior to any other salmon if they're only superior when they first come out of the water. Although it stirs my patriotism to hear how wonderful wild Alaskan Pacific*

salmon are when they leave the water, what matters to us, and companies like us, is what they look like when they get here, dressed and frozen."

Wild Pacific salmon will lose against farmed if quality issue not addressed

Mr. Warp believes there needs to be a greater level of cooperation between fishermen, contract tenders and processors if wild Pacific salmon are to compete favorably against farmed salmon. He contends: "If the color of wild fish is better but they are badly bruised, people will buy Atlantics. If the taste of a wild fish is better but they're soft and split, people will buy Atlantics. If wild fish are aesthetically more appealing but are belly-burned, people will buy Atlantics."

Mr. Warp's assessment is shared by others in the marketplace. The manager of seafood marketing for a chain store with 160 outlets in Texas was quoted in the *Alaska Fisherman's Journal* as saying "I'm very sold on aquaculture product. For consistency in price, consistency in quality, consistency in availability, nothing touches the fresh product out of the Northeast. I don't even consider Alaska product anymore."

Because quality is the foundation for many farmed salmon producers' advertising campaigns, and because some in the trade are critical of the quality of wild salmon they receive, ASMI staff reviewed some recent assessments of salmon markets—especially the quality components of those assessments. Also, in the summer of 1990, ASMI's quality coordinator conducted a survey of the salmon trade to assess trade attitudes toward farmed and wild salmon.

This section of the Salmon 2000 report provides a quick glance at previous market surveys that reviewed quality characteristics, as well as an overview of the results of the ASMI-conducted survey. Additional survey data is available from ASMI staff.

RECENT STUDIES

Farmed Atlantic imports will grow in U.S.

In a study titled "The Marketing Relationship between Pacific and Pen-Reared Salmon" (1986), Ronald Rogness and Biing-Hwan Lin surveyed top seafood wholesalers handling salmon. They concluded that the number of distributors and the volume of imports of pen-raised Atlantic salmon would continue to grow in the U.S. They found a significant number of the companies they spoke to would likely substitute fresh Atlantic salmon for fresh Pacific salmon.

They also concluded that since the majority of harvested Alaska salmon is marketed frozen, the expected growth in pen-raised Atlantic salmon markets over the short term might impact only a small portion of the total U. S. salmon industry. However, they added, if and when a glut in the supply of pen-raised salmon occurred, the marketing relationship between Atlantic and Pacific salmon would change.

Four years later, the pair did a follow-up survey ("U.S. Salmon Markets: A Survey of Seafood Wholesalers", 1990) to more closely examine farmed and wild salmon substitution. Consistency in supply *and quality* were identified by the majority of respondents as the main advantages of farmed salmon over wild Pacific species.

James Anderson looked at price impacts of farmed salmon on traditional Alaska salmon markets ("World Markets for Salmon: Pen-reared Salmon Impacts", 1988). He states:

> *"For all markets, the most significant anticipated change is the dramatic increase in supply of premium quality salmon as farming increases. This study and market survey data from a number of other sources indicates that many new customers are entering the salmon market due to increased consumer awareness and the consistent quality and year-round availability of fresh farmed salmon."*

Anderson's findings in part support an axiom within the seafood industry: across all regions and types of buyers, quality is *the* most important factor. According to Anderson, the key to improved sales is a consistent supply of high-quality fish.

U.S. consumer doesn't distinguish farmed and wild—but echoes trade demands

Canada's Department of Fisheries and Oceans (DFO) commissioned a study aimed at measuring American consumer attitudes on fresh and frozen salmon ("U.S. Salmon Consumer Survey", David Egan and Gordon Gislason, 1989). Since most marketing surveys traditionally target the trade, results of this research are especially interesting, as they provide insight into salmon purchasing behavior by the end user.

A portion of the consumer survey was devoted to anecdotal comments by the consumers. Quality was clearly the singlemost important issue for many consumers. Survey subjects ranged from obviously sophisticated salmon consumers ("There is a large variation in salmon—i.e. coho, Copper River king etc., and the quality of these fish varies much more than my favorite—swordfish"; or "Because of the lack of grading standards for fish, I am getting hesitant to purchase or consume any fish") to the less sophisticated ("Sometimes fresh and frozen fish is not fresh here in Texas—I'd like more North Atlantic or Pacific varieties over Gulf varieties").

In addition to anecdotal comments, the surveyors identified three additional items of interest. First, among American consumers surveyed, there is a higher preference for fresh salmon than for frozen, both at the retail and restaurant levels ("I consider fresh fish to be tastier" or "Salmon has always been my favorite and I eat it every chance I get—but always fresh"). Second, fresh salmon is normally purchased by consumers in some semi-processed form and not in whole form. Finally, the DFO survey concluded that the majority of American consumers do not perceive a difference between farmed and wild salmon.

ASMI TRADE SURVEY ON SALMON QUALITY

Trade at all levels relates experience with farmed vs. wild

ASMI's quality program staff developed a survey questionnaire targeting various levels of the seafood trade. The purpose of the survey was to collect anecdotal information from retailers, wholesalers, restauranteurs, seafood brokers and specialty seafood shops about their buying experiences with wild and farmed salmon, based on a set of quality attributes described in the questionnaire (which follows this document).

The anecdotal findings are useful for several reasons. First, the opinions about salmon quality from these seafood handlers serve as a source of market information for Alaska seafood suppliers. Second, areas for further quantitative research in seafood quality are identified. Finally, ASMI identifies trade contacts with potentially new markets.

Originally, 100 key trade people were to be contacted and interviewed by telephone. Lists were developed from the National Fisheries Institute (NFI) Blue Book register of the top 50 foodservice companies and top 50 restaurants and wholesalers. No effort was made to segregate the companies by geographic region.

Wholesalers, restaurants and foodservice companies were selected based on gross earnings—the bigger the firm, the more likely it would be included in the survey. Specialty seafood shops were randomly selected out of regional phone books. After numerous attempts to reach a significant portion of companies by phone proved unsuccessful, mail questionnaires were developed and sent to the people identified earlier for the phone survey.

Three questionnaires were included per packet. One was for respondents handling both farmed and wild salmon. This was referred to as the "top form". Separate questionnaires were included for handlers of only wild salmon or only farmed salmon. All companies and respondents were kept confidential to ensure full disclosure.

The survey had an overall response rate of 30 percent.

Breakdown of Industry Segments Contacted In Survey

	Total Contacted	# Respondents	Percent
Brokers	20	6	20%
Wholesalers	25	5	20%
Restaurant	20	5	20%
Retail	25	10	40%
Specialty	10	4	40%
	100	30	

The survey had an overall response rate of 30%.

Of those who completed and returned the survey, 17 percent of the responding brokers said they only handled wild salmon. Of the responding wholesalers, 20 percent also said they handled only wild salmon. Ten percent of the retailers, 40 percent of responding restauranteurs and 25 percent of specialty seafood shops handled farmed salmon only.

Results from the respondents who only handled wild or farmed salmon, but not both types, were not used in the overall analysis but were included for purposes of determining why one type of salmon was used to the sole exclusion of the other.

Assumptions

Four assumptions were developed prior to initiating the project, based on what has been printed in leading seafood publications; comments reported at trade shows attended by ASMI; and ASMI institutional knowledge on the subject:

- Restaurants will prefer farm-raised salmon due to its consistently high quality.
- Overall, companies surveyed will handle mostly fresh salmon, and will identify high prices and lack of consistent supply as barriers to greater wild salmon consumption in these markets.
- Wild salmon will win out over farm-raised in the "taste" category.
- Overall, farm-raised salmon will be the buyers' choice at all levels of the trade due to:
  - –competitive pricing
  - –consistently high quality
  - –consistent supply/availability

Results compared to assumptions

Assumption #1: This was not clearly supported. Quality was rated "essential" by all restauranteurs. The consistency of farmed salmon quality was rated "excellent" by a majority of respondents, yet two thirds of respondents also rated wild salmon as having very good and consistent quality.

Assumption #2: This assumption was partially supported. All segments of the trade did handle mostly fresh salmon. However, only restauranteurs cited higher prices for wild salmon as a negative for greater purchasing of wild salmon.

All other segments said that not only were higher prices not a problem with wild salmon, but its competitive price in fact served as a positive factor in a buyer's consideration. The lack of consistent supply of wild salmon was, however, a major barrier to all segments except brokers in the decision to handle more wild salmon.

Assumption #3: This assumption was not supported. Only specialty shop operators gave a taste advantage to the wild salmon. All other segments surveyed indicated that "taste" was essentially the same for both wild and farmed.

Finally, assumption #4: This assumption was partially correct. On competitive pricing, brokers and retailers rated pricing about the same; wholesalers and specialty shops rated wild salmon slightly better; and restauranteurs rated farmed salmon as having more competitive pricing. All segments surveyed unanimously agreed that farmed salmon had a consistently higher quality then wild salmon.

Brokers scored wild and farmed salmon about the same in the category of consistent supply, with a very small advantage for farmed. All other segments of the trade clearly felt consistent supply was an advantage for farmed salmon.

Quality and supply are unanimously agreed to be barriers to wild in U.S.

Overall, all groups agreed that major barriers to handling more wild salmon in the domestic market include a lack of consistent supply and consistent quality of wild salmon sold in the U.S. marketplace.

RESULTS BROKEN DOWN BY INDUSTRY SEGMENT

Brokers

Six brokers completed the questionnaire. Five handled both wild and farmed salmon, while one handled only wild. Species handled by the brokers included Atlantics, kings, sockeyes, chums, and coho. None of the responding brokers handled pink salmon.

Most brokers ranked quality of the salmon they handle as an essential attribute (the other ranked quality "very important"). Freshness, product form and price were all important for both farmed and wild, but less so than quality.

Brokers give farmed slight edge in quality and supply, but wild wins on price

Overall, the responding brokers appeared satisfied with the salmon they were handling—whether wild or farmed. Generally, the brokers tended to slightly favor the farmed salmon in the areas of consistent quality and supply. Most also noted that the price of wild salmon was more competitive.

Broker Experience With Salmon by Attribute (%)

	Farm Salmon				Wild Salmon			
	EX	VG	Mg	P	EX	VG	Mg	EX
Color	25	50	25		25	75		
Texture	25	75			25	75		
Taste	25	75			50	50		
Shelf Life	25	75				100		
Packaging	25	50	25			75	25	
Lack of Bruising	25	75				25	75	
Consistent Quality	25	75				50	50	
Consistant Supply	20	50	25				75	25
Competitive Price		25	50			50	50	

KEY: EX=Excellent; VG=Very Good; Mg=Marginal; P=Poor

All brokers said their preferred product form was whole fish; they did not have a packaging preference. Two of the respondents had a preferred shipping weight—one for 50-pound boxes and the other for 25- to 40-pound boxes. Forty percent said they further processed the salmon after purchase into steaks and fillets.

The broker handling only wild salmon felt that the wild held advantages over farmed salmon in the categories of color and taste. Most broker respondents, though, felt farmed salmon offered several quality advantages, including: lack of bruising, consistency in quality, and longer shelf life. They also mentioned farmed advantages of better packaging, consistent supplies, color, texture, and consistent pricing.

Brokers will choose wild when conditions are ideal; if not, it's farmed or nothing

Brokers were asked to provide written comments describing "best case" and "first option" purchase scenarios. Those written comments include:

Brokers' Ideal Purchasing Scenario

- "Troll kings, 11 pounds and up, from specific salmon runs . . . boxed whole and belly iced."
- "Fresh, iced, cleaned, whole-body salmon."
- "Product from Alaska—when it arrives on time in excellent condition without transportation problems."
- "Fresh, iced and cleaned whole salmon greater than six pounds sent in 50-pound cartons. Either farm-raised or wild, depending on availability."

First Option Scenario (When "ideal" is not available)

- "I do not need to have (wild) salmon as a special—when all else fails I can run farmed salmon."
- "I'll survey the market for the next closest quality, etc."
- "Do without it."

Other comments from brokers included the need to improve communications from the West Coast to the East Coast; the need for air cargo improvements; and a desire for a commitment to price one month in advance.

Wholesalers

Five wholesalers responded to the questionnaires, including four who handled both wild and farmed salmon and one who handled wild only. In this group of five, all species of wild Pacific salmon were handled in addition to farmed Atlantics (though individual wholesalers did not necessarily handle all species).

As a group, the wholesalers were pretty much united when asked to describe buying determinants. The most important determinants included quality, species, product form and price. Less important determinants were where the salmon originated or whether the salmon was fresh, frozen, farmed, or wild.

All things equal except quality and supply—farmed wins again, with wild's only edge in price

The wholesalers handling both farmed and wild salmon were asked to rate the salmon attributes. Wild and farmed matched closely in color, texture, taste and shelf life attributes. Farmed were rated higher in packaging, lack of bruising, consistent quality and consistent supply. Wild edged farmed salmon in the pricing attribute.

Wholesaler Experience with Salmon by Attribute(%)

	Farm Salmon				Wild Salmon			
	EX	VG	Mg	P	EX	VG	Mg	EX
Color	25	50	25		25	75		
Texture	25	75			25	75		
Taste	25	75			50	50		
Shelf Life	25	75				100		
Packaging	25	50	25			75	25	
Lack of Bruising	25	75				25	75	
Consistent Quality	25	75				50	50	
Consistant Supply	20	50	25				75	25
Competitive Price		25	50			50	50	

KEY: EX=Excellent; VG=Very Good; Mg=Marginal; P=Poor

Most responding wholesalers preferred handling whole salmon. One said he also purchased steaks and one said he bought only fillets. Wild salmon was purchased in weights of 6 to 9 pounds and 9 pounds and up by each respondent. Most of those handling farmed salmon preferred the 4- to 5-kilogram fish, though some preferred the smaller fish.

Unlike the brokers, the majority of wholesalers did not process their salmon further after purchase. One who did add value produces fillets. The three who indicated a packaging preference use vacuum packed product. There was no unanimity on carton sizes, with preferences ranging from "less than 30-pound containers" to 50- and 100-pound containers.

The one wholesaler who handled only wild salmon dealt with chum salmon. When asked why he did not deal in farmed, his response was "price/color". This wholesaler [illegible] find wild salmon grading terms confusing but ranked the quality of the salmon as very good.

Wholesalers use fresh and frozen in variety of forms; again farmed often favored only when wild supply and quality falls short

Wholesalers, like the brokers, also were asked to provide written comments about their best case and first option purchasing scenarios. The comments include:

Wholesalers' Ideal Purchasing Scenario

- "We use high-quality frozen salmon, both pre-portioned and whole, and also buy fresh, iced salmon for some reprocessing."
- "Only fresh, whole/gutted with gills attached."
- "Our customers prefer seasonal supplies of frozen salmon for overseas; domestic customers like fresh farmed salmon served in restaurants."

First Option Scenario

- "We take an inventory position."
- "We use farm-raised salmon when fresh wild salmon is not available or is inconsistent in quality or availability."
- "We do not carry salmon (then)."
- "We'll find a close substitute."

One wholesaler points to typical quality predicament with wild

Quality was targeted by one of the wholesalers who took the time to write additional comments. He noted:

> *"I would like to mention a particularly upsetting problem we experienced the last few years, with emphasis on this year. Many people look forward to the Copper River king opening as an excellent way to market a high-quality, fresh Alaska salmon. Due to the press this opening has received, the fish can really command a higher price to the consumer. Unfortunately, the quality of all the Copper River salmon we handled this year was very poor due to improper handling by the fishermen and others in the distribution chain.*
>
> *We had several complaints from some of our major restaurant customers, one of whom said he experienced the same quality problems from three different Seattle-based distributors and (the restaurant) refused to serve (Alaska salmon) the remainder of the opening. This type of problem can destroy a marketing plan that has taken years to develop*

We purchased one-third of what we did the previous year at a time when our fresh fish sales were up 35 percent over the same time period. Our only means to combat this are complaints to suppliers and using our purchasing dollars for other products."

Restaurant

Five restauranteurs responded to the questionnaire, three of whom handled both wild and farmed salmon and two who handled only farmed salmon. Those who served wild handled reds, cohos, pinks and chums; those who handled farmed served Atlantics, kings and cohos.

Purchasing decisions by those who handled both farmed and wild were similar to those of other trade segments. Quality was rated essential by the restauranteurs who handled both. Farmed or wild was not as important a determinant as product form or species. Freshness was a higher rated value than frozen.

Restauranteurs echo other segments: farmed for quality/supply, packaging and appearance; wild for price

The restauranteurs handling both wild and farmed salmon, like other trade segments, rated the attributes of both. Wild and farmed were closely matched in the attributes of color, texture and taste, but farmed was rated higher in packaging, shelf life, lack of bruising, consistent supply, consistent quality, and price. With the exception of price, these ratings are similar to the ratings given by brokers and wholesalers. Brokers and wholesalers generally gave the pricing nod to wild salmon.

Restaurant Experience with Salmon by Attribute

	Farm Salmon				Wild Salmon			
	EX	VG	Mg	P	EX	VG	Mg	P
Color	33.4%	66.6%			33.4%	66.6%		
Texture		100%				100%		
Taste		66.6%	33.4%			66.6%		33.3%
Shelf Life	66.6%	33.4%				66.6%	33.3%	
Packaging	33.4%	66.6%				66.6%	33.3%	
Lack of Bruising	66.6%	33.3%				33.3%	33.3%	33.3%
Consistent Quality	66.6%	33.3%				66.6%	33.3%	
Consistant Supply	66.6%	33.3%					33.4%	66.6%
Competitive Price	33.3%	33.3%	33.3%				100%	

KEY: EX=Excellent; VG=Very Good; Mg=Marginal; P=Poor

Two of the three restauranteurs handling both wild and farmed salmon thought the grading terms were confusing. One noted "Due to the (grading) terminology, the average buyer does not understand the difference in fish, quality, etc., and, hence, is probably not receiving what he thought he ordered. Some people use these terms to commit economic fraud."

When asked to list preferred product forms, most said they preferred whole salmon, while those who handled only farmed preferred headed and gutted. One added he also purchased steaks, while another said he bought only fillets. The wild salmon was purchased, generally, in weights of 6 to 9 pounds and 9 pounds and up. Two of the three who served farmed preferred the 3 - to 4-kilogram size fish, while the other preferred 4 - to 5-kilogram fish. The farmed-salmon-only purchasers preferred the larger 4-5s and 6-7s.

The restauranteurs generally processed their salmon further after purchase. Of those who served both wild and farmed, one made steaks, the other fillets and the last "other portions".

Those serving only farmed rated farmed salmon as superior from top to bottom in all attributes, including pricing. Those who served both wild and farmed were split on color, taste, texture and shelf life.

Restauranteurs demand a variety of forms; freshness is only constant

As with other segments of the salmon trade, restauranteurs were asked to comment on their "best case" and "first option" purchasing scenarios. The comments include:

Restauranteurs' Best Purchasing Scenario

- "We use salmon so many different ways, it depends on the particular need at the time."
- "Fresh, headed and gutted with plenty of ice."
- "Fresh, boneless fillets and fresh steaks."

First Option Scenario

- "We always get what we need."
- "We only serve fresh year round."

Restauranteur points to opportunity in "natural" rather than "wild" label

Additional comments from restauranteurs ranged from improving the flavor to raising the profile of wild salmon. One wrote:

> *"We will use wild salmon when it is available—if [it is] not, we will buy farmed salmon. As for frozen salmon verses fresh farm-raised: the farmed advantage is due to the consumer perception that frozen is not as good as fresh, even if the quality of frozen is better. Saying "wild" salmon is a lousy marketing tool—it denotes "gamier" taste in product and customers won't buy that. Also, some people perceive farm-raised fishing as less cruel than capturing wild fish. Suggest too that you use the word "natural" instead of "wild" in your advertising. Of course, the biggest disadvantage to farmed salmon are antibiotics, steroids etc., so using "natural" for your product is a BIG positive."*

Another noted:

"We cannot commit our national program to Alaska Pacific salmon primarily because of irregularity in supply. We need to set national specifications for our company, which means using farmed Atlantic for their continuity of product and consistent supply. We also get about two extra days shelf life on our single gill cut fish slaughtered at a plant versus killed at the pen site."

Retailers

Ten retailers responded to the questionnaire—nine handled both farmed and wild salmon, while one handled farmed salmon only. All five species of Pacific salmon as well as the farmed Atlantic were handled within this group of ten. Farmed kings and cohos and wild kings and cohos were part of the product mix.

Quality and freshness were two major factors affecting purchasing decisions by retailers. Species, origin, whether a salmon was wild or farmed, price, and product form were less important buying determinants.

When quantifying attributes of the wild and farmed, retailers generally favored wild for color, texture and taste—though not by much. Farmed salmon were rated highly on the attributes of shelf life, packaging, lack of bruising, consistent quality, and consistent supply. Wild and farmed were rated equally on competitive pricing.

Retailer Experience with Salmon by Attribute (%)

	Farm Salmon				Wild Salmon			
	EX	VG	Mg	P	EX	VG	Mg	P
Color	29	14	47		37.5	50	12.5	
Texture	12.5	50	37.5		12.5	75	12.5	
Taste	12.5	75	12.5		22	78		
Shelf Life	37.5	50	12.5		12.5	50	37.5	
Packaging	25	62.5		12.5	12.5	50	37.5	
Lack of Bruising	22	78				62.5	37.5	
Consistent Quality	25	75				37.5	62.5	
Consistant Supply	37.5	62.5				12.5	75	12.5
Competitive Price		75	25			75	25	

KEY: EX=Excellent; VG=Very Good; Mg=Marginal, P=Poor

The terms used to grade wild salmon prompted several comments. Most (75 percent) felt the terms were confusing. Written comments were pertinent, and factors referenced ran the gamut from lack of consistency in grading to knowing the supplier. One wrote:

"The color designations of chum salmon are very inconsistent. Silver bright, semi-bright, darks and pale refer primarily to skin coloration. But what is really important is the meat color. The current grading system causes a lot of problems in identifying exactly what you want. Perhaps a flesh color chart—like a spectrum—with a numerical grading system could be established so the confusion would be

taken out of the picture. Right now we have to inspect everything, and half of it is not what we want."

Another echoed the sentiment that meat color, not skin color, is most important, noting that "at retail we sell steaks, and the color of meat is the critical part—not the skin!"

Nearly half of the retailers (45 percent) preferred purchasing their salmon in steak or fillet form. Whole salmon were preferred by a third, and roasts by 12.5 percent. Only 12.5 percent of those buying wild salmon preferred fish above nine pounds. The preferred weight for farmed was 3 to 4 kilograms.

Most retailers prefer vacuum-packed product, but one used poly-wrap. Also, most preferred receiving their salmon in cartons of less than 50 pounds (five preferred the 25- to 40-pound cartons while three accepted only 10- to 20-pound cartons).

When asked if they felt a buying advantage existed between frozen wild salmon and fresh farmed salmon, four of the seven who answered believed there was an advantage to farmed, two believed frozen wild had the buying advantage and another said there was no competitive advantage between the two.

Retailers insist on fresh or nothing

Under the "best case" and first option purchasing scenarios, the retailers were more responsive than other members of the trade. The comments included:

Retailers' Ideal Purchasing Scenario:

- "We buy what we need when we need it. There is no need to go to the freezer when we can get the best—fresh."
- "Fresh, iced, H&G or head-on packed 1/50 lbs."
- "Purchase product steaked or filleted in vacuum pack with our label already on it . . . shelf ready. If fillets are twice frozen, then I'll buy farmed salmon."
- "Fresh, iced, cleaned, whole-body salmon for reprocessing."
- "Fresh, iced, whole-body salmon; USDC-inspected Grade A-equivalent quality."
- "High quality frozen steaks and fillet portions vacu-packed in 10-pound cartons."

First Option Scenario

- "We always get what we ask for . . ."
- "I go with another species or protein source."
- "We just don't place an order then."
- "We won't offer salmon then."
- "Find another supplier."
- "We buy from another supplier and base our decision on quality and price—or simply be out of the product."

The retailers were especially garrulous when they reached the "Other Comments" section. Their unedited responses included:

- "Yeah, get doing more and better marketing for frozen salmon. Your domestic market is dying!"
- "Talk about quality and "freshness" in your promotions—don't talk refrigeration/frozen stuff . . . customers need a clear nutritional picture on value of salmon versus other sources of protein."
- "Shelf life is critical at retail—same thing with quality. You people do too much blending of #1's and #3 salmon and we get burnt!"
- "Too many of us retailers have put a meat man in charge of the seafood section, and they sell and handle the product like it was chicken, beef or pork."
- "Transportation/logistics is our #1 concern. You must have adequate flights from Alaska and Seattle to handle the volume of salmon during the fresh season. Eastern U.S. customers have been consistently "short-changed" on deliveries received for advertised supermarket features. Until this problem has been resolved (with) the carriers (i.e. UPS, United, Eastern, Continental, and TWA) there will not be a viable WILD salmon business on the East Coast."
- "More standardization in grading and an emphasis on packing product for retail sale: pre-cut steaks and fillets."

- "Develop reliable grading system for your chums."
- "We've been providing our customers with information about Pacific salmon life history, harvesting times, gear types and salmon quality attributes for over five years. Our statewide mailout with this information goes to more than four million customers along the coast."
- "I do not want to have to purchase twice frozen fillets . . . my customers complain about the product."

Further comments suggest U.S. suppliers not cooperative on variety of retailer needs

The retailer who handled only farmed salmon said he needed "fresh salmon in whole, pre-cut fillets and steaks." He added that with wild salmon it is impossible and when he does get it "the quality is suspect." His other comments included:

"Meet our needs. Foreign suppliers go out of their way to do this in the areas of delivery, packaging and transportation. Handling practices along the distribution chain in the U.S. are deplorable. When will U.S. suppliers start using the styro-boxes provided to us by the Norwegians, where we get product to arrive in excellent condition?

"Nobody from up there ever comes to us to discuss cooperative advertising to promote the currently available species. Finally, you should do more to promote your sole and other whitefish—not just salmon—and look into experimenting with new product forms for the market."

SPECIALTY SEAFOOD SHOPS

Four operators of specialty seafood shops answered the quality questionnaire. Three handled both wild and farmed salmon, while one handled farmed only.

Quality, price, species and product form were important to the specialty seafood operators. Fresh versus frozen was also important. Origin and whether the fish was wild or farmed were of secondary importance.

Of those who handled both wild and farmed salmon, wild was rated better in the attributes of taste and price, but farmed was more highly rated in the attributes of color, texture, shelf life, packaging, lack of bruising, consistent quality and consistent supply.

Specialty Shop Experience with Salmon by Attribute (%)

	Farm Salmon				Wild Salmon			
	EX	VG	Mg	P	EX	VG	Mg	P
Color	66.6%	33.3%				66.6%	33.3%	
Texture	100%					33.3%	66.6%	
Taste	33.3%	66.6%			66.6%		33.3%	
Shelf Life	100%					33.3%	33.3%	33.3%
Packaging	33.4%						66.6%	33.3%
Lack of Bruising	66.6%	33.3%				33.3%	33.3%	
Consistent Quality	100%						100%	
Consistant Supply	33.3%	66.6%				33.3%	33.3%	33.3%
Competitive Price		66.6%	33.3%		33.3%	66.6%		

KEY: EX=Excellent; VG=Very Good; Mg=Marginal; P=Poor

Grading surfaces again as wild salmon negative

Only one of the specialty seafood operators found wild salmon grading terms understandable. Two found the terms "confusing" and one wrote back that wild salmon are "inconsistently graded."

Three said they preferred purchasing whole salmon and said they further processed whole salmon into fillets. Two also said they made steaks and one smoked some salmon. There was no expressed preference for packaging.

Wild salmon was purchased in weights of 6 to 9 pounds by three specialty seafood operators, and one bought 9 pounds and up. With farmed salmon, three preferred the 3- to 4-kilogram fish; and one preferred 2- to 3-kilogram fish and 4 to 5-kilogram fish.

When asked if they felt that there were any competitive advantages between a fresh farm-raised salmon and a fresh wild Pacific salmon, all specialty shop operators said farmed had the advantage.

Fresh dominates speciality's must–have list

As with others in the trade, specialty shop operators were asked to outline their "best case" and "first option" purchasing scenarios. The comments were are follows.

Specialty Shops' Ideal Purchasing Scenario

- "Fresh, iced whole salmon."
- "Fresh, iced, cleaned whole body salmon for reprocessing."

First Option Scenario

- "Same as (a) above. . ."
- "(We) do not sell salmon if we don't get the ideal."
- "We only serve fresh year round."

Other comments echoed those made by other trade segments including the complaint about lack of consistency and honesty in grading. This respondent also noted there is a lack of grading knowledge among suppliers and there are "unethical distributors confusing the marketplace."

It was interesting to note that one of the specialty seafood operators said "I think Alaska salmon are, quality-wise, the best fish as of now." This same operator did not support his assertion in the direct question portion of the survey.

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- speeches made earlier this year at Salmon 90 in Trondheim, Norway;
- notes from speeches at Aquaculture International in Vancouver, British Columbia in early September this year;
- articles from the fishing press;
- articles from the Salmon Farming Newsletter, Bill Atkinson's Newsletter, Ken Terry's newsletter and other subscription newsletters; and
- various reports commissioned by or reviewed by ASMI's TEA agencies.

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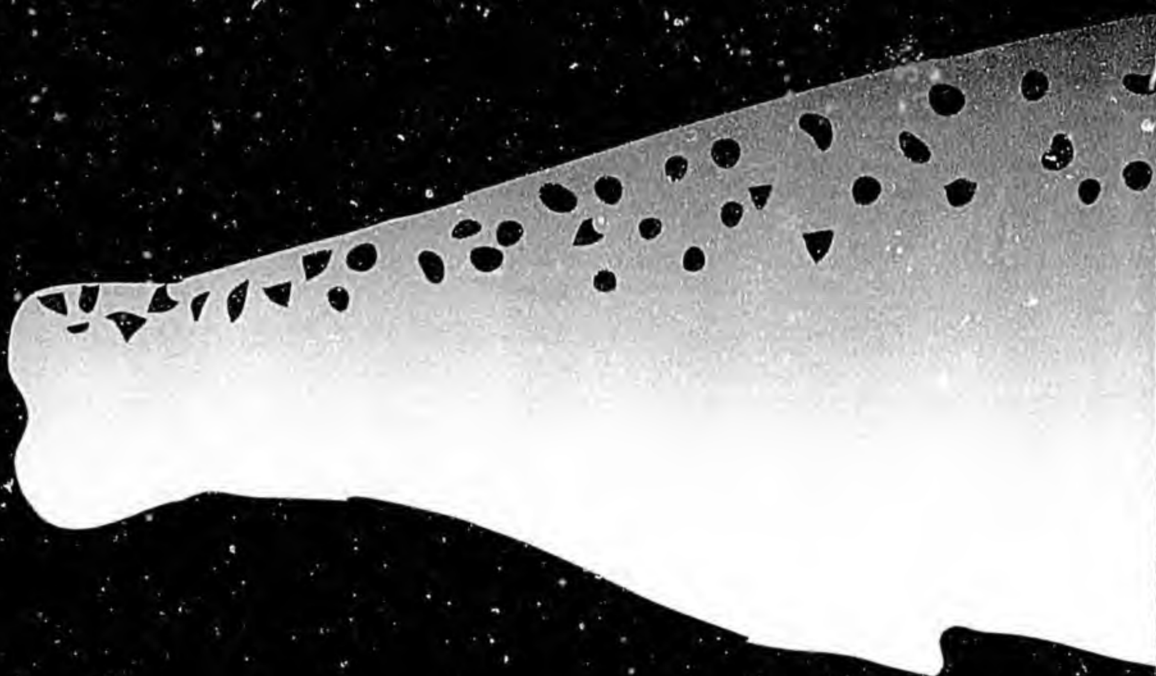

Alaska Seafood
MARKETING INSTITUTE

P.O. Box D • Juneau, AK 99811-0800 • (907) 586-2902