

# ***A FRESH SEAFOOD DISTRIBUTION CENTER: AN ASSESSMENT OF NEED***

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## Study Purpose and Scope

The research for this publication was conducted under a cooperative agreement between World Trade Center Alaska and U.S. Department of Agriculture, Agricultural Marketing Service, Transportation and Marketing Programs (TMP), administered by Barbara Robinson, Deputy Administrator. Tim Payne, Economist, Market Services Branch (MSB) was Project Leader.

World Trade Center Alaska (WTCAK) is a membership, non profit corporation 501(c) (6) provides customized services to members to facilitate and enhance international trade and investment in and through Alaska. WTCAK is licensed by World Trade Centers Association and affiliated with over 350 trade centers throughout the world. World Trade Center Alaska has the website <http://www.wtcak.org> with a complete description of programs and services.

The purpose of this study is to evaluate the need for a central seafood distribution facility in Anchorage, Alaska, and describe the distribution channels and methods for shipping fresh seafood from Southcentral to domestic and international markets.

McDowell Group measured the volume of fresh seafood shipped through Southcentral Alaska, determined the primary transportation patterns and resources used by the Southcentral fresh seafood industry, and assessed the level of interest by the industry for a distribution center. Key results from this study are presented below:

## Market Volume

A substantial volume of seafood product is shipped annually to outside markets from Southcentral Alaska. In the year 2000, 30 million pounds of fresh Alaska seafood was sent to markets outside the state from this region.

Approximately 42 million pounds of fresh seafood was shipped out of Southcentral, Prince William Sound, Kodiak, and Western Alaska during 2000. Of that, about 18 million pounds were shipped by air, 21 million pounds were trucked via the Alaska Highway, and three million pounds transported on container ships. Approximately seven million to eight million pounds of the total were flown to Anchorage from Alaska communities outside the Southcentral region.

## Product Movement

Each mode of transportation has different supply chains. For air shipments, seafood is either trucked or flown to Anchorage where it's distributed to Lower 48 markets on passenger flights. A very small quantity is shipped on dedicated cargo freighters.

Fresh seafood that is trucked directly to outside markets originates primarily out of Homer, Seward, Kenai, and Valdez. Some fresh product is trucked or flown to Anchorage, then redistributed by truck to outside markets. This fresh product usually comes from Western Alaska waters, the Kodiak area, and Prince William Sound.

A small amount of fresh seafood is trucked from other Southcentral communities to Anchorage, then loaded on container ships for delivery to Tacoma, Washington. In addition, some fresh salmon is shipped out of Cordova using a landing craft to Whittier, where it is loaded on a truck, delivered to Anchorage and positioned on the ship.

Using all three of these transportation methods, freight forwarders serve as a shipping coordinator for many customers. Freight forwarders locate available space on aircraft or trucks and monitor the shipment of the fresh seafood to outside customers. Freight forwarders also can hold fresh seafood for their customers for up to 24 hours.

A small amount of fresh seafood stays in Anchorage and other Alaska markets.

## **Demand for Distribution Center**

Seafood suppliers, buyers, and transportation executives were interviewed about the need for an Anchorage-based central distribution center for fresh seafood. While opinions varied, the majority of those interviewed did not see a need for the facility at this time. They reported that sufficient distribution capacity is available to meet customer demand. These key informants also believe a central facility would increase shipping costs and handling times. In the perishable world, longer shipping time amounts to lost shelf life. The typical shelf life for fresh seafood is 12 to 14 days. At this point in time, a central distribution facility could add time to market.

A smaller number of companies reported the need for a central distribution center in Anchorage. Advantages include more refrigerated space, a central point for buying and selling fresh seafood, space for consolidation, and a central pickup point for truck backhaul.

According to transportation experts who handle perishable products, two main issues need to be addressed for an Anchorage distribution facility to be successful. First, the facility must have consistent flow of fresh seafood year around in order to be profitable. On a daily basis, overhead expenses at an Anchorage facility would include labor, electricity, natural gas, and water among other things, incurred on a year-round basis. The seasonal seafood industry, however, does not lend itself to a consistent year-round source of fresh seafood. The seafood industry is also dependent upon the ability of the fisher to track and harvest wild fish. The unpredictability in harvesting wild fish often results in thousands of pounds of fresh seafood one day and little or nothing for the next three days. A central seafood distribution center would have wide variability in volume of fresh seafood moving through the facility.

The second issue is the high monetary cost of acquiring land and building a central facility. These costs would then be passed on to customers in the form of higher shipping fees.

## **Summary**

Although the central distribution facility concept has some merit and may be worthy of further research, the facility would likely have limited success in Anchorage at this time. The primary reasons supporting this conclusion include:

- Current shipping and refrigerated holding capacity meets demand
- Lack of consistent flow of fresh seafood through the facility would present operational cash flow challenges
- Customers using the facility would incur additional monetary and time costs

McDowell Group recommends a comprehensive financial feasibility analysis to explore the finance and usage costs of an Anchorage-based facility.

## **Recommendations**

Although the distribution center may not be a viable option currently, several segments in the fresh seafood supply chain need improvement. Based on interviews and other research conducted

for this study, the McDowell Group has identified the need for changes in the system for moving fresh fish to the marketplace. In its position as a promoter of Alaska products, the World Trade Center Alaska could assist the fresh seafood industry in improving logistics of transporting seafood to market. McDowell Group recommendations include:

- Continue to pursue innovative and economical ways to ship fresh and live seafood from outlying communities to Anchorage. This would increase the variety and volume of fresh seafood sales outside Alaska.
- Add a scheduled delivery to Anchorage from communities such as Homer, Seward, and Kenai, which would allow the supplier coordinate deliveries to Anchorage to meet scheduled services to outside markets. The likely result would be more consistent supply of fresh seafood trucked to Anchorage as well as lower transportation costs.
- Continue to improve the quality of Alaska fresh seafood. Historically seafood buyers have been discouraged by the wide variability in Alaska fresh seafood quality. By delivering a consistently high-quality product, the price, product image and demand for fresh Alaska seafood will increase.
- Improve communication between shippers and air carriers regarding transportation of fresh seafood. This would, in turn, improve handling procedures, thus increasing quality and demand for more Alaskan product.
- Improve airport facilities in outlying communities. Better facilities would lower shipping costs and allow a greater volume of fresh product to reach outside markets.
- Help processors secure capital to upgrade processing technology, freezing and icing facilities. This would allow significant value-added economic activity in Alaska rather than after the product is shipped outside.
- Consolidate fresh seafood shipments to outside markets. By shipping full loads rather than partial loads, customers can reduce the cost of shipping. A full load would be 44,000 pounds of fresh seafood.

The potential feasibility of a central distribution facility is enhanced if a number of these recommendations are followed. The result would be more consistent supply, a better supply chain, better product quality, more timely delivery, and more instate value-added economic activity.

# SCOPE OF WORK AND METHODOLOGY

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## Introduction

Alaska is home to many of the nation's top fishing ports. The Alaska seafood industry dates to the 1890s, when the first salmon canneries began operating in the Alaska Territory.

### Map of Alaska



Canneries and salteries dominated Alaska's seafood industry throughout the territorial period. After a slump in the 1950s and 1960s, the industry began to recover, due in part to a shift in product form. After the crab fishery peaked in the 1970s, and salmon and halibut stocks rebounded in the 1980s, production and profits boomed for Alaska's seafood industry, driven by strong demand and prices for frozen seafood. Growth slowed through the 1990s as the industry matured and new regulations were established to curb overcapitalization.

While most Alaska fish stocks remain healthy, the state's seafood industry faces new political challenges and new market competition. In today's international marketplace seafood consumption has increased, driven in part by the consistent availability of fresh seafood from aquaculture producers. The most dynamic growth has been in fresh seafood products.

Today's Alaska fishing fleet delivers its catch to ports along the entire coastline, much as it did at the turn of the last century. But as the nature of Alaska's fishing industry has changed, so have the opportunities for profitable business growth. Considering stiff competition in salmon and the high cost of harvesting rights in other fisheries, it appears that increasing value rather than volume may be the more viable route to profitable growth. The Alaska seafood industry is looking toward the fresh sector to help accomplish this.

Often overlooked, shipping plays an important role in the success or failure of Alaska's fresh seafood industry. On any given day, aircraft, ships and trucks loaded with thousands of pounds of fresh seafood are on the move in Alaska. Complicating this complex shipping process is the distance from fishing grounds to market. Under the best of circumstances, the distance is thousands of miles. This leaves the Alaska seafood industry at a slight disadvantage compared to other domestic fresh seafood businesses. In general, every pound of fresh seafood shipped from

Alaska to the Lower 48 incurs a shipping cost ranging from 8 cents to \$1.35 per pound, depending on mode of transportation and final destination.

## **Scope of Work**

To understand the movement of the fresh seafood industry in Southcentral Alaska, the World Trade Center Alaska contracted with McDowell Group, Inc. to study the shipping infrastructure in the region. The object of this study is two-fold. The first task is to describe the distribution channels and methods for shipping fresh Southcentral seafood. The study addresses the following questions: How is fresh seafood transported out of Southcentral Alaska? How much fresh seafood has been shipped over the last five years? What are the primary modes of transportation? Are there any obstructions in the transportation link?

Currently, the fresh seafood transportation industry could be characterized as a disaggregated network of transportation businesses operating independently. In most cases, each transportation business uses separate refrigerated facilities, office space and shipping equipment. One of the benefits of a central distribution center would be to eliminate duplication by allowing businesses to share costly refrigerated space, office space and equipment, thereby reducing overhead costs. In addition, the facility would bring together the resources needed to consolidate fresh seafood shipments.

Another benefit of a seafood distribution center is its ability to serve as a catalyst in creating a central market for fresh Alaska seafood. With the fresh seafood market disaggregated across many businesses throughout the state, a central collection point would likely result in a higher concentration of fresh seafood products at one source. This would attract buyers looking to purchase fresh seafood. The result is enhanced commerce through free exchange of price and supply information for all parties.

The central distribution concept is not new to the shipping industry. There are many examples throughout the U.S., particularly in the agricultural industry. In nearly every state, for example, central distribution facilities are the collection point for locally grown vegetables and fruits. A primary benefit is the concentration of suppliers and buyers. By bringing together regional suppliers and buyers, commerce is enhanced and time costs associated with collecting price and supply information is reduced. These facilities also enable suppliers and buyers to reduce overhead expenses by accommodating flexible lease or rent space and allowing limited value-added services like boxing and labeling. This same concept is applied on a much larger scale at a few major airports around the world. For example, in Miami, Florida, Hellmann Perishable Logistics manages a large central distribution center that collects and moves fresh seafood, vegetables, fruits, and flowers from South America to customers all over North America.

Not all distribution centers across the nation are successful. For example, a state-of-the-art distribution facility for perishable products in Orlando, Florida has been struggling since it opened about a year ago due to the limited demand for U.S. perishable products shipped to South America.<sup>1</sup>

McDowell Group was asked to assess current industry demand for the facility and to explore some of the positive and negative aspects of an Anchorage distribution center. Any research to determine the financial feasibility of an Anchorage-based distribution facility would require a full cost and benefit analysis, which is beyond the scope of this study.

## Methodology

The primary methodologies used in the study were executive interviews and secondary data analysis. Interviews were conducted with over 30 industry experts, including seafood processors, buyers, shippers, and carriers. (See Appendix for interview questions and key informants.) Interview questions explored the following subjects:

- Product form
- Current and historic market conditions
- Methods of transportation
- Sources and destinations of fresh seafood
- Status of shipping infrastructure
- Methods for refrigerating fresh seafood
- Problems with the transportation of fresh seafood
- Demand for a central distribution center

In addition, the research team interviewed transportation experts who handle perishable products outside of Alaska. Experts included managers of facilities that concentrate on perishable products and representatives of freight forwarders who specialize in perishable products.

Harvest and fresh seafood production data was gathered from the Alaska Department of Fish and Game and the National Marine Fisheries Service. Statistics provided include harvest and production data for salmon and halibut from Cook Inlet, Kodiak, Prince William Sound, and Western Alaska. Production and harvest data was not available for all Southcentral communities. Communities with fewer than three harvesters or processors were aggregated with other communities.

The study team also reviewed the periodic literature for information on seafood warehousing, and shipping fresh seafood and perishables.

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<sup>1</sup> Stewart Tenner, U.S. Representative for Frankfurt (Germany) Airport Authority, and Ken St. Amand, Greater Orlando Aviation Authority. Interview by author.

## ***SUMMARY OF PREVIOUS RESEARCH***

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Two 1990s studies of the feasibility of building and operating a cold storage warehouse in Anchorage indicated no strong support in the seafood industry for such a facility. A 1990 study for the Anchorage Economic Development Corporation<sup>2</sup> assessed supply and demand for cold storage space. The authors relied primarily on executive interviews of industry experts, with these results:

- There were no major seafood cold storage warehouses in Alaska
- Cold storage costs in Southcentral Alaska were higher than Seattle
- Fishermen had some interest in using the facility to market their product
- Anchorage wholesale/retail operators did not see a need for the facility
- Seafood brokers interviewed said they would use the facility
- Airline companies saw no demand for the facility
- Prince William Sound processors said they might have need for a facility
- Processors in Western Alaska expressed interest in chill space for fresh product
- Cook Inlet processors were split between those who expressed interest and those who had no interest

A 1992 study of the construction and operation costs of a potential cold storage warehouse facility relied on analysis of historical catch data.<sup>3</sup> Conducted for the Anchorage Economic Development Corporation, the study also included a survey of the seafood industry. Results from the study are summarized below:

- Demand analysis of non-seafood and seafood indicated the need for a cold storage facility in Anchorage
- Seafood production from Cook Inlet and Prince William Sound would provide enough demand for new cold storage facility
- Existing cold storage facilities for non-seafood products are at capacity

Both studies noted two primary reasons for lack of major cold storage space in the Anchorage area. These conditions are present in 2001:

- Alaska is a place of production, rather than consumption
- Alaska commercial fisheries are seasonal

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<sup>2</sup> Graystar Pacific Seafood, Ltd. and Coopers & Lybrand, "A Public Cold Storage Warehouse in Anchorage Preliminary Feasibility Study," 11 July 1990.

<sup>3</sup> Anchorage Economic Development Corporation, "Anchorage Cold Storage Facility, A Feasibility Analysis," June 1992.

# ***HARVESTING AND PRODUCTION TRENDS***

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## **Harvesting**

In terms of pounds, salmon was primarily the only fresh seafood species produced in Alaska prior to 1995. Halibut fisheries played only a minor role in the Southcentral Alaska seafood industry, until the North Pacific Fishery Management Council instituted the Individual Fishing Quota (IFQ) system halibut and sablefish in 1995. Since then, Homer and Seward have experienced dramatic expansion in halibut and sablefish landings, and have become the leading ports for halibut in Alaska.

Location is a primary reason for the sudden interest in Homer and Seward. Both are relatively close to the fishing grounds and provide access to the Southcentral road system. Before IFQs, large amounts of halibut were frozen and moved outside Alaska by container ships. Now more halibut is sold fresh and shipped by trucks and airfreight.

Table 1 highlights the pounds of halibut landed at eight Southcentral Alaska communities between 1995 and 2000. All landings were compiled from data provided by the National Marine Fisheries Service.

Homer landings jumped from three million to 10 million pounds between 1995 and 1998, giving Homer the current title of top-producing halibut port in Alaska. Halibut landings also have increased in Seward and Whittier since 1995. Kenai landings have remained relatively stable, and landings in the towns of Kasilof, Nikiski and Seldovia have declined.

**Table 1**  
**Pounds of Halibut Landed in Southcentral Alaskan Ports, 1995-2000**

1

<b>Port of Landing</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
Homer	3,148,250	3,943,651	5,192,623	10,358,062	11,563,889	9,569,581
Seward	2,775,481	3,201,294	4,732,861	5,469,734	6,823,915	5,503,351
Whittier	102,631	221,869	281,750	304,527	372,546	304,017
Kenai	257,830	364,276	249,075	262,914	189,431	153,560
Seldovia	2,148	1,009	1,161	2,374	2,273	2,042
Kasilof	6,557	2,822		1,599		
Nikiski	34,647	14,081		101		
Port Graham			42,029			
<b>Total</b>	<b>6,327,544</b>	<b>7,749,002</b>	<b>10,499,499</b>	<b>16,399,311</b>	<b>18,952,054</b>	<b>15,532,551</b>

Source: U.S. Department of Commerce, National Oceanic Atmospheric Administration, National Marine Fisheries Services

Table 2 shows sablefish landings for Southcentral communities from 1995 to 2000. Seward sablefish landings averaged more than seven million pounds per year from 1995 to 2000, accounting for nearly a quarter of all sablefish caught in Alaska during that period. Nikiski and Kenai had substantial landings in 1995, but showed no landings by 1999.

**Table**  
**Pounds of Sablefish Landed in Southcentral Alaskan Ports, 1995-2000**

2

Port of Landing	1995	1996	1997	1998	1999	2000
Seward	9,207,388	7,881,643	7,049,942	6,994,443	6,239,105	6,764,318
Homer	1,275,575	1,232,451	1,020,091	1,296,309	1,510,581	1,426,469
Whittier	149		4,325	10,267		800
Kenai	234,465	6,115	19,149	29,026		
Nikiski	49,220	1,679				
<b>Total</b>	<b>10,766,797</b>	<b>9,121,888</b>	<b>8,093,507</b>	<b>8,330,045</b>	<b>7,749,686</b>	<b>8,191,587</b>

Source: U.S. Department of Commerce, National Oceanic Atmospheric Administration, National Marine Fisheries Services

Table 3 highlights salmon landings in Southcentral ports from 1995 to 1999, as reported by the Commercial Fisheries Division of the Alaska Department of Fish and Game.<sup>4</sup> Since 1995, Kenai, Homer and Seward have traded places as the primary port for salmon deliveries. In 1999, Seward landed 22 million pounds of salmon, followed by Kenai at 13 million pounds and Homer at nearly four million pounds. Between 1995 and 1999, Kenai landed more salmon than other ports in the Southcentral region.

**Table**  
**Pounds of Salmon Landed in Southcentral Alaskan Ports, 1995-1999**

3

Port of Landing	1995	1996	1997	1998	1999
Kenai	19,906,180	26,211,924	30,054,495	17,042,574	13,119,008
Homer	14,542,433	13,990,863	15,284,589	5,280,103	3,731,978
Seward	6,569,206	6,818,259	11,025,843	15,941,517	22,458,796
Whittier	5,295,546	11,032,068	11,258,399	10,173,104	149,297
Kasilof	2,081,677	2,787,596	3,258,523	729,013	1,594,646
Ninilchik	376,315	625,290	552,561	357,487	651,186
Seldovia			1,951,741		
Port Graham				263,228	568,267
<b>Total</b>	<b>48,771,357</b>	<b>61,466,000</b>	<b>73,386,151</b>	<b>49,787,026</b>	<b>42,273,178</b>

Source: Alaska Department of Fish and Game, Commercial Fisheries Division

<sup>4</sup> The landings data is limited to larger ports. When a port has fewer than three fishermen making landings, the data is considered confidential and not released to the public.

## **Market Factors**

Aquaculture production and transportation factors have resulted in a major market shift toward fresh product for both salmon and halibut.

### **Salmon**

During the 1990s farmed salmon production grew rapidly, eclipsing the world's wild salmon production at the end of the decade. In 2000, about 60 percent of the world's salmon supply was farmed salmon, compared to 24 percent in 1990. The proportional increase is particularly significant in light of record-setting wild salmon harvests throughout the decade, in Alaska and elsewhere.

Most of the Alaska salmon harvest occurs during July and August. The processing industry has traditionally dealt with this logistical challenge by freezing or canning the majority of the harvest. Prior to 1997, the percentage of Alaska salmon sold as fresh product never exceeded seven percent and rarely exceeded four percent.

This seasonal constraint left the door of the U.S. fresh market open to salmon farmers. One of the most important factors contributing to their remarkable success is the ability to supply fresh product throughout the year. U.S. imports of salmon tripled from 50,000 metric tons in 1990 to 150,000 metric tons in 2000. Virtually all salmon imports to the U.S. are in fresh product forms.

A combination of unfavorable foreign exchange rates and Japanese market erosion due to farmed salmon have made sales to the U.S. market more attractive to Alaska salmon producers. While the canned segment of the U.S. market remains stable, the growth segment of the U.S. salmon market is in fresh product.

### **Halibut**

With the shift in management of the halibut longline fishery to the Individual Fishing Quota (IFQ) system in 1995, fishery managers controlled harvest by controlling the length of the season. This resulted in seasons as short as two or three days per year. In some years, the statewide halibut harvest averaged more than 20 million pounds per day. The quality implications of such a compressed harvest are obvious.

The IFQ management system was implemented in 1995. Fishermen with qualifying catch history were granted the rights to harvest a specific portion of the allowable catch based on their harvest history. These quotas may be bought, sold and consolidated.

The most significant market impact of the IFQ management system has been the extension of the season. With effective harvest limitations in place, the season has increased to eight months. Fishermen with halibut quota may harvest halibut any time during the season. The increased window of availability has created a thriving domestic fresh market for halibut.

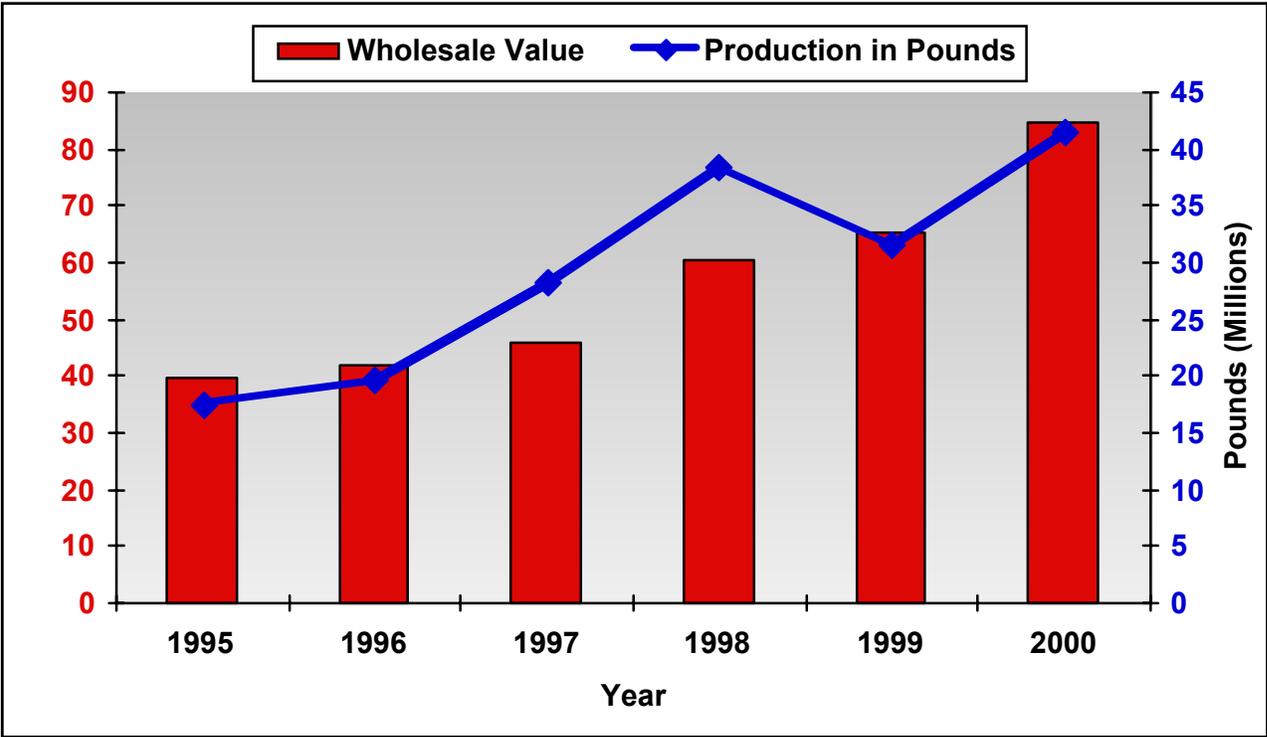
## **Fresh Seafood Product**

Fresh seafood production in Cook Inlet, Prince William Sound, Kodiak, and Western Alaska has seen dramatic increases from 1995 to 2000. Figure 1 depicts this remarkable growth in production and wholesale value during this five-year period. In 1995, production from Cook Inlet, Kodiak, Prince William Sound, and Western Alaska totaled approximately 18 million pounds of fresh seafood at wholesale value of \$40 million. Five years later, these same regions produced 42 million pounds for a total wholesale value of \$85 million. During this period, fresh seafood production increased by 148 percent, while wholesale value increased 114 percent. (See Appendix for detailed production data of fresh seafood. )

Southeast Alaska experienced a decline in production and wholesale value during the 1995 to 2000 period. During this period, Southeast production fluctuated between 57 million pounds in 1996 to a low of 13 million pounds in 1999. In 2000, Southeast produced 39 million pounds of fresh seafood. Total wholesale value remained relatively flat during this period. In 1999, wholesale value for fresh seafood in Southeast Alaska was \$19 million. Five years later, wholesale value was \$17 million.

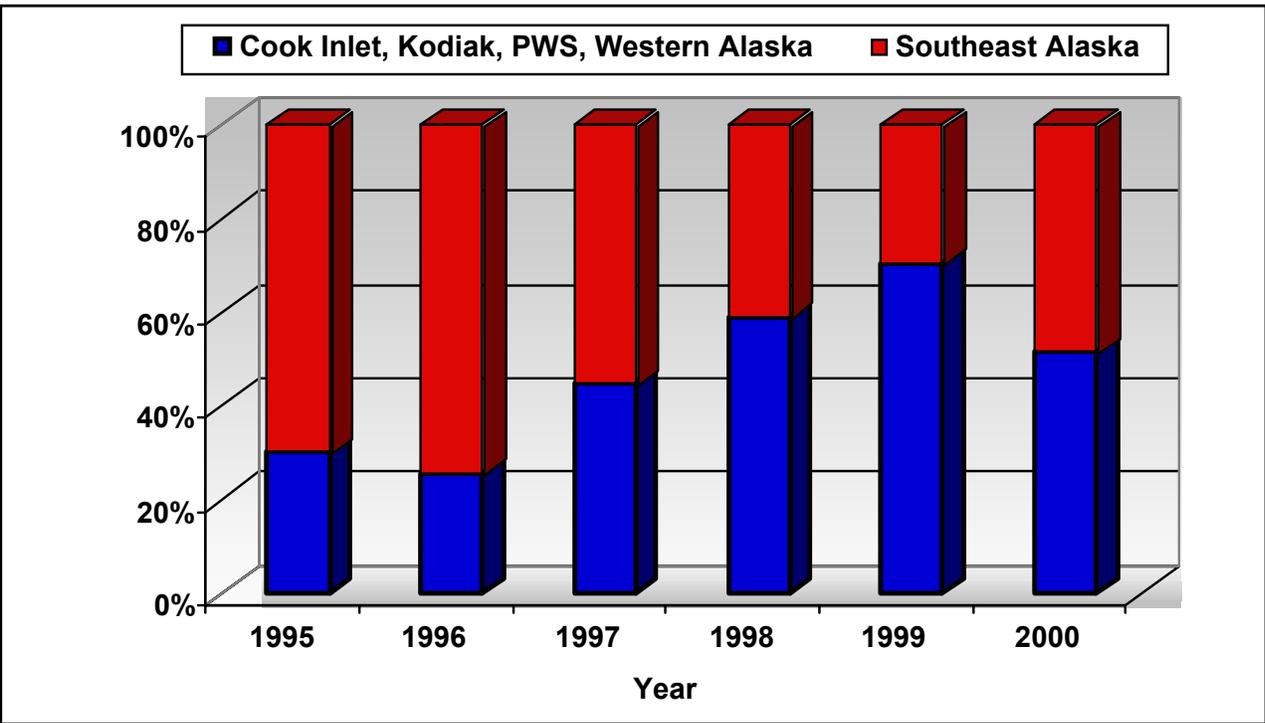
Even more startling is the loss in fresh seafood product in Southeast Alaska compared to Southcentral and Western Alaska. Figures 2 and 3 show this decline in production and wholesale value in reference to increases in Southcentral and Western Alaska. In 1995, Southeast produced over 70 percent of all the fresh seafood in Alaska. By 1999, Southeast production had fallen to 29 percent. In 2000, Southeast's portion of fresh seafood production had gained some ground, coming in at approximately 47 percent of the total production for the state. In that year, total Alaska production of fresh seafood was approximately 80 million pounds for a wholesale value of \$102 million.

**Figure**  
**Fresh Seafood Production and Wholesale Value for Cook Inlet, Kodiak, Prince William Sound, and Western Alaska, 1995 to 2000**



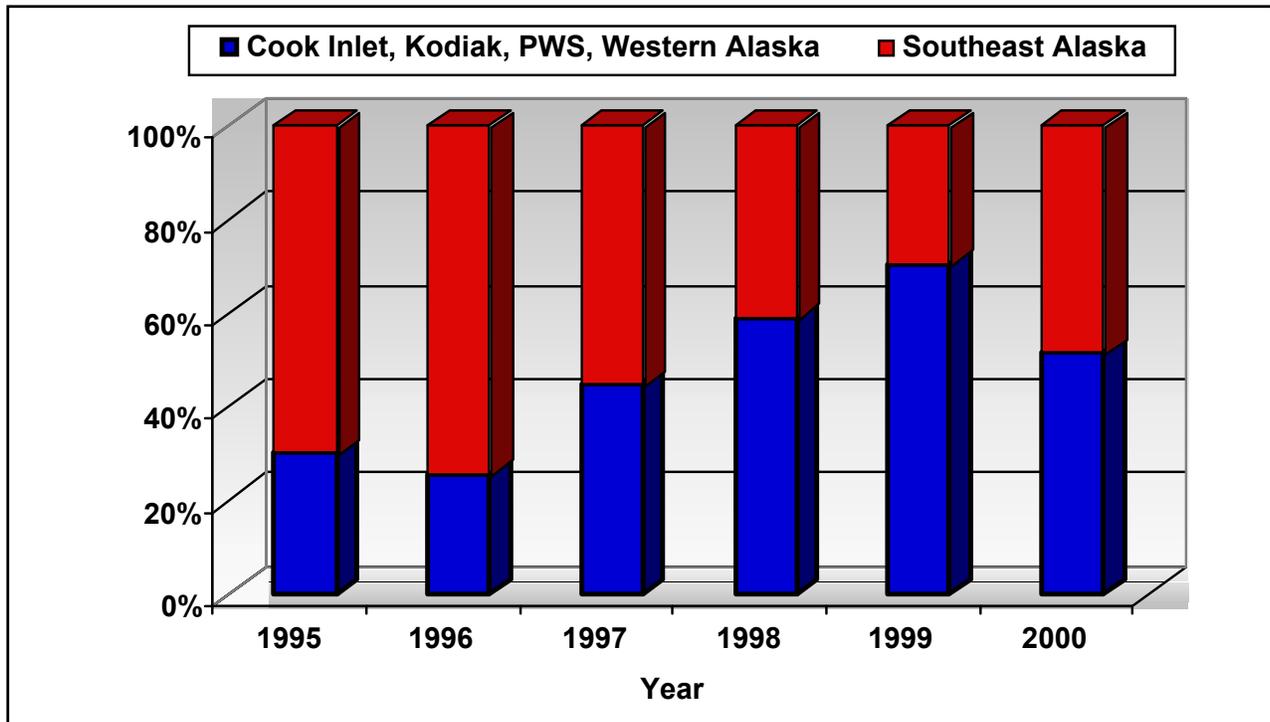
Source: Alaska Department of Fish and Game

**Figure**  
**Percent of Total Alaska Production for Fresh Seafood by Region, 1995 to 2000**



Source: Alaska Department of Fish and Game

**Figure 3**  
**Percent of Total Alaska Wholesale Value**  
**Fresh Seafood by Region, 1995 to 2000**



Source: Alaska Department of Fish and Game

Cook Inlet and Prince William Sound were the largest contributors of fresh seafood during the 1995 to 2000 period. Cook Inlet production was split between halibut and salmon during this period. However, Prince William Sound produced primarily fresh salmon. In 1995, Cook Inlet production was approximately three million pounds of halibut and five million pounds of salmon. During the same year, Prince William Sound produced 1 million pounds of halibut and five million pounds of salmon. Five years later, Cook Inlet produced seven million pounds of halibut and slightly less than eight million pounds of salmon. Prince William Sound produced less than 1 million pounds of halibut and 17 million pounds of salmon.

Kodiak and Western Alaska produced nearly nine million pounds of fresh halibut and salmon in the year 2000. Kodiak contributed three million pounds of halibut and over one million pounds of salmon. Western Alaska produced three million of halibut in 2000, and slightly more than one million pounds of salmon.

# ***FRESH SEAFOOD TRANSSHIPMENT***

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Transportation of fresh seafood in Southcentral Alaska is a diverse industry. Unlike frozen and canned seafood where the primary mode of transportation is container ship, the fresh seafood industry utilizes airfreight, truck, and container ship. The need for a variety of transportation modes is due in part to the strong emphasis on reducing costs and travel time to market while maintaining product quality. As a result, the fresh seafood supply chain is often complex and dynamic. In some cases, three different modes of transportation are utilized to ship fresh seafood from an outlying region to the final market.

Details on the supply chain were collected from interviews with key informants in the seafood industry. Interview responses are summarized and presented below, in three main categories: intrastate transportation, domestic and international transportation, and logistical problems.

## **Intrastate Transportation**

One of the biggest challenges in Alaska's fresh seafood industry is how to ship product from the outlying areas to Anchorage or other communities. For those lucky enough to be on the Southcentral road system, it is a simple matter of contacting one of the local trucking companies to haul product to Anchorage. The shipping challenge can be daunting and expensive, however, for seafood suppliers not on the road system. For example, many communities in Western Alaska have limited or no chilled warehouse space for storing fresh seafood. Rural airports have limited infrastructure, thus restricting the type of air service that is available. Despite these challenges, an estimated seven million to eight million pounds of fresh seafood is shipped annually from rural Alaska communities to Anchorage.

Shipping rates from outlying areas vary greatly. Typical shipping fees for scheduled service to Anchorage range between 17 cents and 39 cents per pound, depending on carrier, shipment weight, and distance of shipment. In cases where there is limited or no scheduled service, charter flights are often the only means of transporting product. Charter flights can cost from 30 cents to 89 cents per pound, depending on carrier, shipment weight, distance of shipment, and if freight or passengers shared the charter flight.

Anchorage is the primary distribution hub for intrastate fresh seafood shipments. The largest portion of fresh seafood shipped from outlying communities is transported via scheduled air service to Anchorage. Fresh product is also delivered to Anchorage via truck from Homer, Nikiski, Kenai, Seward, and Whittier. Once in Anchorage, shipping customers have several options for redistributing fresh seafood to international and domestic buyers. Freight forwarders will manage and direct the shipping process, or fresh product can be transferred directly to an air carrier or trucking company for delivery to the buyer.

Some fresh seafood is shipped between outlying communities. For example, during an extremely large run of Bristol Bay salmon, processors in the region will be at full capacity, so fresh salmon is sometimes flown to Kenai for processing. Fresh product is also delivered by truck to Kenai from Whittier for processing. Live crab landed in Nome is flown to Dutch Harbor for processing. Salmon and halibut landed in Kotzebue are flown to Unalakleet. After it is processed, the frozen seafood is air shipped to Anchorage for redistribution.

## **Domestic and International Transportation**

Fresh seafood is shipped to international and Lower 48 customers primarily by container ships, trucks, and aircraft. Each mode has its own unique supply chain. Combined, these supply chains make up the primary link between seafood suppliers and buyers.

### **Container Ship**

Known more for moving frozen and canned seafood, container ships carry fresh seafood on a regular basis. In the most recent year, customers shipped approximately three million pounds of fresh seafood via container ship. With a transit time of roughly 66 hours from Anchorage to Tacoma, Washington, these ships can deliver fresh halibut and salmon in a controlled, chilled environment at an economical rate of approximately eight cents per pound. Seafood is stored on ice in refrigerated trailers and then loaded on the ships. While on the vessel, refrigerated trailers are monitored on a scheduled basis in order to maintain strict temperature control of the seafood. At the destination, seafood arrives in Tacoma in excellent shape, ready for the final market or the next link in the supply chain.

Two container ship companies currently operate out of Southcentral Alaska, with five ships a week delivering and receiving freight into and out of Anchorage. Three ships return to Tacoma directly from Anchorage, while the remaining two return via Kodiak and Dutch Harbor. Anchorage and Kodiak are the primary loading points for fresh seafood destined for U.S. domestic markets. Most of the product loaded in Anchorage comes by truck from Homer, Seward, Kenai, Nikski, Deep Creek, Valdez and Whittier. Fresh seafood also originates from communities as far way as Cordova or Kodiak. In the case of Cordova, fresh product is loaded on a Totem Ocean Trailer Express landing craft and then delivered to Whittier, where it is trucked to Anchorage for loading on their container ship. Fresh seafood from Kodiak is loaded directly on the container ship during the weekly stop over at the island port.

## Trucking

With volume growing significantly over the last decade, trucking has firmly established itself as a viable option for transporting fresh seafood to Lower 48 customers. During peak summer months, more than 60 trucks per week are estimated to be in transit between the Lower 48 and Alaska via the Alaska Highway. Some companies have 17 to 30 trucks moving through the Anchorage area on a weekly basis. *Pacific Fishing* reported in a July 2001 article that J. J. Hadley, Inc., agent for MBX, was hoping to expand service to 40 trucks a week.<sup>5</sup> With each truck capable of carrying approximately 44,000 pounds of fresh fish, it is possible that 2.6 million pounds of fresh seafood could be traveling weekly down the Alaska Highway. The McDowell Group estimates that approximately 21 million pounds of fresh seafood was trucked to customers in the Lower 48 in the last year.

The driving forces in the growth of trucking are flexibility, relatively low costs, a strong emphasis on product quality, and controlled handling procedures. Trucking companies appear to be perfectly suited for this unique transportation niche. Direct trucking avoids most potential handling mishaps, since no other shipping party is in possession of the seafood. Product is kept at a stable 27 degrees during transit. Charges range from 10 cents to 12 cents per pound for shipments to the Seattle area.

Another reason for the growth in trucking fresh seafood is the increase in northbound shipments of perishable cargo. Companies are carrying everything from McDonald's hamburger patties to nursery plants to Alaska, with empty trailers available to haul fresh seafood south. "Processors can now count on an empty truck, rather than hoping one shows up when fish are ready to ship out," according to Jeb Wyman in a July 2001 *Pacific Fishing* article. The result is that trucking may likely be the fastest growing segment in the fresh seafood shipping industry.

Trucking companies are picking up Southcentral seafood primarily from Homer, Seward, Kenai, and Anchorage. While the destination could be anywhere in the Lower 48, a large amount of fresh halibut and salmon is delivered to Bellingham, Washington, home to Bornstein Seafood, one of the largest processors in the Pacific Northwest. The buyer, like other Lower 48 buyers, requires door-to-door deliveries with minimal risk of product loss.

While the trucking industry overall has enjoyed increased demand for fresh seafood shipments, many smaller companies are struggling. One company, for example, reported that in a normal year it would haul five to six full shipments of fresh seafood to the Lower 48, but this year it hauled only two partial loads. In contrast, interviews of key informants in three of the largest trucking companies indicate those companies have had an increase in fresh seafood shipments. Clearly, this segment of the trucking industry is still defining itself.

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<sup>5</sup> Jeb Wyman, "Moving Fish," *Pacific Fishing*, pg. 33, July 2001.

## **Air Shipments**

Air cargo is one of the most important modes of transportation for fresh seafood out of Alaska. It is estimated that approximately 18 million pounds of Southcentral and Western Alaska seafood was shipped to U.S. domestic and international customers in the past year.

The Ted Stevens International Airport in Anchorage serves as a crucial link for virtually all air shipments of fresh seafood. The Anchorage airport links communities as far away as Dutch Harbor or Nome to a number of large urban markets in the Lower 48. In 2000, an estimated seven million to eight million pounds of fresh fish was flown from Western Alaska, Kodiak, and Prince William Sound to Anchorage for redistribution to U.S. domestic and international customers. Another eight million to nine million pounds is delivered to the airport from Southcentral Alaska communities.

The Alaska tourism industry plays an important role in this supply chain. Over the last decade, the number of tourists traveling to Alaska has grown significantly. This growth has had a positive impact on the fresh seafood industry by providing expanded airfreight service from passenger planes. In June 2001, the Ted Stevens International Airport reported 5,651 passenger flight landings. Generally, each one of these passenger flights has the potential to carry approximately 2,000 pounds to 5,000 pounds of fresh seafood, depending on the plane type and the destination.

Although Anchorage is home to one of the busiest cargo airports in the U.S., it is extremely rare for transiting air freighters to open their cargo holds to take on fresh seafood while in Anchorage. These aircraft typically only change crew and take on more fuel. In addition, many of the freighters are full, so they are not able to take additional cargo. One carrier who did make it a practice to take on fresh seafood while in Anchorage was United Airlines. Unfortunately, United eliminated their Anchorage-based freighter service in 2000.

Anchorage is an invaluable link in this supply chain. It hosts one of the most important players in the shipment of fresh seafood – the freight forwarder. Normally associated with the airfreight industry, freight forwarders coordinate the shipping of fresh seafood from Southcentral seafood suppliers to a buyer or broker-specified destination. The brokers or buyers will often specify which Anchorage-based freight forwarder the supplier should use. The freight forwarder arranges for transportation to the final destination. Freight forwarders then arrange shipment of fresh seafood by securing cargo space and preparing seafood for shipment in airfreight containers. A broker or buyer can also elect to temporarily store fresh product with freight forwarders. In general, the maximum length of time fresh seafood is held 24 hours. After fresh seafood has been prepared for shipment, it is delivered to the carrier for loading. Forwarders then monitor the shipment, making sure connecting flights are made and product is placed in chilled space during layovers.

Freight forwarders have carved out a niche in a dynamic and complex business, through the coordination of seafood shipments and the value-added services. They provide value-added services for their customers, such as consolidating partial shipments, packaging, labeling, boxing, icing, refreshing of fresh seafood, tracking, manifesting, and refrigerated holding. Some freight forwarders also hope to expand their value-added services, including better inventory control tracking system for seafood in transit, larger workspace, and automated boxing and labeling.

## **Logistical Problems**

One of the primary goals in studying the fresh seafood supply chain was to identify problems in the movement through the supply chain. By identifying these logistical problems, future effort and resources can be focused on eliminating some of the hurdles, thus improving the fresh seafood supply chain. In interviews with McDowell Group, each key informant was asked to identify problems their company has encountered while shipping fresh seafood over the last year.

Several company executives had experienced some form of supply chain problem. These problems are summarized below.

### **Poor Service**

Several companies interviewed reported that fresh seafood cargo shipped via air was often lost, misplaced, bumped, or left on the tarmac too long. In all cases, the cargo handling mishaps were associated with loading cargo onto passenger flights. In many cases, the effect was ruined product worth thousands of dollars.

This problem highlights a risk of moving fresh seafood on passenger flights -- cargo can be rerouted to accommodate passengers, who pay more for their seats than seafood shippers pay for cargo. Rates for fresh seafood on passenger flights generally range from 25 cents to 35 cents per pound. On that same flight, a 150-pound passenger with 25 pounds of luggage and a two-week advance roundtrip ticket pays approximately \$2.10 a pound. As long as there is more value in shipping passengers than cargo, there is potential for cargo to be bumped or rerouted.

### **Poor Communication**

A few companies report that poor communication among processors, freight forwarders and air carriers are a problem. Processors often call freight forwarders at the last minute to ship fresh seafood. Freight forwarders are then pressed to locate cargo space for the product. Often carriers will reroute seafood shipments without communicating this information to the forwarders. Communication problems also exist between seafood suppliers and trucking companies. For example, trucks will show up at plants to pick up shipments only to wait for several hours to be loaded. Suppliers also sometimes reduce shipments without telling the buyer and the trucking company, consequently trucks leave with partial loads and wasted space. This lack of communications among the different players in the fresh seafood industry often results in inefficient use of transportation industry resources.

### **Lack of Coordination**

A number of companies report a lack of coordination between transportation industry resources and fishery openings. For example, some seafood suppliers and buyers have had a hard time finding cargo space or trucks to haul fresh seafood during peak summer months. Ironically, some in the transportation industry experienced frustration in not being able to coordinate scheduled air service with regional fishery openings. One airline company in particular reports that the lack of coordination cuts into harvesters' profits. If an opening takes place when there is no scheduled air service, charter flights are needed to haul fresh seafood out of the region. Because of the high cost of charter flights, fishermen's profits are reduced. Scheduled flights reduce costs for the fishermen because cargo coming into the community defrays the backhaul rates.

### **Limited success in shipping product to Europe**

Companies that ship fresh seafood to Europe must obtain an original health certificate for the product. Roxy Triplett, of the Seafood Inspection Program for the National Marine Fisheries Service, notes that Alaskan seafood suppliers have few options in obtaining a health certificate for their fish on a timely basis. Delays may be alleviated with the hiring of a NMFS inspector who would be available on-call in Southcentral, Kodiak, and Western Alaska. This expanded service from the NMFS Seafood Inspection Program would likely reduce the certification time for fresh seafood, according to Triplett, and eliminate problems Alaska seafood suppliers experience when shipping to European Union buyers.

## **Limited Shipping Alternatives in Rural Alaska**

The lack of viable shipping options available to suppliers in outlying areas and limited airport infrastructure in rural Alaska also present problems for Alaska's fresh seafood industry. In many ways, these problems are interrelated. Unlike communities located on the Southcentral road system, fresh seafood from rural Alaska is most often shipped via air service. These communities are often further limited by the lack of airport facilities and paved runways. For example, the gravel runways in Unalakleet limit shipments of seafood to propeller-operated aircraft service. Cargo space is limited on these aircraft, so seafood suppliers need to augment shipments on regularly scheduled flights with costly charter flights. Runway improvements to allow regularly scheduled jet service would potentially reduce the number of charter flights.

## ***SEAFOOD DISTRIBUTION FACILITY***

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Anchorage has carved out a unique seafood transportation niche that has grown over the last five years. In 1995, an estimated 13 million pounds of fresh seafood moved through Anchorage. Five years later, an estimated 30 million pounds was shipped through Anchorage on its way to outside markets. In the immediate future, Anchorage's prospect for increasing fresh seafood shipments looks promising. Likely sources for this increase could include shipments from Alaska Seafood International, changes in offshore fishery management favoring fresh seafood production, and a growing worldwide consumer preference for fresh seafood.

As the volume of fresh seafood transiting through Anchorage increases, capacity to distribute this volume of product becomes more challenging. As previously discussed, fresh seafood is shipped by truck, aircraft, and on container ships. All have specific supply chains that generally intersect in Anchorage. Many shipping companies have separate refrigerated facilities, office space and equipment.

Recognizing Anchorage's role in the seafood transportation industry, and seeing the need for economizing overhead and expanding value-added services, World Trade Center Alaska has asked McDowell Group to assess the industry demand for a distribution center. A central distribution facility in Anchorage would reduce overhead costs for seafood suppliers, freight forwarders and carriers through sharing expensive refrigeration space, providing resources for value-added activity, and creating a central market for suppliers and buyers to purchase fresh Alaska seafood.

There are many examples of distribution centers for perishable products around the world. Some have been successful, while others have struggled or failed. For example, the U.S. agriculture industry has relied on distribution centers for facilitating the shipping of vegetables and fruit. The centers enhance commerce between buyers and suppliers and reduce overhead and shipping costs. In another example, in 1997, Hellmann Perishable Logistics (HPL) joined with British Airways and Cargolux to create a network of facilities around the world for moving perishable products. The hub, located in Miami, collects and moves fresh seafood, vegetables, fruits, and flowers from South America to customers all over North America. In the first year alone, it moved 60,000 tons of fresh produce.

Some industries are shifting from distribution centers to direct purchases. In the agriculture business, large buyers are slowly moving away from centralized facilities for primary purchases and instead are purchasing vegetables and fruits from the farms themselves.

Some regional facilities have failed for lack of business. The Orlando, Florida distribution facility, for example, has had difficulty competing with other facilities since it opened about a year ago. The Orlando center was built to aid in shipping perishable products to and from South America, U.S. and Canadian markets, however, there is limited demand for shipments to South America. In most cases, perishable cargo going through Florida to South America uses the Miami facility because shipping channels are well established and it is the most southern air cargo terminal in the U.S.<sup>6</sup>

To begin the assessment of industry demand for an Anchorage-based distribution center, McDowell Group interviewed owners and presidents of 25 companies about the needs of the companies. In addition, several individuals with years of experience in moving perishable products were also interviewed. This study is an initial investigation of industry demand for the facility as well as a description of the movement of fresh seafood from the Southcentral region to market. It is not a cost and benefit analysis. Any research to determine the feasibility of an

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<sup>6</sup> Tenner and Amand. Interview by author.

Anchorage-based distribution facility would require a comprehensive financial analysis, which is beyond the scope of this study. The following information is a summary of the interviews regarding the need for a central distribution facility.

## **Benefits of Distribution Center**

Eleven company representatives reported the need for a central distribution facility in Anchorage. They noted the demand for consolidation of efforts, and said that a central facility would provide more refrigerated space, a central point for buying and selling fresh product, greater shipping efficiency, and a central pickup point for truck backhaul. Most of these company executives reported that current shipping infrastructure was sufficient to meet today's demand. However, many felt a central facility would help improve the distribution of fresh seafood.

A couple of company representatives noted that Southcentral Alaska does not have sufficient capacity for holding fresh and frozen seafood. A central distribution facility would make more refrigerated space available for fresh seafood.

One person sees a large marketing advantage in a central distribution point for fresh Alaska seafood. Product entering and departing the facility would be inventoried, thus providing details on availability of product. A central source of information on product availability would benefit buyers and brokers, especially those unfamiliar with the Alaska seafood market.

Another company representative reported the need for consolidation service in Anchorage. Currently, little consolidation service is available, resulting in the shipment of trailers that are only partially full of fresh seafood. By combining shipments and filling trailers, shipping costs are reduced.

Several company executives noted that a central facility would result in greater efficiency by reducing costs. One person saw potential for cost savings if more product was stored in refrigerated facilities than trailers. He noted that it was cheaper for his company to hold 200,000 pounds of seafood in its refrigerated facility than a refrigerated trailer.

A few individuals noted that a distribution center would provide a more cost-effective method for backhaul for trucking companies. After dropping off north bound loads, trucks returning to the Lower 48 could drive to a central distribution facility to pickup fresh seafood shipments, rather than going directly to seafood suppliers. In some cases, trucking companies have to locate fresh seafood shipments by calling or visiting the plants. In a few instances, trucks have shown up for loads and had to wait several hours to be loaded. A central distribution center could eliminate or reduce these inefficient practices and result in fewer shipments of partial loads of fresh seafood.

## **Disadvantages of a Distribution Facility**

Fourteen of the 25 key informants do not believe a central facility is needed in Anchorage. They say the Anchorage shipping infrastructure is sufficient, given the current level of demand. They also cited increased costs of a new facility, the potential for mishandling seafood with the introduction of another supply link, and the need to reduce the shipping time. Each point is discussed in detail below.

### **Infrastructure Meets Demand**

Many companies reported few problems with shipping infrastructure from the Southcentral region. They said freight forwarders do an excellent job, and stated their optimism about the ability to handle larger shipments in the future. They believe the industry would be able to meet

increased demand for shipping fresh seafood in the future. These comments mirrored those of other respondents who said the market and not infrastructure is the primary reason more fresh seafood is not shipped from Southcentral Alaska.

### **Higher Costs**

Another concern expressed by many companies is the potential for significantly higher costs in utilizing the facility. A new facility would need to defray building and operating costs, which would likely be higher than most companies now pay. For example, one freight-forwarder investigated moving into the new Alaska Cargoport facility, and determined that his company could not afford the new facility. Freight-forwarders and others in the seafood transportation industry operate on slim margins – in some cases only a few cents per pound. Companies utilizing a new facility would likely have to pass higher costs onto consumers through higher shipping costs. Given the increasingly competitive seafood market in recent years, there is some question whether consumers would be willing to pay these higher prices.

A few respondents expressed their concern that the distribution facility would increase the chance of mistakes in handling the fresh seafood. In an industry constantly under pressure for better quality, every additional link in the supply chain increases the chance for product damage. Some companies have experienced poor handling by third parties. Two seafood suppliers reported ruined product while shipping to European markets. In fact, one company is now reluctant to ship fresh seafood to European markets for fear of losing product. Other suppliers reported that fresh seafood was ruined while in transit to U.S. domestic markets. These experiences of third-party handling have left many in the industry hesitant about the benefit of a central distribution facility.

A few company officials said the limited shelf life of fresh seafood would render a distribution center obsolete. From the moment the seafood is harvested, suppliers, buyers, and the transportation industry are racing against time. Under the best of circumstances, the shelf life for most fresh seafood ranges from 10 to 14 days, if stored at 32 degrees Fahrenheit.<sup>7</sup> In order to minimize shelf-life loss, many companies are shipping product directly from the supplier to the buyer.

A second factor emphasizing the need for timely shipping is the distance of Southcentral and Western Alaska from the market. By truck or container ship, U.S. domestic markets are roughly three days away. Given one day for harvesting and dressing the fresh seafood and three days for transport, the remaining shelf life would range from six to 10 days. Air shipment to U.S. domestic markets, including transit to Anchorage's Ted Stevens International Airport, is approximately one day. The consensus of most of those interviewed is that a distribution center would likely increase total shipping time.

Finally, a couple of company representatives stated that Anchorage does not need a new distribution facility because Alaska Seafood International (<http://www.alaska-seafood.com>) could provide this distribution and refrigeration service. However, Alaska Seafood International is currently ramping up for manufacturing of value-added seafood products. Alaska Seafood International will likely be using any refrigerated space available for its own fresh seafood production.

## **Food for Thought from the Perishable Products Industry**

McDowell Group also interviewed experts in logistics of handling and shipping of perishable products. Two primary themes emerged from those interviews: the need for consistent flow of

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<sup>7</sup> Chuck Crapo and Brian Paust, "Air Shipment of Fresh Fish, A Primer for Shippers and Cargo Handlers," Alaska Sea Grant College Program, Maine Advisory Bulletin No. 32, 1991.

fresh seafood year-round, and the increased monetary and time costs the facility would contribute to the supply chain. Each factor plays an important role in determining how successful the distribution center would be in Anchorage.

First, the facility would need a consistent flow of fresh seafood year around in order to stay profitable and cover daily overhead expenses such as labor, electricity, natural gas, and water. However, the seafood industry does not lend itself to a consistent source of fresh seafood. Unlike other production or agricultural businesses, Alaska halibut, salmon, and other fisheries are dependent upon the ability of the fisherman to track and harvest wild fish. The unpredictability in harvesting wild fish results in thousands of pounds one day and sometimes nothing for the next three days. In addition, these fisheries are seasonal. A central seafood distribution facility would have wide variability in the volume of fresh seafood moving through it.

The shipping and handling experts said a distribution center would increase costs and cause more delays in moving the seafood to market. A new facility would likely be expensive due to high land prices and construction costs. These costs would then be passed on to customers in the form of higher shipping expenses. Finally, the shipping experts expect there may also be handling delays if fresh seafood were moved from a central facility, as it would be one more link in the supply chain. Considering the limited shelf life of some seafood products, this would be detrimental to quality.

# ***RECOMMENDATIONS***

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## **Distribution Center**

Based on interview responses and secondary data from the Alaska Department of Fish and Game, it is evident that although the central distribution facility concept has merit worthy of further research, the facility would likely have limited success in Anchorage at this time. There are three primary reasons for this:

- Current shipping and refrigerated holding capacity appears to be meeting demand
- Lack of consistent flow of fresh seafood through the facility would present operational cash flow challenges
- Additional monetary and time costs could be incurred by customers using the facility

Financing is one unknown that could affect the potential operational success of a central distribution facility. Currently, the fresh seafood transportation industry has likely minimized its business costs given the level of shipping infrastructure available. The addition of a new distribution facility with potentially higher costs would make it extremely difficult for existing companies to locate in the facility. If the facility were financed through public sources or some combination of private and public sources, overhead costs for those using it might be reduced enough to warrant building the facility. To determine this, a comprehensive financial analysis would be needed.

## **Supply Chain Improvements**

Recognizing the distribution facility is only one possible solution for improving the movement of fresh seafood in Southcentral and Western Alaska, McDowell Group offers other recommendations for getting fresh seafood to market. This summary is based on responses from 25 executive interviews.

- Continue to pursue innovative and economical ways to ship fresh and live seafood from outlying communities to Anchorage. Many communities reported a need for different shipping options, given the limited transportation infrastructure. By providing more transportation options, Western Alaska would be able to ship more fresh seafood to U.S. domestic and international markets. There will be other benefits as Alaska improves transportation of its own fresh seafood to market, including improvements in the movement of live lobsters through Anchorage on the way to Asian markets.
- Add a scheduled delivery service for Southcentral Alaska communities to Anchorage. A few processors reported the need for a scheduled trucking service from the Kenai Peninsula to Anchorage. Often times, fresh seafood is ready for delivery to freight forwarders in Anchorage, but no means are available to deliver the product. Providing a daily service would likely improve the logistics of moving fresh seafood.
- Continue to improve the quality of Alaska fresh seafood. Crucial to market acceptance, almost all interviewers felt that quality is the key to success of the fresh seafood industry.
- Improve handling procedures for fresh seafood by air carriers. A workshop should be developed to bring suppliers, freight-forwarders, and carriers together to outline methods for eliminating mistakes and to educate all parties on fresh seafood handling procedures.

- Improve communication between shippers and carriers concerning transportation of fresh seafood. A number of those interviewed noted that communication between different industry players was poor. Improving communication would allow for exchange of ideas resulting in better logistics.
- Improve shipping facilities in outlying communities. Many key communities in Western Alaska have limited shipping infrastructure thus limiting fresh seafood shipments. By improving shipping infrastructure in these communities, transportation costs would be reduced, which in turn could mean higher returns to fishermen in these communities.
- Support medium-sized processors by helping to secure capital for improving processing technology, including freezing and icing facilities. A large amount of halibut is trucked to processors in Canada and the Lower 48 for processing. By expanding processing capacity, Alaska communities will be able to enjoy employment benefits currently shipped outside Alaska.
- Assist in creating a consolidation service for fresh seafood shipped to outside markets. Based on comments from key informants, a number of trailers transiting to Lower 48 markets are only partially full. By consolidating shipments, costs are reduced.

## Processor Executive Interview Questions

1. Verify name (spelling), title, and brief description of their experience.
2. Approximately what percent of your total production over the last year was fresh, frozen, live, and other (in pounds)?  
Fresh \_\_\_\_\_  
Frozen \_\_\_\_\_  
Live \_\_\_\_\_  
Other \_\_\_\_\_
3. Of the fresh fish processed by your company, approximately what percent of production was fillets, head & gut, whole, other (in pounds)?  
Fillets \_\_\_\_\_  
Head & gut \_\_\_\_\_  
Whole \_\_\_\_\_  
Other \_\_\_\_\_
4. Of the fresh fish processed by your company in the last year, approximately what percent was halibut, sablefish, salmon, or other (in pounds)?  
Halibut \_\_\_\_\_  
Sablefish \_\_\_\_\_  
Salmon \_\_\_\_\_  
Other \_\_\_\_\_
5. Since 1995, have you seen any changes in your company's composition of fresh product? For example, more halibut, less salmon.
6. Since 1995, would you say that your production of fresh seafood has increased, decreased, or remained the same?
7. What percent of deliveries to your company during the last year was from communities and/or fisheries not on the South central road system? What were the primary locations?
8. Do you sell any of your fresh seafood to Anchorage customers for Alaska consumption? If so, approximately what percent your total annual shipment stays in Anchorage?
9. Does your company utilize the internet for fresh seafood sales? Has the use of the internet impacted your fresh seafood sales? How has this impacted your shipping?
10. How does your company normally ship fresh seafood to out-of-state and international customers? (does it use a third party or do you ship directly to the customer yourself)?
11. If your company ships fresh product, what percentage of your product is shipped via air, truck, and sea?  
Air \_\_\_\_\_  
Truck \_\_\_\_\_  
Sea \_\_\_\_\_
12. Has your company encountered any consistent shipping problems when moving fresh product through South Central Alaska?
13. If you could suggest one improvement in South Central Alaska shipping infrastructure, what would it be?
14. In your opinion, what is preventing Alaska from shipping a larger proportion of fresh seafood? Is it because of problems associated with shipping infrastructure or is demand just not there to warrant more fresh seafood?
15. Are you able to meet all your demand for fresh seafood? If not why?

16. In your opinion, is the South Central Alaska seafood shipping infrastructure prepared to handle larger shipments of fresh seafood?
17. In your opinion, would the South Central seafood market benefit from a refrigerated shipping facility? Given the facility reduces cost of shipping, would you utilize the facility to ship your fresh seafood? How would this benefit your company? Would it increase your ability to market live/fresh/value added product? Why or why not?
18. Would the availability of a refrigerated shipping facility increase the amount of fresh seafood shipped through Anchorage?
19. Would your company like to see the development of this refrigerated facility as a co-op or a public/private partnership?
20. We would like to interview some fresh seafood buyers who purchased product from South Central Alaska. Would you be willing to recommend two of your primary buyers to be interview? If so, what is the company name, contact, address, and phone number of the buyers?

## Shippers Executive Interview Questions

1. Verify name (spelling), title, and brief description of their experience.
2. One of the goals of this study is summarize the overall flow of fresh seafood being shipped into and out of South Central Alaska. Please, describe in general how you ship your fresh seafood.
3. Approximately how many pounds of fresh seafood do you ship on annual basis?
4. What percent of fresh seafood shipped by your company is to in-state, Lower 48, and international customers (pounds)?
  - In-state.....%
  - Lower 48..... %
  - International.....%
5. In general, what percent of your fresh seafood comes from customers not located on the South central road system? What are the primary locations?
6. Since 1995, would you say that your shipments of fresh seafood has increased, decreased, or remained the same?
7. Do you have any problems meeting all your customer demand? For example, do you have to turn customers away due to lack of refrigerated space or transportation source is at capacity. If not why?
8. Do you hold fresh seafood for your client until a buyer is located? If so, approximately how long do you hold fresh seafood at your facility?
9. How do you refrigerate your fresh seafood? For example, do you use refrigerated trucks or temperature controlled warehouse space? Why does your company use the cooling facilities it does? Are you interested in obtaining additional refrigerated warehouse space?
10. Does your company offer any other seafood related value-added services for your customers? For example, consolidating, packaging, brokering, etc. If so, what are they? Would your company like to offer more value-added services? If so, what?
11. What are some logistic problems your company has encounter while shipping fresh seafood over the last year? Have the problems been solved? If not, what are possible solutions?
12. Do you foresee any future shipping problems for the Alaska fresh seafood market? If so, what are they? In order to head these future problems, what are some possible solutions?
13. In your opinion, do you think South Central Alaska seafood shipping infrastructure is prepared to handle significantly larger shipments of fresh seafood?
14. In many areas of the U.S., state-of-the-art perishable facilities allow for the latest inventory, data, and temperature control, economies-of-scale, and possible year round distribution of seasonal product. In your opinion, would South Central and Alaska seafood market benefit from a state-of-the-art refrigeration shipping facility? What type of benefits would you anticipate from such a facility? In your opinion, would a central

distribution facility lower overall shipping costs for Alaska fresh seafood? Given the facility reduces the cost of shipping, would you utilize the facility to ship your fresh seafood?

15. If you were designing the facility, what are some essential items you would incorporate in the facility?

## **Carriers Executive Interview Questions**

1. Verify name (spelling), title, and brief description of their experience.
2. One of the goals of this study is summarize the overall flow of fresh seafood being shipped into and out of South Central Alaska. Please, describe in general what procedures you use to ship fresh seafood.
3. **For air carriers and CSX and TOTE.** In general, what percent of your fresh seafood comes from customers not located on the South central road system? What are the primary locations?
4. **For air carriers only.** In the last year have you transited through Anchorage on the way to a domestic or international destination carrying fresh seafood? If so, do you offload your fresh seafood to store in a refrigerated facility in Anchorage while servicing your freighter? Why or why not?
5. Since 1995, would you say that your shipments of fresh seafood has increased, decreased, or remained the same?
6. Have you every turned customers (international and domestic) away due to lack of cargo or refrigerated space in Anchorage?
7. What are some logistic problems your company has encounter while shipping fresh seafood over the last year? Have the problems been solved? If not, what are possible solutions?
8. If you could suggest one improvement in South Central Alaska shipping infrastructure` what would it be?
9. In your opinion, do you think South Central Alaska seafood shipping infrastructure is prepared to handle much larger shipments of fresh seafood?
10. In many areas of the U.S., state-of-the-art perishable facilities allow for the latest inventory, data, and temperature control, economies-of-scale, and possible year round distribution of seasonal product. In your opinion, would South Central and Alaska seafood market benefit from a state-of-the-art refrigeration shipping facility? What type of benefits would you anticipate from such a facility? In your opinion, would a central distribution facility lower overall shipping costs for Alaska fresh seafood? Given the facility reduces the cost of shipping, would you utilize the facility to ship your fresh seafood?
11. If you were designing the facility, what are some essential items you would incorporate in the facility?

# Companies Interviewed

## **Executive Interview List for Processors**

- Alaska Fresh Seafoods
- Favco Inc
- Kachemak Bay Seafoods
- Salamatof Seafoods Inc
- Snug Harbor Seafoods Inc
- Auction Block
- Alaska Seafood International
- Bornstein Seafood
- Kachemak Bay Seafoods
- Kachemak Bay Salmon Producers
- Icicle Seafoods Inc

## **Executive Interview List for Shippers**

- Movers Inc
- Perishables International, Inc
- Panalpina, Inc. / SwissGlobalCargo, Inc
- Ravenstar Inc. 277-7100
- Federal Express
- Air Land Transport

## **Executive Interview List for Carriers**

- Alaska Airlines
- CSX Lines
- Totem Ocean Trailer Express
- United Airlines
- Lyden Air Cargo
- Northern Air Cargo
- On Demand
- Hoskins Trucking
- Terrence Yelli Trucking
- Carson Trucking
- J.J. Hadley/MTX

## Interview List for Western Alaska Fresh Seafood Economic Development Corporations and International Perishable Experts

- Eugene Asicksik, CEO, Norton Sound Economic Development Corporation
- Greg Fisk, Bristol Bay Economic Development Corporation
- Roxy Triplett, National Marine Fisheries Service, Seafood Inspection Program
- Stewart Tenner, Frankfurt Airport Authority U.S.A/Canada Representative
- Christian Helms, Managing Director of Hellmann Perishable Logistics
- Mike Zimmerman, Vice-President Perishables & Special Cargo, SwissGlobalCargo Ltd.
- Richard Sewell, CEO, Iceberg Seafood

### Pounds of Fresh Seafood Processed in Cook Inlet Communities 1995-2000

	1995	1996	1997	1998	1999	2000
<b>Halibut</b>	2,482,061	3,169,155	3,025,085	10,323,945	5,231,106	7,270,320
<b>Salmon</b>	4,674,406	5,659,955	2,497,307	4,483,838	5,119,518	7,865,069
<b>Total</b>	<b>7,156,467</b>	<b>8,829,110</b>	<b>5,522,392</b>	<b>14,807,783</b>	<b>10,350,624</b>	<b>15,135,389</b>

### Pounds of Fresh Seafood Processed in Kodiak Communities 1995-2000

	1995	1996	1997	1998	1999	2000
<b>Halibut</b>	1,596,355	1,664,142	0	4,370,046	2,631,563	3,004,805
<b>Salmon</b>	448,566	160,807	81,318	505,873	368,460	1,456,623
<b>Total</b>	<b>2,044,921</b>	<b>1,824,949</b>	<b>81,318</b>	<b>4,875,919</b>	<b>3,000,023</b>	<b>4,461,428</b>

### Pounds of Fresh Seafood Processed in Prince William Sound Communities, 1995-2000

	1995	1996	1997	1998	1999	2000
<b>Halibut</b>	1,086,635	277,548	769,599	611,247	684,351	526,864
<b>Salmon</b>	5,096,983	5,875,495	15,626,740	16,501,763	14,209,084	17,129,292
<b>Total</b>	<b>6,183,618</b>	<b>6,153,043</b>	<b>16,396,339</b>	<b>17,113,010</b>	<b>14,893,435</b>	<b>17,656,156</b>

### Pounds of Fresh Seafood Processed in Western Alaska, Aleutians, & Alaska Peninsula Communities, 1995-2000

	1995	1996	1997	1998	1999	2000
<b>Halibut</b>	109,300	711,430	2,974,990	284,066	2,438,305	3,036,110
<b>Salmon</b>	1,192,018	1,293,410	3,153,290	1,005,313	869,795	1,215,038
<b>Total</b>	<b>1,301,318</b>	<b>2,004,840</b>	<b>6,128,280</b>	<b>1,289,379</b>	<b>3,308,100</b>	<b>4,251,148</b>