

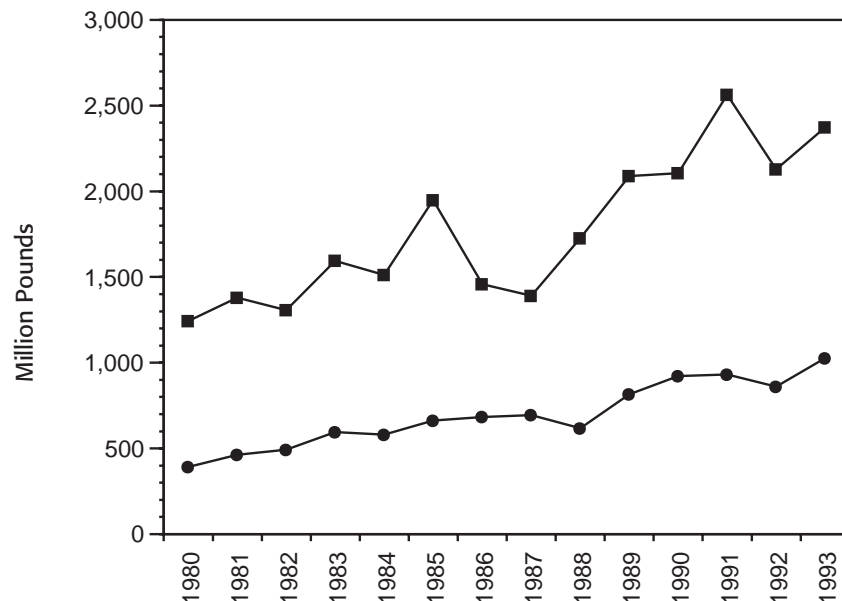
## Understanding Salmon Markets

by Terry Johnson  
and Craig Wiese

*What is happening in salmon markets? What exactly is a market? Where do our fish go, and who decides how much we get for them? Why do salmon cost so much in the supermarket? What will prices be in the future?*

World salmon markets are changing. At one time, Alaskans could sell every salmon they caught because they produced nearly half the world supply. When salmon runs decreased, the price went up, and most fishermen would still earn enough money. But today a lot more salmon is on the market. Wild salmon landings have increased in Alaska and elsewhere, and farms are now producing as much salmon as the Alaska fishing industry. So much salmon is produced in the world today, compared with the 1980s, that prices have been forced down so consumers will purchase it all. In 1993, 2.4 billion pounds of salmon were produced worldwide. Japan is the largest consumer, purchasing 35%-45%. The figure below shows world salmon production and Japan salmon consumption since 1980.

**World Salmon Production (■) and Japanese Salmon Consumption (●)**



**SOURCES:**

World salmon production, from ASMI 1993 and State of Alaska 1993.

Japanese salmon consumption, from Knapp 1992 and Bill Atkinson's News Report 1994.

Salmon Market Information Service reports are published by the University of Alaska Anchorage under a contract with the Alaska Seafood Marketing Institute (ASMI). Salmon fishermen pay for these reports through a 1% tax on their landings. Contact: Salmon Market Information Service, University of Alaska Anchorage, (907) 786-7750.

Many sources of salmon market information are available to fishermen:

- Newsletters, such as *Bill Atkinson's News Report* (206) 525-3235, *Seafood Trend Newsletter* (206) 523-2280, and *State of Alaska Weekly Fish Report* (907) 561-5585.
- Salmon Market Information Service reports.
- Fishing industry trade journal market reports.
- Seafood industry trade journals.
- Radio, TV, and daily newspaper coverage.

To use these sources, a fisherman must have a basic knowledge about salmon markets and how market information is presented. The purpose of this publication is to explain the basics.

## What is a market?

The term “market” can be confusing because it has several different meanings, and all are used regularly. A market can refer to a region where sales occur, as in “the biggest market for sockeye salmon is Japan.” Or it can be a reference to the economic outlook for sales, such as, “the market is down because of the recession.” Market also refers to the buyers of a product. For example, fishermen often use the term market to mean the processing company that buys the raw fish. When people talk about marketing or a marketing campaign, they’re talking about the promotion and selling of a product, as in “what’s the best way to market frozen salmon in Omaha?” Market can also refer to the place where a product is sold, whether it’s the entire U.S. retail market or the store where you buy groceries. All of these meanings are correct and most of them are used in this publication. A person simply has to pay attention to the context in which the word is used.

Eight species of salmon are sold throughout the world: six Pacific species (sockeye, pink, chum, coho, king, and Asian cherry salmon), plus Atlantic salmon and saltwater pen-reared rainbows or “salmon trout.” The markets for these eight species involve tens of product forms, dozens of countries, hundreds of companies, thousands of middlemen, and tens of thousands of fishermen and fish farmers.

For each combination of species and product form, there are buyers in the market who want that product and others who are not interested. An exporter looking for canned reds to sell in Britain isn’t interested in fresh reds, at any price. A smoker who wants kings to make into lox won’t be interested in the finest pinks money can buy.

The process of buyers finding the product they want, agreeing on a price, and purchasing it from a seller, is the essence of a market in action.

## Where do Alaska salmon go, and how are they processed?

Of the five species of Alaska salmon on the market, **sockeyes** and **pinks** account for most of Alaska salmon revenues. Sockeyes go to three main markets: Japan, the United States, and Europe. Nearly 80% of Alaska sockeyes are frozen, and more than 95% of the frozen sockeyes go to Japan. About half the canned sockeye production goes to the United Kingdom. The other half remains in the United States, where major markets are in the northeast and northern midwest states.

Some 70% of our pink harvest is canned, and about half of that is exported. The United Kingdom is our biggest export customer. The other half of canned

production, along with most of the fresh and frozen product, is sold around the United States, especially in the southeastern and mid-Atlantic states.

**Chums** are usually sold fresh or frozen in the United States. In fact, some marketers say chums are America's favorite wild salmon because of their low price and mild flavor. Some chums are exported to Japan because most of Alaska's chums return earlier in the season than the huge Japanese runs. In the United States, chums are used commonly to make smoked salmon products. One-third to one-half of chum production is exported, with Canada and Japan the primary destinations.

**Cohos** go fresh or frozen to restaurants and supermarkets in domestic markets, especially in the west. Larger coho are often smoked, in the United States and in Japan. About 70% of our cohos are exported, mostly to Japan.

**Kings** are popular with U.S. and European smokehouses because of their rich flesh and large size. Smaller kings may be steaked for restaurants or supermarkets. Some high quality troll kings, and Yukon River kings, are now exported fresh or frozen to Japan. (Sources: Knapp 1992, SMIS 1994.)

## **How does the price, which starts out so low, get to be so high?**

The price of a salmon may start out at 70¢ a pound to the fisherman for fish delivered to the tender, yet that same salmon can sell for \$8 a pound in a supermarket. Table 1 shows how the cost increases at each step of the distribution system, using the example of frozen sockeye shipped to Japan and sold as fillet slices in the Japanese supermarket.

A processor's raw fish cost (before processing begins) includes the fisherman's price, tender fees, and taxes. Processors pay for a whole fish but throw away heads, guts, and fins. The amount paid for the "waste" is called processing yield cost. Not all of the waste is worthless, however. Eggs, which are extracted along with the guts, have value and are sold. In Table 1, the value of the eggs is added back in, and "deducted" from raw product expenses before processing yield cost is calculated.

Importing costs (duties, customs fees, bank charges), transportation, reprocessing, wholesale, and retail sale expenses make a product rise in value quickly as it moves up the distribution chain. The largest price jump comes at the supermarket, where a 40% to 60% markup between wholesale and retail is common.

There are two main distribution paths for sockeye salmon in Japan. The majority of Alaska sockeyes go directly from American processor to importer to Japanese reprocessor and then to a supermarket or restaurant. This path is labeled "direct" in the table. A smaller portion, 25% or less, is sold through the wholesale central market system. This path is labeled "central market." It differs from the "direct" distribution system in that fish move from importers through two layers of wholesalers before moving on to secondary processors.

Central market wholesale prices are quoted in the Japan market section of fishing industry magazines and in market newsletters. The central market wholesale system is monitored and regulated by the Japanese government. Average prices for food products are made public and are published regularly. Direct market system activities are not monitored by the government, so wholesale prices paid to importers for salmon by secondary processors or supermarket companies are not made public. Even though only a small percentage of Alaska salmon is sold through central market wholesalers, everyone watches these prices because they are good indicators of price trends. These same trends occur in the

**Table 1: Bristol Bay fisherman's price to Japan retail price for frozen sockeye salmon**

<b>Raw product</b>	<b>Cost (\$/lb)</b>	<b>Cumulative cost</b>		
Fisherman's price	\$0.70			\$0.70
Fish & ASMI tax (3.3%)	\$0.02			\$0.72
Tender	\$0.12			\$0.84
Less roe value (3%) (roe \$4.75/lb)	(\$0.14)			\$0.70
<b>Primary processing</b>				
Processing yield	74%			\$0.95
Direct labor	\$0.17			\$1.12
Packaging	\$0.05			\$1.17
Miscellaneous	\$0.05			\$1.22
Overhead/profit	\$0.50			\$1.72
<b>Importation</b>				
	<b>\$/lb</b>	<b>\$/lb</b>		
Freight (from Bristol Bay)	\$0.28	\$2.00		
Import duty (5.0% C&F)	\$0.10	\$2.10		
Bank charge (3% C&F)	\$0.06	\$2.16		
Customs handling (4% C&F)	\$0.08	\$2.24		
Transportation	\$0.15	\$2.39		
Cold storage (5 months)	\$0.15	\$2.54		
Loan interest (5 months) (9%/yr C&F)	\$0.07	\$2.61		
Importer margin (5%)	\$0.13	\$2.74		
<b>Wholesale</b>				
	<b>Central market</b>	<b>Central cumulative</b>	<b>Direct</b>	<b>Direct cumulative</b>
Primary wholesaler (5.5%)	\$0.15	\$2.89	\$0.00	\$2.74
Sales tax (3%)	\$0.09	\$2.98	\$0.08	\$2.82
Secondary wholesaler (15%)	\$0.45	\$3.43	\$0.00	\$2.82
Sales tax (3%)	\$0.10	\$3.53	\$0.00	\$2.82
<b>Secondary processing</b>				
Transportation	\$0.10	\$3.63	\$0.10	\$2.92
Kirimi process yield (80%)	\$0.91	\$4.54	\$0.91	\$3.83
Labor	\$0.35	\$4.89	\$0.35	\$4.18
Packaging	\$0.10	\$4.99	\$0.10	\$4.28
Overhead	\$0.30	\$5.29	\$0.30	\$4.58
Margin (10%)	\$0.59	\$5.87	\$0.59	\$5.17
<b>Retail</b>				
Transportation	\$0.15	\$6.02	\$0.15	\$5.32
Retail overhead/profit	\$2.58	\$8.61	\$3.30	\$8.62

In this example, the fisherman gets 70¢ per pound for sockeye salmon, while the fillet slices sell for more than \$8 a pound in the Japanese supermarket.

**NOTES:**  
Assume 110¥/\$

C&F = Cost (processor price) & freight (U.S. to Japan).

Assume 30% retail margin for central market path.

**SOURCE:**  
Wiese 1992.

direct market system, although the wholesale price (the price paid by retailers) are typically lower in the direct market system.

## Who decides how much we get for our fish?

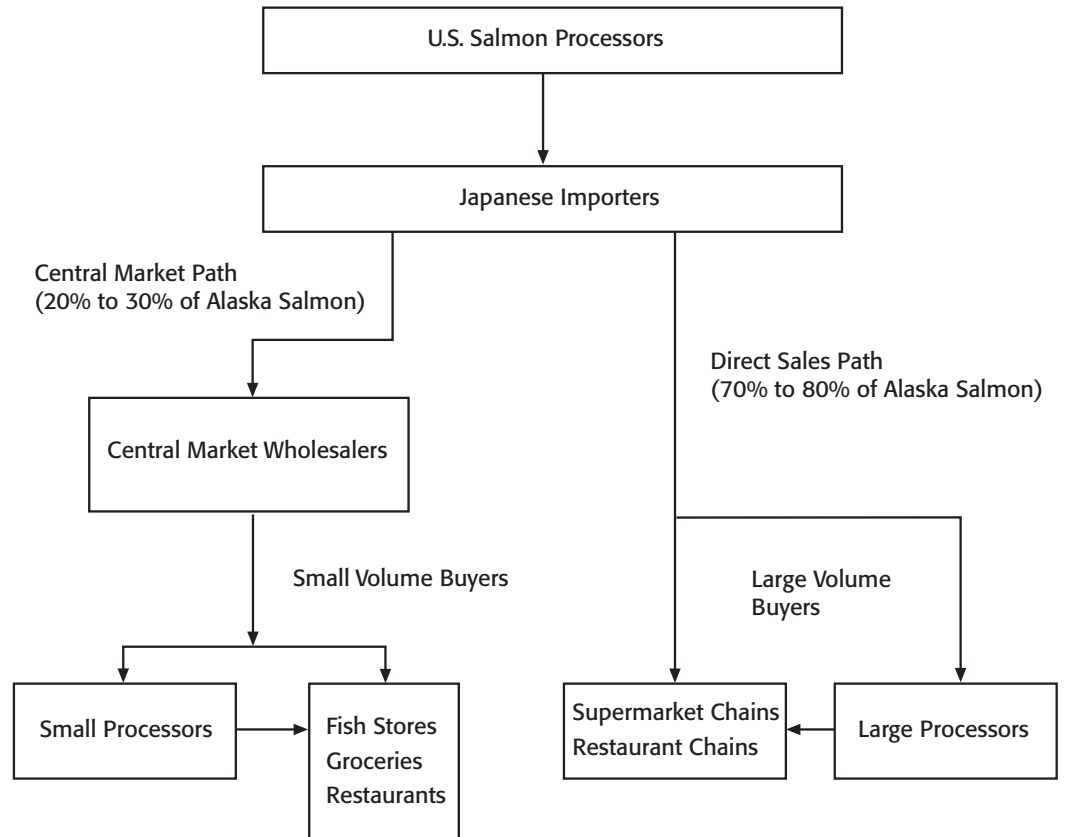
The consumer decides how much money we get for our fish. Each day millions of people decide whether to buy a piece or a can of salmon. If consumers aren't buying, wholesalers have to lower the price, and if they get less for their fish, they have to pay less to their suppliers. The suppliers pay less to the processors, and on down the line to the fishermen. When demand is strong retailers charge more, suppliers charge more, and so on.

## Japan Imported Salmon Distribution System

Japanese importers buy huge volumes of product and resell in large volume lots. Supermarket chains, restaurant chains, large processors, and central market wholesalers sell large volumes of salmon and buy directly from importers. Sales at local fish stores, neighborhood grocery stores, individual restaurants, and small processors are generally not large enough to deal directly with importers. They buy through the central market wholesale system, which breaks down purchases from importers into smaller lots. Large volume buyers avoid wholesalers because wholesalers charge a fee for their services. Approximately 70% to 80% of Alaska salmon is sold directly by importers to large volume buyers.

### SOURCE:

Bill Atkinson in "Japan Salmon Market Wholesale and Distribution," presented at the Alaska Fish Conference and Exposition, October 11, 1991, and personal communication with Bill Atkinson.



Some fishermen believe that the processors set prices, but in truth processors—like fishermen—are price takers, not price setters. They pay the fishermen based on what they think they can get from their buyers. Processors try to predict how much the fish will be worth when it's time to sell, using the same information available to fishermen. They deduct operating and overhead costs and some profit, and pass along the rest to the fishermen in the form of ex-vessel price. Sometimes processors miscalculate, pay too much, and lose money. Other times they make an unanticipated profit. Often they share a portion of the profit with their fishermen in the form of post-season price adjustments.

## What are the effects of exchange rates, inventories, and other indicators of price?

Many factors influence fishermen's prices for salmon. One is predicted supply. Catch predictions influence how much buyers are willing to pay. If the Alaska Department of Fish and Game predicts huge salmon runs, importers won't pay high prices for fish that may be hard to sell over the course of the following year.

Another factor in price is inventories. When the cold storage and warehouses are full, wholesale buyers know they don't have to bid up the price to get product. When inventories are low, wholesalers worry about meeting their customers' demands, so they pay more to ensure they have an enough fish. Inventory reports are key indicators of short term price trends.

Consumption, or the rate at which fish is eaten, influences prices. Big inventories and big landings don't necessarily drive down prices if consumers are

aggressively buying the product. Consumption, in turn, is influenced by factors such as the state of the economy and prices of competing foods, like tuna, chicken, beef, and pork.

Exchange rates are important. Japanese consumers (and retailers, distributors, and wholesalers) pay in yen, but American processors and fishermen want dollars. So importers must use yen to buy dollars. When the dollar is “strong” (and the yen is “weak”) it takes a lot of yen to buy a dollar, or a dollar’s worth of fish. A strong dollar keeps ex-vessel prices low because the cost of a fish product in the weaker foreign currency must remain competitive (inexpensive by U.S. dollar standards) with other food choices the consumer faces. On the other hand, a weak dollar tends to raise the price paid to fishermen because products in the import country will be high by U.S. dollar standards. Alaska fishermen have been fortunate that the dollar has gotten steadily weaker compared to the yen for many years. This has lessened the price impact of increased world salmon supplies.

## **How do competing supplies affect prices?**

Competing supplies of salmon influence prices. Wild Pacific salmon come only from Alaska, the Lower 48, Canada, Japan, and Russia. Farmed salmon are produced in the United States, Canada, Japan, Norway, Chile, Scotland, Denmark, Ireland, New Zealand, Tasmania (Australia), and the Shetland Islands. These sources all produce salmon that compete in the market.

Farmed Atlantic and coho salmon compete with Alaska sockeyes, cohos, and kings. Norway, the United Kingdom, and Chile are the major producers of farmed Atlantics, while Chile and Japan are the big producers of farmed cohos. Japanese buyers of sockeye salmon pay close attention to world production of farmed cohos and Atlantics. With large farmed stocks now available, they no longer have to bid up prices for sockeye salmon like they once did to have an adequate supply of good quality fish. Farmed product can be used if the sockeye supply gets too low or the price too high.

Wholesale buyers have species preferences, but won’t pay much more for their preferred product if they can get something similar for a lower price. Generally, consumers don’t know one species from another, or care. Distinctions between wild and farmed are even less important.

Wholesale buyers do care, however, whether the fish are available year-round, have good quality flesh, and are good-looking on the outside. Salmon farmers can produce uniformly high-quality fish—equal to the best wild salmon—and can deliver them fresh throughout the year.

The worldwide growth in production of all kinds of salmon, especially farmed fish, has pushed fish prices downward, and no change in that situation is expected.

## **Why do prices vary from one part of Alaska to another?**

Fish prices vary from one area to another in Alaska. Why? Differences in operating cost is one reason. In general, it costs more to run a processor in western Alaska than in Southeast or Cook Inlet, because labor, transportation, supplies, and insurance are more expensive. If the fish are worth the same in the market, higher operating costs leave less to pay to the fishermen.

Some fish are worth more than others because of quality. Where fish arrive all at once and are caught in huge quantities, they tend not to be handled as well as

those taken in smaller quantities over a longer period, so they are worth less on the market.

Furthermore, some have better intrinsic quality. Salmon that have a higher oil content in the flesh, such as Yukon River kings and Copper River sockeyes, command a higher price from buyers. Salmon caught at sea tend to have higher oil content than those taken close to the rivermouth. They also tend to be more uniformly bright on the outside and the flesh tends to be less variable in color and texture. Consistent quality is desirable and makes a fish worth more to a buyer.

## How to project prices

How can we use all this information to project ex-vessel prices? One way is to compare the present with the past to estimate the future. This is usually done just before the season starts so that current market conditions have a close connection to the next season's prices. Historical data show how factors affecting price move up and down, and how ex-vessel price changes accordingly. By seeing how current values fit with historical patterns, we can estimate ex-vessel prices in the near future. With practice and time, anyone can judge reasonably well how price will change in the coming fishing season compared to the last.

Factors to watch include:

- Total projected salmon supply, including wild and farmed production of target species and substitutes.
- Inventories remaining from the previous season of target and substitute species.
- Consumption rates.
- Exchange rates.
- Attitudes of traders within the industry, as reflected by reports in industry newsletters and trade journals.

For example, in sockeye salmon markets the total projected supply includes estimated sockeye harvests in Alaska, Canada, and Russia, as well as estimates of wild coho harvests in Alaska and Canada. Farmed salmon production also must be included, particularly coho production in Chile.

Inventories of target and substitute species remaining from the previous season (called carryover) are important because they add to the total projected supply for the next season. Carryover inventory also gives us information about consumption (demand) at the previous season average price compared with the previous supply.

Consumption rate is affected mostly by price. Factors to watch, besides supply, are trends in economic conditions and trends in the price of competing foods. Changes in eating habits (health conscious eating, for example) and advertising can also affect consumption.

Exchange rate influences the price that can be paid for export products. About 85% of Alaska sockeye salmon, 35% of pinks, and 70% of cohos are exported. Three quarters of the sockeyes go to Japan and 10% to Britain. Exported pinks go mostly to Britain. Cohos go to Japan and Canada. The exchange rates to watch are the Japanese yen and the British pound. When the dollar trends down in value over several months compared to either of these currencies and wholesale prices in the import countries remain the same or go up, an importer can pay more to an American processor. In the fish business this means better prices for the fisherman (assuming that catch doesn't go up to the point of driving prices down).

**Table 2: Prices and Catch for Sockeye Salmon**

<b>Year</b>	<b>Ex-vessel sockeye price (\$/lb)</b>	<b>Wholesale sockeye price Japan (\$/lb)</b>	<b>Alaska sockeye salmon catch (million lbs)</b>
1980	\$0.59	\$2.00	187
1981	\$0.87	\$2.91	226
1982	\$0.83	\$2.47	189
1983	\$0.70	\$1.55	306
1984	\$0.77	\$2.42	223
1985	\$0.99	\$2.82	222
1986	\$1.43	\$3.04	195
1987	\$1.55	\$3.77	225
1988	\$2.35	\$5.28	189
1989	\$1.42	\$4.28	261
1990	\$1.28	\$3.46	306
1991	\$0.83	\$3.04	259
1992	\$1.33	\$3.26	343
1993	\$0.71	\$2.47	381

**SOURCES:**

ADF&amp;G 1994 and Knapp 1992.

Finally, it is worth remembering that in Japan, wholesale market prices reflect all of the factors listed above. Buyers at the wholesale level (owners of retail markets, restaurants, processors) are aware of the supply situation at any given time and what consumers are willing to pay. The price they offer to wholesalers integrates the many salmon market factors including the attitudes and moods of traders. Knowledgeable processors and fishermen watch Japan wholesale price over a period of weeks and months to stay abreast of price trends.

## How to understand what you read

Market information is presented in three different ways: written text, tables of data, and graphs. Most often a market report is simply a written explanation of sales, supply, and price trends. Jargon may be used, however, that is peculiar to the business of marketing. The glossary at the end of this publication defines some of the common jargon used in salmon market discussions.

Numbers concerning production and price, especially over a period of months or years, are commonly presented in tables. Tables efficiently present data and can be used to find relationships between sets of data. Table 2 gives numerical information about catch volume, ex-vessel price, and wholesale price in Japan for Alaska sockeyes.

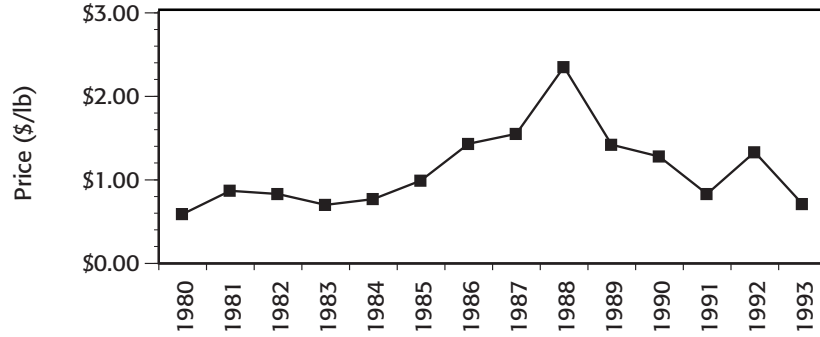
It is not always easy to spot relationships in a table. Relationships are easiest to see when data is plotted on a graph. For that reason graphs are commonly used in salmon market articles.

The three following graphs, plotted from numbers in Table 2, show increasing levels of complexity in relationships. The first simply shows how average ex-vessel price for sockeyes in Alaska has changed since 1980. The next graph goes a step further and shows how both ex-vessel price in Alaska and average wholesale price for sockeyes in Japan have changed during the same period. With two sets of data on one graph it is easy to compare the prices with one another. Do they increase and decrease together and is the difference between the two always the same?

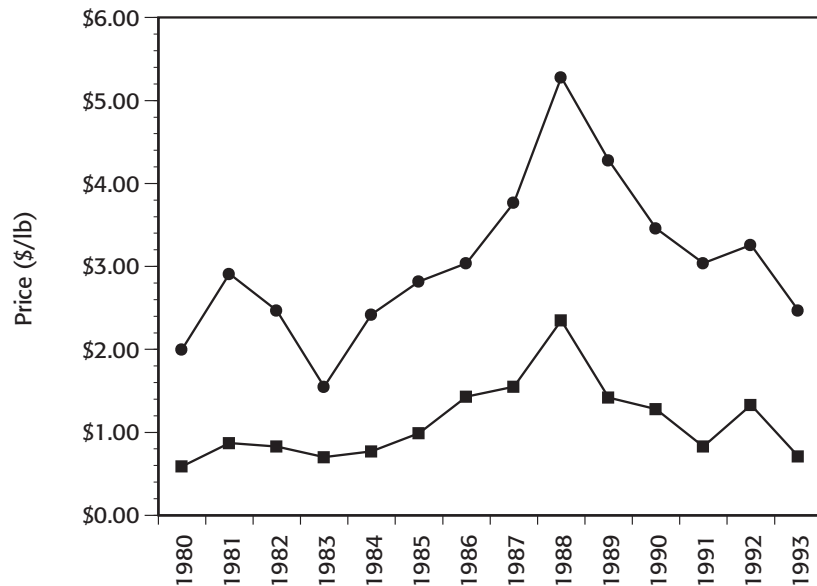
The third graph provides even more facts and relationships. The sockeye catch in Alaska is added to the data about ex-vessel and wholesale prices. Notice that the scale for price is on the left side of the graph and the scale for pounds is on the right. In this graph the relationship between price and sockeye supply can be



### Alaska Ex-Vessel Sockeye Price

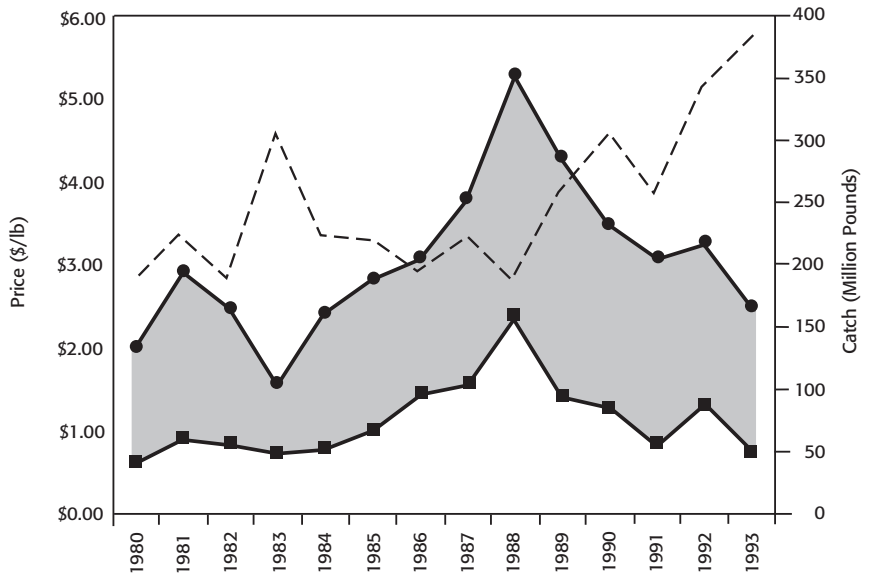


### Alaska Ex-Vessel Sockeye Price (■) and Japan Wholesale Price (●)



Since 1980, ex-vessel price and Japan wholesale price have increased and decreased together.

### Alaska Sockeye Catch (--) vs. Wholesale (●) and Ex-Vessel Price (■)



Since 1980, when Alaska sockeye catch has increased, price has decreased.

seen. When the Alaska sockeye catch increases or decreases, how is price affected? Is the change in catch from one year to the next proportional to the change in ex-vessel price and wholesale price? Is the cause-and-effect relationship between catch and price different in later years compared with earlier years, or is it about the same? It often takes time to study graphs in order to understand the significance of the relationships they show.

## **Final note**

The fundamentals of salmon markets laid out in this publication provide a background for understanding salmon market information found in fishing industry newsletters, trade magazines, and the Salmon Market Information Service reports. Understanding what is happening in the markets allows a fisherman to make better short-term and long-term business plans.

If you want more information about salmon markets, or if you need help interpreting the information you have, call or visit your local Sea Grant Marine Advisory Program office.

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## Glossary of salmon market terms

- Broker:** An agent who sells a product for the owner, for a commission. Usually brokers do not buy product or acquire any ownership. Fees usually are 3% to 5% of the sales price.
- CIF:** Cost, insurance, freight. The price an importer or wholesaler pays for fish which has been processed, and for which insurance and freight fees have already been paid. It is processor cost plus freight and insurance.
- Distributor/Wholesaler:** An agent who buys large lots of product and then sells small quantities to many food service or retail outlets.
- Domestic:** Within the same country. The U.S. domestic market includes all of the United States.
- Exchange rate:** The value of a unit of a particular currency, expressed in units of another currency.
- Export:** Sent outside the country of origin.
- Ex-vessel:** The price paid to fishermen.
- Food service industry:** The group of food providers that includes restaurants, and cafeterias in establishments like schools, hospitals, nursing homes, prisons, and businesses.
- FOB:** Free on board. A term used in a sales agreement which specifies that the buyer is responsible for all transportation costs including freight and insurance from the location designated on the shipping document.
- 48 tall basis:** The units in which canned salmon price and production are quoted. A method of expressing canned salmon production, regardless of can size, so that production from one year to the next can be compared.
- Ikura:** Processed salmon roe product consisting of individual eggs.
- IQF:** Individually quick frozen.
- Inventory:** The amount of product currently kept in storage ready for sale. Carryover is inventory at the beginning of a new season which remains from the previous season.
- Marketing:** The business of tailoring the right mix of product form, price, and promotion to a specific segment of the population to meet a sales goal.
- Market niche:** A segment of the population that buys a certain product because it suits their needs in terms of product form, price, packaging, and promotion style.
- Metric ton:** 2,200 pounds
- Processing yield:** Processed weight divided by the original whole fish weight. The result is given as a percentage.
- Sujiko:** Processed salmon roe product where the eggs remain in the skein (see ikura).
- Terminal area:** At the mouth of a river or near a hatchery where fish spawn.
- Value added:** Further processing or packaging of a product which causes the product to sell for a higher cost.
- Wholesale price:** The price paid by restaurants and retailers, and food service establishments. Not to be confused with the “first wholesale” or “producer” price, which the processor receives.
- Yen per kilogram:** The way fish is priced in Japan. A kilogram is 2.2 pounds. To convert: (1) divide the ¥/kg price by 2.2 to get a ¥/lb. price (2) divide the ¥/lb. price by the exchange rate to get \$/lb. Thus fish priced at 500¥/kg converts to \$2.06/lb, at a 110¥/\$ exchange rate.



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