

June 2013



*Wild, Natural & Sustainable®*

# The Economic Value of Alaska's Seafood Industry



PREPARED BY



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## Impact of Alaska Seafood Industry on the U.S. Economy

- Alaska seafood directly accounts for 94,000 workers who earned \$2.8 billion in 2011. This figure includes American workers who caught, processed, managed, sold, cooked, or served Alaska seafood. On an average monthly basis, Alaska seafood directly created 61,200 U.S. jobs in 2011.
- The combined value of Alaska seafood exports and the retail value of Alaska seafood sold in the U.S. was estimated to be \$6.4 billion in 2011.

### Alaska Seafood Industry: Direct U.S. Employment, Earnings, and Production, 2011

	Number of Workers	Avg. Monthly Employment	Labor Income (\$Millions)	Economic Output (\$Millions)
Commercial Fishing	32,000	16,500	\$1,078	\$2,109
Seafood Processing	32,000	16,300	\$695	\$2,462
Mgmt/Hatcheries/Tenders	4,900	3,400	\$289	\$653
Wholesale/Distributors	1,000	1,000	\$79	\$180
Grocers	6,200	6,200	\$176	\$347
Restaurants	17,900	17,900	\$464	\$1,310
<b>Total Direct Impacts</b>	<b>94,000</b>	<b>61,200</b>	<b>\$2,782</b>	<b>\$6,408</b>

Notes: The support sector does not contribute to total direct economic output, because it is derived from commercial fishing and the seafood processing sector. These data represent direct impacts of the industry; they do not include multiplier effects.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

- Estimates of direct economic effects do not include multiplier effects, i.e., jobs and income created as a result of business and personal spending connected to the Alaska seafood industry. Including multiplier effects, the Alaska seafood industry is the basis for over 120,000 U.S. jobs, employing over 165,000 people, and \$6.4 billion in labor income. (See table on following page).
- Total direct and secondary economic output in the U.S. stemming from the Alaska seafood industry is estimated to be \$15.7 billion in 2011. (See table on following page).
- The Alaska seafood industry directly employed 63,100 workers in Alaska during 2011. An additional 78,400 jobs were created elsewhere in the U.S. related to Alaska seafood resources. Put another way, for every Alaska fisherman, processor, or direct support worker; an additional 1.24 U.S. jobs were created.
- Most jobs associated with the Alaska seafood industry are connected to commercial fishing, processing, or other direct support sectors. Employment related to grocers and restaurants selling Alaska seafood only accounts for about one third of the total employment created by the industry. Since most jobs associated with Alaska seafood industry are related to catching, processing, and managing the resource, it has a much greater economic impact than imported seafood.

## Alaska Seafood Industry: Total U.S. Employment, Earnings, and Production, 2011

	Number of Workers	Avg. Monthly Employment	Labor Income (\$Millions)	Economic Output (\$Millions)
Commercial Fishing	60,100	36,600	\$2,020	\$5,278
Seafood Processing	53,600	32,500	1,445	4,881
Other Direct Support Sector	8,000	7,700	674	1,513
Wholesale/Distributors	2,600	2,600	261	471
Grocers	9,700	9,700	487	815
Restaurants	31,800	31,800	1,471	3,428
<b>Total Impacts</b>	<b>165,800</b>	<b>120,800</b>	<b>\$6,359</b>	<b>\$15,733</b>

Note: Economic output is roughly equivalent to net sales for industries other than commercial fishing and the support sector. The support sector does not contribute to total direct economic output, because it is derived from commercial fishing and the seafood processing sector. These data represent total impacts of the industry; they include multiplier effects.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

### Alaska's Role in the National Seafood Supply

- Based on available data – and reasonable extrapolations where data is not available – Alaska seafood accounts for roughly 10 percent of the total U.S. seafood supply (by value, including domestic production and imports).
- About two-thirds of all Alaska seafood is exported abroad and seafood caught in Alaska accounts for 58 percent of all U.S. seafood exports (\$3.2 billion in 2011). It is estimated that the U.S. market bought roughly 820 million pounds of Alaska seafood in 2011 worth \$2.0 billion (in wholesale terms).
- Alaska accounted for 56 percent of the total U.S. commercial fishery harvest volume and 36 percent of the total U.S. ex-vessel value in 2011.
- It is estimated that Alaska seafood accounted for 34 percent of all domestically-produced seafood consumed in the U.S. by volume, and 40 percent by value.
- Despite a possible perception amongst some consumers that “all salmon comes from Alaska”, the U.S. actually receives most of its salmon from foreign farms. Although Alaska produces 95 percent of all salmon caught in the U.S., wild Alaska salmon only represent about 23 percent of the total U.S. salmon supply.
- The U.S., as a whole, bought roughly \$21.0 billion worth of seafood in 2011 (in wholesale terms). Imports accounted for 79 percent, or \$16.6 billion, while domestically-produced seafood accounted for 21 percent, or \$4.4 billion, of the U.S. seafood supply.
- Alaska seafood is a unique economic asset. The industry is primarily an export-oriented industry, generating \$3.2 billion in exports in 2011. By injecting new money into the economy, exports can be a powerful economic stimulus. Despite exporting 2 billion pounds, Alaska is still the largest supplier of domestically-produced seafood in the United States. The U.S. imports nearly 80 percent of its seafood supply.

## Economic Impact of the Seafood Industry in Alaska

- The seafood industry directly employs approximately 63,100 people in the state of Alaska. Roughly 1-in-8 workers in Alaska earned at least part of their annual income directly from the seafood industry in 2011.<sup>1</sup> These direct jobs produced \$4.6 billion worth of wild, sustainable seafood (in wholesale terms) and resulted in an estimated \$1.7 billion in labor income.

### Alaska Seafood Industry: Direct Employment, Earnings, and Production, 2011

<b>Commercial Fishing</b>	
Number of Workers	32,000
Active Permit Owners	10,000
Crew Members	21,900
Equivalent Monthly Employment	16,500
Estimated Earnings (in \$Millions)	\$1,080
Harvest Value (in \$Millions)	\$2,110
<b>Seafood Processing</b>	
Number of Workers	27,100
Average Monthly Employment	11,500
Wage and Salary Earnings (in \$Millions)	\$410
Gross Processing Revenue (in \$Millions)	\$2,500
<b>Government, Salmon Hatcheries, and Tender Operators</b>	
Number of Workers	4,000
Average Monthly Employment	2,900
Labor Income (in \$Millions)	\$245
<b>Total Seafood Sector</b>	
Number of Workers	63,100
Average and Equivalent Monthly Employment	31,400
Total Estimated Earnings (in \$Millions)	\$1,730
First Wholesale Value, or Total Direct Output (in \$Millions)	\$4,610

Note: Totals may not sum due to rounding.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

- Estimates of direct economic effects do not include jobs and income created in Alaska as a result of business and personal spending stemming from the seafood industry. Including indirect and induced (multiplier) impacts, the Alaska seafood industry is estimated to create jobs for 77,400 people in the state of Alaska. (See table on following page).
- Including multiplier effects, the seafood industry provided \$2.2 billion of labor income and \$6.8 billion in total economic output within the state of Alaska in 2011.

<sup>1</sup> Based on employment data from the U.S. Census (American Community Survey) and ADOLWD (Nonresidents Working in Alaska)

- It is estimated that the seafood industry directly or indirectly employs 1-in-7 civilian workers in Alaska and accounts for 9 percent of all civilian labor income earned within the state of Alaska.

### Total Economic Impact of the Commercial Seafood Industry in Alaska, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Commercial Fishing</b>			
Number of Workers	32,000	7,200	39,200
Full-time Equivalent (FTE)	16,500	5,400	21,900
Estimated Labor Income (in \$Millions)	\$1,080	\$230	\$1,310
Output (Harvest Value in \$Millions)	\$2,110	\$1,100	\$3,210
<b>Seafood Processing</b>			
Number of Workers	27,100	4,300	31,400
Average Monthly Employment	11,500	3,100	14,600
Labor Income (in \$Millions)	\$410	\$110	\$520
Value Added (in \$Millions)	\$2,500	\$750	\$3,250
<b>Government, Salmon Hatcheries, and Tender Operators</b>			
Number of Workers	4,000	2,900	6,900
Average Monthly Employment	2,900	2,400	5,300
Labor Income (in \$Millions)	\$240	\$100	\$343
Output (in \$Millions)	\$570	\$290	\$860
<b>Total Seafood Sector</b>			
Number of Workers	63,100	14,300	77,400
Average and Equivalent Monthly Employment	30,900	11,000	41,900
Total Estimated Earnings (in \$Millions)	\$1,730	\$440	\$2,170
Total Output (in \$Millions)	\$4,610	\$2,140	\$6,750

Note: Direct output associated with government, salmon hatcheries, and tender operations is already included the output of the commercial fishing and seafood processing sectors, therefore it is not included in the total output. Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

### Economic Impact of Commercial Seafood Industry on Alaska Residents

- The seafood industry directly employed an estimated 27,230 Alaska residents in 2011. This figures includes 18,050 commercial fisherman claiming residency in Alaska.
- Commercial fishing employs approximately two out of three residents who are directly employed by the Alaska seafood industry. The other third are employed in seafood processing (5,510 residents) and other industry support functions (3,670).
- Including multiplier effects, the Alaska seafood industry was responsible for an estimated 41,530 Alaska resident workers in 2011 and \$1.28 billion in labor income earned by Alaska residents.

## Total Employment of Alaska Residents in the Seafood Industry by Region, 2011

Region	Commercial Fishing	Seafood Processing	Support Sector	Secondary Impacts	Total
<b>Estimated Number of Workers by Region of Residence</b>					
Southeast	4,690	880	1,150	4,100	10,830
Southcentral	6,050	1,000	480	3,800	11,330
Kodiak	1,570	1,450	1,450	3,100	7,550
BSAI	780	1,450	240	1,400	3,870
Bristol Bay	1,620	290	260	1,400	3,550
Arctic, Yukon, and Kuskokwim	3,170	440	60	600	4,250
Other/Unknown in Alaska	190	-	30	-	220
<b>Total Alaska Resident</b>	<b>18,050</b>	<b>5,510</b>	<b>3,670</b>	<b>14,300</b>	<b>41,530</b>
<b>Estimated Earnings by Region of Residence (in \$Millions)</b>					
Southeast	\$147	\$22	\$81	\$125	\$375
Southcentral	124	18	17	130	289
Kodiak	117	33	104	103	357
BSAI	63	50	11	42	166
Bristol Bay	12	3	10	28	53
Arctic, Yukon, and Kuskokwim	15	3	2	13	33
Other/Unknown in Alaska	3	-	1	-	4
<b>Total Alaska Resident</b>	<b>\$481</b>	<b>\$133</b>	<b>\$225</b>	<b>\$441</b>	<b>\$1,277</b>

Note: Residency for seafood processing workers is based on DOLWD data. Resident processing workers are assumed to reside within the region they are working. Nonresident processing workers who do not reside in Alaska year-round, based on eligibility for a Permanent Fund Dividend, are not included in these data. Totals may not sum due to rounding.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

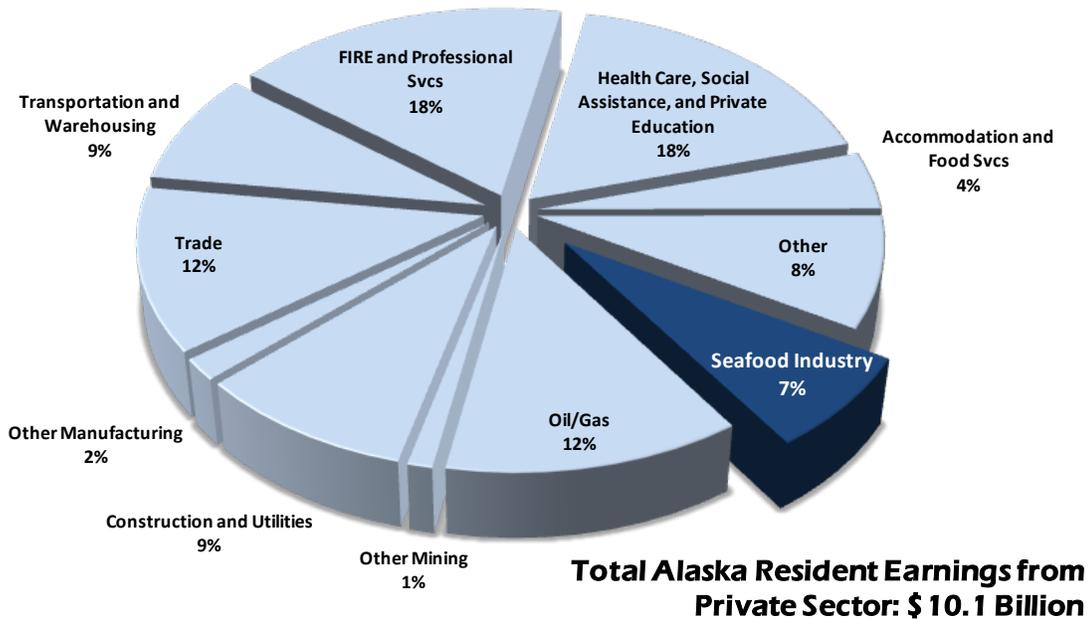
- The majority of Alaska residents who directly participate in the seafood industry reside in the Southcentral region, yet that region has the lowest industry participation rate when compared to the overall population of each region (see table below). This fact illustrates a key point about Alaska's seafood industry; while it does employ thousands of people from Alaska's more populated areas, the several thousand jobs it provides in western regions and within parts of Southeast and Southcentral Alaska are critically important to those regional economies.
- In western Alaska, from Kodiak to Bristol Bay, more than one-in-four residents are employed in the seafood industry at some point during the year. Among the population in these regions aged 20 to 69 (working age), more than 40 percent are directly employed in the seafood industry.

### Role of Commercial Seafood Industry in Alaska's Economy

- The seafood industry directly employs four percent of all Alaska residents, but employs an estimated 6 percent of all residents between the ages of 20 and 69.
- It is estimated the industry directly accounted for 7 percent of all private sector resident earnings in 2011. Amongst basic sectors, the seafood industry ranks second to the oil/gas industry in terms of resident earnings. Other sectors, such as health care, construction, and trade had higher resident

earnings than the seafood industry, but these sectors are different in nature as they are primarily engaged in selling goods/services within the state economy as opposed to creating value from naturally occurring resources (or bringing new money into the economy, as the oil/gas, seafood, visitor industry, and other basic sectors do).

### Alaska Resident Earnings, by Private Sector Industry, 2011



Note: Data reflects direct earnings for each industry, no multiplier effects are included in these data. Residency is based on eligibility for Permanent Fund Dividend or buying Alaska resident commercial fishing permits. Other Alaska resident sole proprietors are not included in this data. Source: McDowell Group estimates based on DOLWD, ADFG, and NMFS data.

- Making comparisons like the one shown above is difficult and the significance of the seafood industry is not well known because economic data collected by government agencies is not collected on the commercial fishing industry in the same way it is collected for other industries. The analysis done for this report went to great lengths to estimate employment and earnings in a fashion that could be comparable to data collected on other industries.
- Including direct and secondary impacts, the commercial seafood industry accounts for 10 percent of all jobs in Alaska.<sup>2</sup> In 2011, the industry provided full and part-time jobs to 77,400 people and paid out an estimated \$2.2 billion in labor income. In terms of the number of workers employed, the commercial seafood industry is the state's largest private sector employer.
- The Alaska seafood industry creates more labor income and employs more workers in Alaska than the visitor industry and mining industry combined.
- The seafood industry is Alaska's second largest basic sector industry, in terms of employment created, labor income, production, and exports. Seafood is also a renewable resource which can provide economic benefits for Alaska for centuries if properly managed.

<sup>2</sup> On a monthly average or equivalent basis.

## Employment and Labor Income in Selected Alaska Industries

	Direct Employment (Avg. Mo.)	Total Employment (Avg. Mo.)	Direct Labor Income (\$Millions)	Total Labor Income (\$Millions)
<b>Petroleum Industry</b>				
Oil/Gas Industry <sup>1</sup>	13,000	44,800	\$1,860	\$2,650
Add'l Oil/Gas Impact from Tax Revenue and PFD Fund <sup>2</sup>	-	65,200	-	\$3,760
Add'l Impacts from Spinoff Effects <sup>3</sup>	-	60,000	-	\$3,120
<b>Federal Government</b>				
Federal Government (including Military) <sup>4</sup>	46,700	125,000	\$4,820	\$7,210
<b>Other Selected Resource Industries</b>				
<b>Commercial Seafood Industry</b>	<b>30,900</b>	<b>41,900</b>	<b>\$1,730</b>	<b>\$2,172</b>
Visitor Industry <sup>5</sup>	28,300	37,800	\$860	\$1,240
Mining Industry <sup>6</sup>	4,100	8,200	\$300	\$565
<b>Total Alaska Employment<sup>7</sup></b>	<b>-</b>	<b>453,400</b>	<b>-</b>	<b>\$26,160</b>

<sup>1</sup> The Role of the Oil and Gas Industry in Alaska's Economy, McDowell Group, September 2011.

<sup>2</sup> McDowell Group estimates, based on #1 and What Drives the Alaska Economy, UA Research Summary No. 13, December 2008.

<sup>3</sup> Oil Pumps Alaska's Economy to Twice the Size – But What's Ahead?, UA Research Summary No. 17, February 2011, and McDowell Group labor income estimates.

<sup>4</sup> Direct data from IMPLAN, labor income includes value of salaries and benefits. Total data comes from What Drives the Alaska Economy, UA Research Summary No. 13, December 2008 and McDowell Group labor income estimates.

<sup>5</sup> Economic Impact of Alaska's Visitor Industry 2011-12, McDowell Group, February 2013

<sup>6</sup> The Economic Impacts of Alaska's Mining Industry, McDowell Group, January 2012.

<sup>7</sup> Data from IMPLAN, based on BEA data.

Source of Commercial Seafood Industry data: McDowell Group estimates, based on ADFG, NMFS, ADOLWD, and IMPLAN.

- Seafood backhaul lowers northbound shipping rates which lowers the cost of living in coastal Alaska communities. A major Alaska shipper estimates northbound rates would be 10 percent higher in Alaska if not for seafood.
- The CDQ program includes six groups which represent 65 traditional Alaska native villages in western Alaska. These groups have grown to become important economic engines in western Alaska and the state as a whole. In 2011, the groups accomplished the following:
  - Funded 1,600 training and scholarship opportunities for its residents,
  - Invested \$30 million in community infrastructure projects and community benefit projects,
  - Created 2,410 wage and salary jobs with annual payroll exceeding \$45.5 million,
  - Paid out a total of \$32 million to 1,360 permit holders and 2,000 crew members, and
  - Held net assets of approximately \$800 million.

## Impact of Alaska Seafood in Washington State

- The Alaska seafood industry created an estimated 34,000 jobs and \$1.9 billion in labor income for Washington residents in 2011.
- Based on government licensing data and industry sources, it is likely that over 10,000 Washington residents physically worked in Alaska during 2011 as a commercial fisherman/woman or for a seafood processing company.
- It is estimated that over 7,000 additional Washington residents are directly employed in Washington state by processors, government agencies, or distributors which are supported by Alaska seafood.
- Although the state of Washington is much more populous than Alaska, an industry located outside of the state generating 34,000 jobs and \$1.9 billion in labor income is still very significant. Based on these findings, it can be concluded that roughly 1 percent of all jobs held by Washington residents are created by the Alaska seafood industry.

### Total Economic Impact of Alaska Seafood Industry on Washington State, 2011

	Jobs Created	Estimated Labor Income
<b>Estimated Direct Effects</b>		<i>(in \$Millions)</i>
Commercial Fishing Workers	7,100	\$471
Seafood Processing Workers	7,700	323
Other Direct Support Positions	200	64
Wholesalers/Distributors Employment	400	22
Grocers/Restaurants Employment	2,300	183
<b>Total Direct Effects</b>	<b>17,700</b>	<b>\$1,063</b>
<b>Indirect Effects (from business-related spending)</b>		
Repair, Maint., & Upgrades	3,600	\$211
Transportation & Warehousing	1,300	79
Supplies and Materials	1,200	65
Financial Services	1,200	69
Other	700	36
<b>Total Indirect Effects</b>	<b>8,000</b>	<b>\$460</b>
<b>Induced Effects (from direct and indirect household spending)</b>		
<b>Total Induced Effects</b>	<b>8,300</b>	<b>\$379</b>
<b>Total Direct and Secondary Effects</b>	<b>34,000</b>	<b>\$1,902</b>

Notes: Direct effects include Washington residents working in Alaska and Washington state, as a result of Alaska seafood. Indirect effects include all direct, indirect, and induced effects associated with spending for that particular sector. Therefore, not all jobs listed under financial services would be in financial services. Indirect figures represent the number of jobs resulting from spending in that category. Totals may not sum due to rounding.

Source: McDowell Group estimates based on IMPLAN, DOLWD, ADFG, and NMFS data.

Alaska accounts for over half of U.S. wild-caught seafood production, by volume. If Alaska were a country, it would be the world's 7<sup>th</sup> largest seafood exporter, by value. The Alaska seafood industry is a powerful economic engine within Alaska, but also creates significant impacts in the "lower-48."

The Alaska Seafood Marketing Institute contracted with McDowell Group to measure the industry's economic impact on the Alaska, Washington State, and U.S. economy. This report quantifies the direct, indirect, and induced effects of the Alaska seafood industry, from several different perspectives, and provides background information on production volume, harvest value, and participation within the industry.

## Study Purpose and Scope of Work

The purpose of this report is to illustrate the breadth and economic impact of the Alaska seafood industry. The analysis focuses on the commercial seafood industry and does not include impacts associated with recreational, charter, or subsistence fisheries. Alaska seafood is caught, processed, and utilized by a wide range of industry participants involving residents of every state in the United States. This analysis explains the impact the industry has within Alaska, within Washington, and the U.S. as a whole.

## Data Sources and Methodology

### DATA SOURCES: GOVERNMENT AGENCIES AND INDUSTRY INTERVIEWS

McDowell Group gathered published and unpublished, non-confidential data from several state and federal agencies in order to quantify the direct impacts of the Alaska seafood industry. These data provided information on participation, residency, gross earnings, wholesale value, exports, and metrics. Agency data often conflicts with information available from other agencies. Some Alaska fisheries are managed by federal authorities, others are managed by state authorities, and a few are jointly managed. Therefore, a major challenge of this project was determining which data source was best for each part of this analysis, and combining different data sources without including any overlap. Because different agencies report slightly different data, for a variety of reasons, not all figures in this report may sum across regions, species, or other parameters.

An enormous amount of seafood industry data is collected for management purposes, including information on harvest value, harvest volume, participation and other metrics. However, data is not available on the amount of labor income or net profits earned by fishermen. Likewise, government agencies do not collect public data on the spending patterns of fishermen and processors. In the absence of such data, the study team relied on interviews with industry participants, established economic models, and previous McDowell Group research to develop estimates.

This report contains estimates associated with labor income earned by commercial fishermen in Alaska. State and federal agencies (outside of the IRS) do not collect information on earnings by crew members,

commercial fishing costs, or profits. In order to effectively quantify economic impacts, it was imperative that labor income and input costs associated with commercial fishing were estimated. McDowell Group interviewed fishermen from a broad range of gear types who graciously volunteered their expertise.

## **MEASURING COMMERCIAL FISHING EMPLOYMENT**

While estimates of commercial fishing “equivalent monthly employment” are presented in this study, it is important to recognize the limitations of such measures and why they must be calculated differently for the commercial fishing industry. Measuring participation in Alaska’s commercial fisheries is a relatively simple task (it includes the number of commercial fishermen making landings under a permit and the number of fishermen who purchased a crew member license). However, developing estimates of employment that are consistent with measures of employment in other industries is very difficult. There are a number of reasons for this. One is that individual participation in the seafood industry, which is highly seasonal, can range from year-round to just a few days per year. Further, the seafood industry is often not the only source of employment for industry participants. According to a 2007 DOLWD study, about half of all Alaska residents who participate in commercial fisheries work in other non-fishing jobs as well.

One approach to measuring employment might be to base the estimates on the length of commercial fishing seasons. However, counting only the time that fishermen are actually fishing understates employment because of all the pre and post-season work required to engage in a commercial fishery. Fishermen spend a significant amount of time making sure their boat and gear is in working order. Also, fishermen tend to work many hours during the fishing season. It would not be uncommon for a crew to work over 80 hours in a single week. However, there is no uniform data available on the number of hours worked for the entire fleet which could provide a more reasonable average or FTE employment figure.

In any case, portraying average or FTE employment in an industry where participants range from seasonal fishermen hauling in nets by hand from skiffs to a +300 foot factory trawler with 120 workers onboard is a challenge. For purposes of this report, the amount of income earned by fishermen is divided by the all-industry, regional annual average wage (based on IMPLAN data) to arrive at a reasonable proxy for commercial fishing employment for each region. In some areas, the average labor income of all commercial fishing workers exceeded the regional average annual wage. In these instances, the number of workers was also used to describe average annual employment. Although the methodology differs from that used to classify average monthly employment in other industries, this “equivalent monthly employment” figure provides more readily comparable employment figures.

Alaska regional and statewide employment figures describing the seafood industry in this report pertain to the region where the employment took place, not the region of the workers’ residence. Analyses of the impacts on the Washington and U.S. economy do offer statistics regarding the number of fishermen and processors who work in Alaska but live outside of the state.

## ECONOMIC IMPACT ANALYSIS

McDowell Group used IMPLAN software and model data to estimate the secondary impacts associated with the Alaska seafood industry. IMPLAN is a widely-used model for measuring the employment and labor income effects of commercial and industrial activity. With respect to Alaska's seafood industry, IMPLAN requires careful modification to account for the fact that the residency of industry participants is often different than where fisheries are conducted. There are direct, indirect and induced effects where the fisheries occur, where fish are processed, and where industry participants reside. Direct impacts arise from workers who are directly involved in salmon hatcheries, catching seafood in commercial fisheries, tendering, processing seafood, or those employed in a management/enforcement role by a government agency. Indirect impacts are related to where direct workers spend money in support of their business operations. Induced impacts are associated with where permit holders, crew and processing workers spend their wages. Accurately accounting for the flow of seafood industry spending through local and regional economies is not possible without careful attention to the characteristics of each fishery.

## REGIONAL DEFINITIONS

This report breaks Alaska into seven regions. These regions and the area encompassed by each region, are as follows:

- **Arctic-Yukon-Kuskokwim (AYK):** Northwest Arctic Borough, Nome Census Area, Wade Hampton Census Area, and Bethel Census Area
- **Bristol Bay and Alaska Peninsula (BB):** Dillingham Census Area, Bristol Bay Borough, and Lake and Peninsula Borough (less Chignik-area communities)
- **Bering Sea and Aleutian Islands (BSAI):** Aleutians East Borough and Aleutians West Census Area
- **Kodiak (KOD):** Kodiak Island Borough and Chignik-area communities
- **Southcentral Alaska (SC):** Kenai Peninsula Borough, Anchorage Mat-Su Borough, Matanuska-Susitna Borough, and Valdez-Cordova Census Area.
- **Southeast Alaska (SE):** All boroughs or census areas between the Ketchikan Gateway Borough and the City and Borough of Yakutat.

# Abbreviations and Acronyms

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ADFG	Alaska Department of Fish and Game
ADOA	Alaska Department of Administration
ADOLWD	Alaska Department of Labor and Workforce Development
AYK	Arctic-Yukon-Kuskokwim region
BB	Bristol Bay region
BSAI	Bering Sea and Aleutian Islands region
CFEC	Commercial Fisheries Entry Commission, a division of ADFG.
CDQ	Community Development Quota
FTE	Full-time equivalent
GOA	Gulf of Alaska
IFQ	Individual Fishing Quota
IPHC	International Pacific Halibut Commission
mt	Metric tons
NMFS	National Marine Fisheries Service
NPFMC	North Pacific Fishery Management Council
SAFE	Stock Assessment and Fishery Evaluation
USCG	U.S. Coast Guard

# **I. Impact of the Alaska Seafood Industry on Alaska's Economy**

# Statewide Impacts of Alaska Seafood

The seafood industry is one of the State's key economic drivers, particularly in rural coastal areas. Commercial fisheries in Alaska provide the foundation for over 77,000 jobs within the state. This section investigates the statewide impact of the seafood industry and its relative economic significance to Alaska's economy.

## Economic Impact of Seafood Industry in Alaska

### Direct Employment, Labor Income, and Economic Output

The seafood industry directly employs 63,100 people in Alaska. Roughly 1-in-8 workers in Alaska earned at least part of their annual income directly from the seafood industry in 2011.<sup>3</sup> These direct jobs produced \$4.6 billion worth of wild, sustainable seafood (in wholesale terms) and resulted in an estimated \$1.7 billion in labor income.

#### Alaska Seafood Industry: Direct Employment, Earnings, and Production, 2011

<b>Commercial Fishing</b>	
Number of Workers	32,000
Active Permit Owners	10,000
Crew Members	21,900
Equivalent Monthly Employment	16,500
Estimated Earnings (in \$Millions)	\$1,080
Harvest Value (in \$Millions)	\$2,110
<b>Seafood Processing</b>	
Number of Workers	27,100
Average Monthly Employment	11,500
Wage and Salary Earnings (in \$Millions)	\$410
Gross Processing Revenue (in \$Millions)	\$2,500
<b>Government, Salmon Hatcheries, and Tender Operators</b>	
Number of Workers	4,000
Average Monthly Employment	2,900
Labor Income and Benefits (in \$Millions)	\$245
<b>Total Seafood Sector</b>	
Number of Workers	63,100
Average and Equivalent Monthly Employment	30,900
Total Estimated Earnings (in \$Millions)	\$1,730
First Wholesale Value, or Total Direct Output (in \$Millions)	\$4,610

Note: Totals may not sum due to rounding.

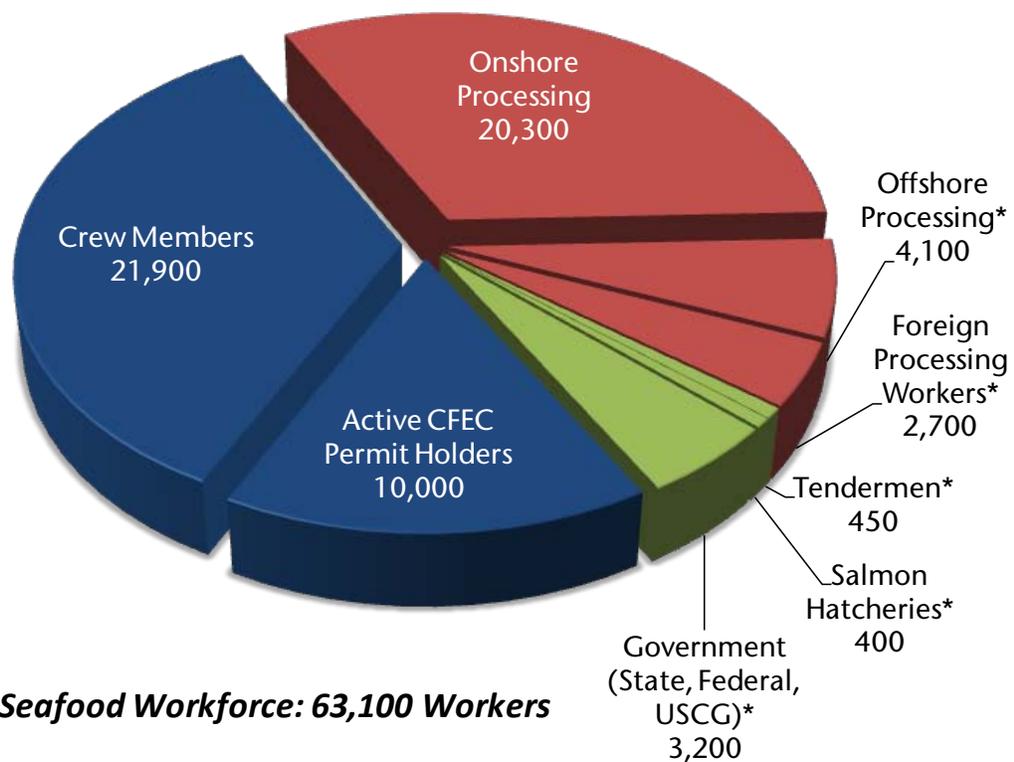
Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

<sup>3</sup> Based on employment data from the U.S. Census (American Community Survey) and ADOLWD (Nonresidents Working in Alaska)

Direct impacts associated with the seafood industry include fishermen/women, processing employees, tender operators, hatchery employees, and government workers involved in management, enforcement, marketing, or other functions solely related to the seafood industry. Government functions, hatchery operations, and tenders are vital pieces of the seafood industry and are funded primarily through direct payments or taxes on seafood production; as a result they are counted as direct impacts.

Commercial fishing accounted for 51 percent of the Alaska seafood workforce, employing 32,000 individuals in 2011. Seafood processing accounted for 43 percent of the Alaska seafood workforce, employing 27,100 workers in 2011. Government personnel (related to the commercial seafood industry), tendermen, and salmon hatchery workers accounted for 6 percent of the Alaska seafood workforce.

### Alaska Seafood Industry Workforce, Number of Workers, 2011



**Alaska Seafood Workforce: 63,100 Workers**

\* Indicates a McDowell Group estimate based on industry sources.  
Source: ADFG, ADOLWD, and McDowell Group estimates.

### Total Employment, Labor Income, and Economic Output

Estimates of direct economic effects do not include multiplier effects, i.e., those jobs and income created in Alaska as a result of business and personal spending created by the seafood industry. Including direct, indirect and induced impacts, the Alaska seafood industry is estimated to create jobs for 77,400 people in the state of Alaska. Including multiplier effects, the seafood industry provided \$2.2 billion of labor income and \$6.8 billion in total economic output. It is estimated that the seafood industry directly or indirectly accounts for 10 percent of total employment in Alaska and accounts for 10 percent of all civilian labor income earned within the state of Alaska.

## Total Economic Impact of the Commercial Seafood Industry in Alaska, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Commercial Fishing</b>			
Number of Workers	32,000	7,200	39,200
Full-time Equivalent (FTE)	16,500	5,400	21,900
Estimated Labor Income (in \$Millions)	\$1,080	\$230	\$1,310
Output (Harvest Value in \$Millions)	\$2,110	\$1,100	\$3,210
<b>Seafood Processing</b>			
Number of Workers	27,100	4,300	31,400
Average Monthly Employment	11,500	3,100	14,600
Labor Income (in \$Millions)	\$410	\$110	\$520
Output (Less Harvest Value, in \$Millions)	\$2,500 <sup>1</sup>	\$750	\$3,250
<b>Government, Salmon Hatcheries, and Tender Operators</b>			
Number of Workers	4,000	2,900	6,900
Average Monthly Employment	2,900	2,400	5,300
Labor Income (in \$Millions)	\$240	\$100	\$343
Output (in \$Millions)	\$570	\$290	\$860
<b>Total Seafood Sector</b>			
Number of Workers	63,100	14,300	77,400
Average and Equivalent Monthly Employment	30,900	11,000	41,900
Total Estimated Earnings (in \$Millions)	\$1,730	\$440	\$2,170
Total Output (in \$Millions)	\$4,610	\$2,140	\$6,750

Note: Direct output associated with government, salmon hatcheries, and tender operations is already included the output of the commercial fishing and seafood processing sectors, therefore it is not included in the total output. Totals may not sum due to rounding.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

### Economic Impact in Alaska by Species

Not surprisingly, analysis of the economic impacts by species category indicates that salmon fisheries create the largest total economic impact in Alaska, followed by federal groundfish/flatfish fisheries and the halibut/sablefish fisheries. Federal groundfish and flatfish fisheries, as a group, are worth more in wholesale terms and generate more direct income for participants but salmon fisheries generate more secondary economic activity within Alaska. Salmon fisheries have a higher economic multiplier within Alaska due to higher rates of Alaska resident involvement, more shore-side processing, greater in-state purchases



Salmon account for the highest percentage of the seafood industry's economic impacts within Alaska.

of goods and services in support of fishing operations, and the presence of salmon hatcheries, than compared to pollock, pacific cod, flatfish, and BSAI crab fisheries.

### Total Economic Impact of the Commercial Seafood Industry in Alaska, by Species Category, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Salmon</b>			
Number of Workers	38,300	6,800	45,100
Average and Equivalent Monthly Employment	12,500	5,200	17,700
Estimated Labor Income (in \$Millions)	\$620	\$210	\$830
Output (Harvest Value in \$Millions)	\$1,420	\$1,030	\$2,450
<b>Halibut and Black Cod</b>			
Number of Workers	6,300	2,500	8,800
Average and Equivalent Monthly Employment	4,400	1,900	6,300
Labor Income (in \$Millions)	\$260	\$80	\$340
Output (Harvest Value in \$Millions)	\$360	\$380	\$740
<b>Alaska Pollock, Pacific Cod, and Other Groundfish/Flatfish</b>			
Number of Workers	13,900	3,500	18,100
Average and Equivalent Monthly Employment	11,900	2,600	14,600
Labor Income (in \$Millions)	\$670	\$110	\$780
Output (Harvest Value in \$Millions)	\$2,360	\$520	\$2,880
<b>Crab</b>			
Number of Workers	3,700	1,400	5,100
Average and Equivalent Monthly Employment	3,500	1,100	4,500
Labor Income (in \$Millions)	\$200	\$40	\$240
Output (Harvest Value in \$Millions)	\$400	\$210	\$670

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

Processing workers and some government staff often owe their job to more than one species. The study team used primary data to assign these workers to a species group. Processing workers were assigned based on the gross margin for a particular species group within a region; so the more impact a given species had on the processors' gross margin, the more employment was assigned to that group with that region. Although many fishery managers do deal with one particular fishery, many government workers have more general positions. These workers were assigned to a species category based on the relative ex-vessel value of the species in state and federally managed fisheries.

## Economic Impact of Commercial Seafood Industry on Alaska Residents

The seafood industry directly employed an estimated 27,230 Alaska residents in 2011. This figure includes 18,050 commercial fishermen claiming residency in Alaska. Therefore, commercial fishing employs approximately two out of three residents who are directly employed by the Alaska seafood industry. The other third are employed in seafood processing (5,510 residents) and other industry support functions (3,670).

Alaska residents earned an estimated \$836 million from direct employment in the seafood industry in 2011. Resident commercial fishermen earned an estimated \$481 million, while resident processors and support sector workers earned an estimated \$133 and \$225 million, respectively.

### Direct Employment of Alaska Residents in the Seafood Industry by Region, 2011

Region	Commercial Fishing	Seafood Processing	Support Sector	Total
<b>Estimated Number of Workers by Region of Residence</b>				
Southeast	4,690	880	1,150	6,720
Southcentral	6,050	1,000	480	7,530
Kodiak	1,570	1,450	1,450	4,470
BSAI	780	1,450	240	2,470
Bristol Bay	1,620	290	260	2,170
Arctic, Yukon, and Kuskokwim	3,170	440	60	3,670
Other/Unknown in Alaska	190	-	30	220
<b>Total Alaska Resident</b>	<b>18,050</b>	<b>5,510</b>	<b>3,670</b>	<b>27,230</b>
<b>Estimated Earnings by Region of Residence (in \$Millions)</b>				
Southeast	\$147	\$22	\$81	\$250
Southcentral	124	18	17	\$159
Kodiak	117	33	104	\$254
BSAI	63	50	11	\$124
Bristol Bay	12	3	10	\$25
Arctic, Yukon, and Kuskokwim	15	3	2	\$20
Other/Unknown in Alaska	3	-	1	\$4
<b>Total Alaska Resident</b>	<b>\$481</b>	<b>\$133</b>	<b>\$225</b>	<b>\$836</b>

Note: Residency for seafood processing workers is based on DOLWD data. Resident processing workers are assumed to reside within the region they are working. Nonresident processing workers who do not reside in Alaska year-round, based on eligibility for a Permanent Fund Dividend, are not included in these data. Totals may not sum due to rounding.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

The majority of Alaska residents who directly participate in the seafood industry reside in the Southcentral region, yet that region has the lowest industry participation rate when compared to the overall population of each region (see table below). This fact illustrates a key point about Alaska's seafood industry; while the industry employs thousands of people from Alaska's more populated areas, the jobs it provides for rural coastal regions are critically important to those local and regional economies.

## Alaska Resident Direct Employment in the Seafood Industry by Region, 2011

Region	Direct Employment in Seafood Industry	Regional Population	Pct. of Resident Participation
Southeast	6,720	73,700	9%
Southcentral	7,530	454,400	2%
Kodiak	4,470	14,100	32%
BSAI	2,470	9,000	27%
Bristol Bay	2,170	7,400	29%
Arctic, Yukon, and Kuskokwim	3,670	42,500	9%
Other/Unknown in Alaska	220	122,014	<1%
<b>Total Alaska Resident</b>	<b>27,230</b>	<b>723,100</b>	<b>4%</b>

Note: Figures have been rounded. Totals may not sum due to rounding.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

In western Alaska, from Kodiak to Bristol Bay, more than one-in-four residents are employed in the seafood industry at some point during the year. Narrowing the population in these regions to the ages of 20 to 69, and more than 40 percent of adult, working-age residents in western Alaska are directly employed in the seafood industry.

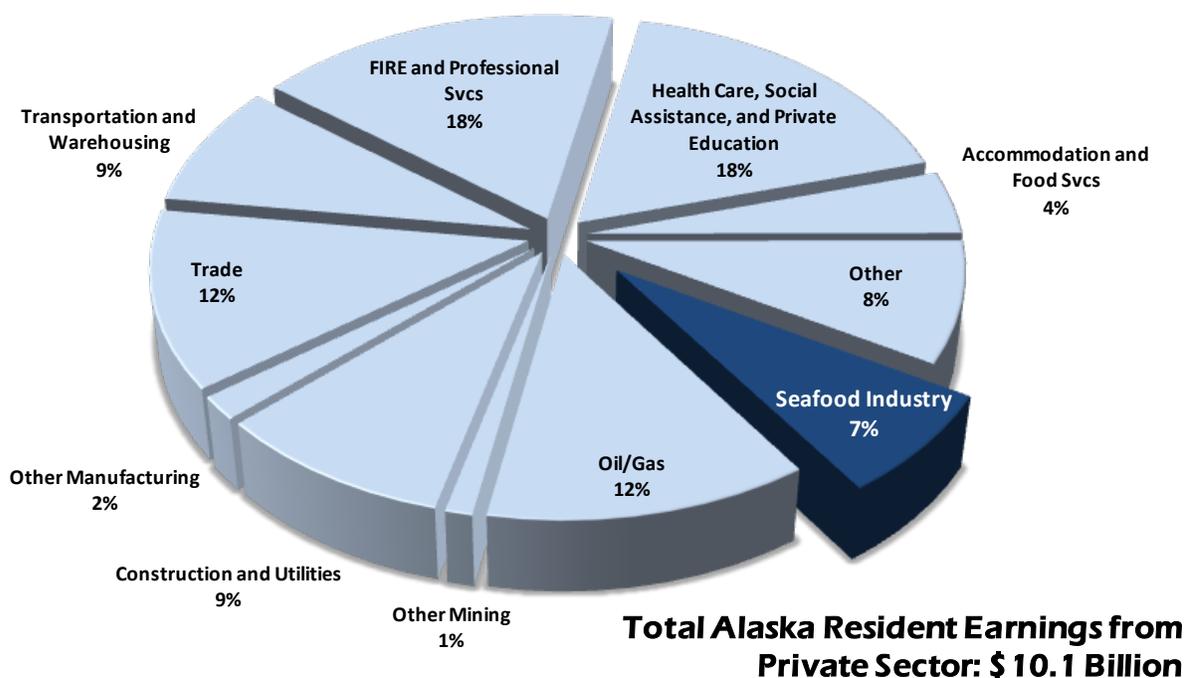


The Holland Family, a crab and halibut fishing family from Kodiak, Alaska  
(image credit: Corey Arnold)

Southeast Alaska contains 6,720 residents who are employed in the commercial seafood industry. Commercial fisheries employ nearly 5,000 residents, but over 1,000 Southeast residents are also employed in support occupations. Juneau, the state's capital, is home to administrative and management operations for several fisheries-related agencies and Southeast also has more salmon hatcheries than any other region in the state.

The seafood industry directly employs four percent of all Alaska residents, but employs an estimated 6 percent of all residents between the ages of 20 and 69. It is estimated the industry directly accounted for 7 percent of all private sector resident earnings in 2011. Amongst basic sectors, the seafood industry ranks second to the oil/gas industry in terms of resident earnings. Other sectors, such as health care, construction, and trade had higher resident earnings than the seafood industry, but these sectors are different in nature as they are primarily engaged in selling goods/services within the state economy as opposed to creating value from naturally occurring resources (and bringing new money into the economy, as the oil/gas, seafood, visitor industry, and other basic sectors do).

## Alaska Resident Earnings, by Private Sector Industry, 2011



Source: McDowell Group estimates based on IMPLAN, DOLWD, ADFG, and NMFS data.

### NONRESIDENTS IN ALASKA'S SEAFOOD INDUSTRY

Like many other industries in Alaska, nonresidents account for a significant portion of employment and earnings within the seafood industry, and Lower 48 (or foreign) based firms account for much of the earnings in the industry. This involvement is often a proverbial double-edged sword. On the one hand, Alaska's economy would certainly benefit if more seafood-related earnings went to Alaska residents and then circulated within the state. However, most seafood is caught in very remote communities with small populations; these regions simply do not have enough local residents to catch, process, and manage the local seafood resource. Secondly, involvement from large non-local companies eliminates some of the risk associated with natural resource harvest. Smaller processing firms do not have the same capacity to weather a series of weak runs or poor market years. Further, larger companies maintain the marketing and distribution functions in the lower-48 that might be difficult for Alaska-based firms to establish. Over 30 percent of Alaska's seafood is sold into U.S. markets, and while marketing from Alaska may be possible, distribution would be much more difficult. Finally, much of the investment in processing infrastructure in Alaska is made by firms headquartered elsewhere.



The seafood processing employs large numbers of nonresidents in remote areas and during the busy summer salmon season. (Image credit: Juneau Empire)

# Role of Seafood Industry in Alaska's Economy

Including direct and secondary impacts, the commercial seafood industry accounts for 9 percent of all jobs in Alaska.<sup>4</sup> In 2011, the industry provided full and part-time jobs to 77,400 people and paid out an estimated \$2.2 billion in labor income, including all multiplier effects. In terms of the number of workers employed, the commercial seafood industry is the state's largest private sector employer.

This chapter compares the seafood industry to Alaska's other important basic sectors and analyzes the strategic, cultural, and social impact the industry has on Alaska communities.

In this chapter seafood industry employment is presented in terms of monthly averages. As noted previously, the seafood industry employs a large number of seasonal workers. While estimates of annual or monthly average employment in the seafood industry are somewhat artificial and may appear to understate the importance of the seafood industry, such measures are necessary to make an apples-to-apples comparison with other Alaska industries.

## Alaska Seafood vs Other Industries

Alaska's economy has famously been compared to a three-legged stool, where the livelihood of 700,000-plus Alaskans is supported by petro-dollars, other natural resources, and federal government spending (in excess of the state's contribution to federal revenues). The commercial seafood industry is one of Alaska's "other" resources, along with the visitor industry, mining, timber, and other sectors based on natural, geographic, or human resources. The metaphor may not be precise, however, it is a helpful way for people to envision Alaska's economy. Data from recent years suggest the petroleum industry and the bevy of legacy impacts accruing from oil tax revenues administered by state government account for just over 40 percent of total Alaska employment. Federal government accounts for slightly less than 30 percent of total employment.



The commercial seafood industry is the largest "other" resource sector in Alaska, in terms of employment, earnings, exports, production, and output. Aside from fur trading, it was also Alaska's first industrial "economic" leg, followed by mining, timber, the federal government, petroleum, and the visitor industry. Because Alaska seafood resources are well managed and uniquely natural in an increasingly polluted world, the seafood "leg" could end up being Alaska's most durable sector in the long run.

<sup>4</sup> On a monthly average or equivalent basis.

## Employment and Labor Income in Selected Alaska Industries

	Direct Employment	Total Employment	Direct Labor Income (\$Millions)	Total Labor Income (\$Millions)
<b>Petroleum Industry</b>				
Oil/Gas Industry <sup>1</sup>	13,000	44,800	\$1,860	\$2,650
Add'l Oil/Gas Impact from Tax Revenue and PFD Fund <sup>2</sup>	-	65,200	-	\$3,760
Add'l Impacts from Spinoff Effects <sup>3</sup>	-	60,000	-	\$3,120
<b>Federal Government</b>				
Federal Government (including Military) <sup>4</sup>	46,700	125,000	\$4,820	\$7,210
<b>Other Selected Resource Industries</b>				
<b>Commercial Seafood Industry</b>	<b>30,900</b>	<b>41,500</b>	<b>\$1,730</b>	<b>\$2,172</b>
Visitor Industry MG <sup>5</sup>	28,300	37,800	\$860	\$1,240
Mining Industry MG <sup>6</sup>	4,100	8,200	\$300	\$565
<b>Total Alaska Employment<sup>7</sup></b>	<b>-</b>	<b>453,400</b>	<b>-</b>	<b>\$26,160</b>

<sup>1</sup> *The Role of the Oil and Gas Industry in Alaska's Economy*, McDowell Group, September 2011.

<sup>2</sup> McDowell Group estimates, based on #1 and *What Drives the Alaska Economy*, UA Research Summary No. 13, December 2008.

<sup>3</sup> *Oil Pumps Alaska's Economy to Twice the Size – But What's Ahead?*, UA Research Summary No. 17, February 2011, and McDowell Group labor income estimates.

<sup>4</sup> Direct data from IMPLAN, labor income includes value of salaries and benefits. Total data comes from *What Drives the Alaska Economy*, UA Research Summary No. 13, December 2008 and McDowell Group labor income estimates.

<sup>5</sup> *Economic Impact of Alaska's Visitor Industry 2011-12*, McDowell Group, February 2013

<sup>6</sup> *The Economic Impacts of Alaska's Mining Industry*, McDowell Group, January 2012.

<sup>7</sup> Data from IMPLAN, based on BEA data.

Source of Commercial Seafood Industry data: McDowell Group estimates, based on ADFG, NMFS, ADOLWD, and IMPLAN.

### Spinoff Effects of Alaska Seafood: CDQ Program and Lower Cost of Living

In the same way the oil industry produces significant spinoff effects on a statewide level, the seafood industry provides similar benefits to fishing communities. Utilities, shipping costs, fuel costs, and tax rates are lower in these communities as a result of seafood industry activity. The seafood industry provides economies of scale that drive down the cost of these items for year-round residents. Fishing communities also benefit from marine infrastructure, which is made possible by the commercial seafood industry.

Communities in western Alaska, in particular, benefit indirectly from their region's seafood resource through tax revenue and income derived through the CDQ program. City taxes on seafood production are a significant source of revenue in several western Alaska communities.



An AML tug and barge hauls cargo in Southeast, Alaska.

According to annual reports by the Western Alaska Community Development Association, the CDQ program resulted in the following benefits to regional residents:

- Economic investments of approximately \$386 million between 2010 and 2011
- Creation of 2,400 wage and salary jobs, and payments made to 3,600 commercial fishermen (permit holders and crew members)
- Funding for 1,600 training and scholarship opportunities worth \$2.8 million
- Total net assets of \$800 million held by the six CDQ groups

In addition, the industry's impact on marine cargo is evident on a statewide basis. According to industry representatives, seafood backhaul lowers northbound freight rates by 10 percent. This backhaul discount lowers the cost of living in coastal Alaska.<sup>5</sup>

## Alaska Seafood: A Sustainable Economic Driver

One thing the three-legged stool does not take into account is sustainability. Seafood is Alaska's most valuable renewable resource, and with responsible stewardship jobs created by the industry can be passed down from generation to generation.



The Hardcastle and Peterson families, gillnetters and small processors from Juneau, Alaska (Image: Corey Arnold).

The North Pacific Ocean is an incredibly productive environment for dozens of commercial seafood species. In a world that is growing more developed with fewer pristine environments, these attributes should add even more value to Alaska seafood as a clean, sustainable source of wild seafood. This makes the cumulative value of Alaska's seafood resource virtually priceless.

## An Important Cultural Identity for Alaska



Traditional dried salmon in Western Alaska.

Alaska seafood is engrained in the cultural identity of coastal Alaska and the state is well known world-wide for its marine resources. According to research conducted by Dataessential Menu Trends, Alaska seafood is the second most commonly specified brand on U.S. menus, and the Hale Group found 77 percent of U.S. consumers reported that seeing the Alaska seafood brand on a menu would influence their selection. So the true value of the resource goes beyond traditional

<sup>5</sup> Jim Jansen, CEO of Lynden Transport. Alaska Marine Lines, a subsidiary of Lynden Transport, is the primary shipper in many of Alaska's coastal communities.

economic measurements.

Consumers and Alaska residents alike associate the state's image of a pristine, natural environment with seafood. While not necessarily quantifiable, salmon, halibut, and many other species have a strong spiritual significance for tens of thousands of Alaskans.

The perception of Alaskan stewardship is an immeasurable but important component to the seafood and visitor industries. Millions of people eat Alaska seafood for the same reason more than one million visitors travel to the state each year – because they value Alaska's pristine environment.

## **Tax Benefits**

Managing Alaska's seafood industry and paying for salmon enhancement programs requires significant ongoing investment. Research conducted for this project suggests the total cost of government activities associated with the commercial seafood industry cost roughly \$430 million in 2011.

This amounts to 9.3 percent of Alaska's total first wholesale value of \$4.6 billion. Sustainability is often explained in qualitative terms related to management practices and commitments made to stakeholders, but sustainability also has a quantitative cost. The industry covers these costs and more through taxes, fees, and self assessments. In FY 2011, the industry paid approximately \$32 million in state-levied taxes that went into Alaska's general fund. In addition, the industry paid \$27 million for self-assessments and state fees to fund enhancement projects, marketing activities, specific management functions, the fishermen's (disability) fund, and other program costs. In addition, local government's collected an estimated \$90 million in various taxes, which partially offsets the need for state funding and tax revenue from local residents/businesses in some communities. These taxes fund city water, utility, harbor, police, fire, and other functions in fishing communities.



Alaska dive fisheries are funded through assessments levied on dive fisheries.

The lion's share of management and enforcement funding comes from federal sources and most of these are general appropriations, typically through the Department of Commerce. Debiting payments made to the State of Alaska leaves the industry with a \$371 million tab to fund its own management. Assuming an effective tax rate of 18 to 20 percent and estimated direct and secondary earnings of \$2.2 billion results in federal income tax receipts of \$396 to \$440 million. Also, this doesn't include direct and indirect earnings earned in the lower-48 as a result of Alaska seafood, which also generate income tax revenue for the federal government.

Fees paid to many federal agencies for specific functions, such as observer coverage, were not readily available for this study but would add to the amount paid to the federal government for management activities.

# **II. Regional Impact of Alaska Seafood**

# Economic Impact of Seafood Industry in Southeast Alaska

The Southeast region includes the City and Borough Yakutat and all other Alaska borough and census areas to the south. In 2011 Southeast Alaska's population totaled 73,715 residents. The region produced \$641 million worth of seafood (in first wholesale terms) in 2011.

The seafood industry directly employs about 13,500 individuals within the region and generates an estimated \$321 million in labor income. On an average monthly basis, the seafood industry directly creates 6,500 jobs. The commercial fleet consists of 2,300 vessels and the region contains 45 registered shore-based processing facilities.

## Seafood Industry in Southeast Alaska: Direct Employment and Earnings (2011)

	Total Participation Within Southeast Fisheries	Regional Resident Participation in Alaska Seafood Industry
<b>Commercial Fishing</b>		
Number of Fishermen	6,600 <sup>1</sup>	4,690
Active CFEC Permit Owners	N/A	2,110
Crew Members	N/A	2,580
Number of Commercial Vessels	2,300	N/A
Equivalent Monthly Avg. Employment	3,900	2,600
Estimated Labor Income (in \$Millions)	\$176	\$147
Harvest Value (in \$Millions)	\$341	\$236
<b>Seafood Processing</b>		
Number of Workers	5,700	880
Average Monthly Employment	1,600	650 <sup>2</sup>
Wage and Salary Earnings (in \$Millions)	\$62	\$22
First Wholesale Value (in \$Millions)	\$641	N/A
<b>Government, Salmon Hatcheries, and Tender Operators</b>		
Number of Workers	1,200	1,150
Average Monthly Employment	1,000	950
Labor Income and Benefits (in \$Millions)	\$83	\$81
<b>Total Seafood Sector</b>		
Number of Workers	13,500	6,720
Equivalent and Average Monthly Employment	6,500	4,200
Total Estimated Labor Income (in \$Millions)	\$321	\$250

<sup>1</sup> The number of commercial fishing workers in each region has been estimated by the authors based on the number of active vessels present in the region, the type of fisheries found in the region, and the number of local resident commercial fishermen. Data to ascertain the exact number of workers is not possible because crew member participation is not tracked by fishery or region.

<sup>2</sup> Estimate based on ratio of resident earnings to total earnings.

Source: ADFG, DOLWD, ADOA, and McDowell Group estimates.

Southeast Alaska produces salmon, halibut, black cod, crab, and other shellfish species. Commercial fishing accounts for the majority of the earnings and employment associated with the industry, but Southeast Alaska also has 11 salmon hatcheries and is the administrative home for state and federal agencies that manage fisheries.

Residents make up about half of the region’s seafood industry workforce, but account for 78 percent of the industry’s labor income. On an average monthly basis, the seafood industry directly creates 6,500 jobs, most of which are held by local residents. Southeast Alaska features a large number of “direct support” workers due to the region’s salmon hatcheries and prevalence of government operations.

Including multiplier effects, the commercial seafood industry created year-round and seasonal jobs for 17,500 workers who earned and estimated \$468 million in labor income during 2011 in Southeast Alaska. On an average monthly basis, the commercial seafood industry created 9,650 jobs in Southeast Alaska.

### Total Economic Impact of the Commercial Seafood Industry in Southeast Alaska, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Commercial Fishing</b>			
Estimated Number of Workers	6,600	1,800	8,400
Equivalent Monthly Avg. Employment	3,900	1,400	5,300
Labor Income (in \$Millions)	\$176	\$79	\$255
<b>Seafood Processing</b>			
Number of Workers	5,700	1,200	6,900
Average Monthly Employment	1,600	900	2,500
Labor Income (in \$Millions)	\$62	\$31	\$93
<b>Government, Salmon Hatcheries, and Tender Operators</b>			
Number of Workers	1,200	1,000	2,200
Average Monthly Employment	1,000	850	1,850
Labor Income (in \$Millions)	\$83	\$37	\$120
<b>Total Seafood Sector</b>			
Number of Workers	13,500	4,000	17,500
Average Monthly Employment and FTE’s	6,500	3,150	9,650
Total Estimated Earnings (in \$Millions)	\$321	\$147	\$468

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

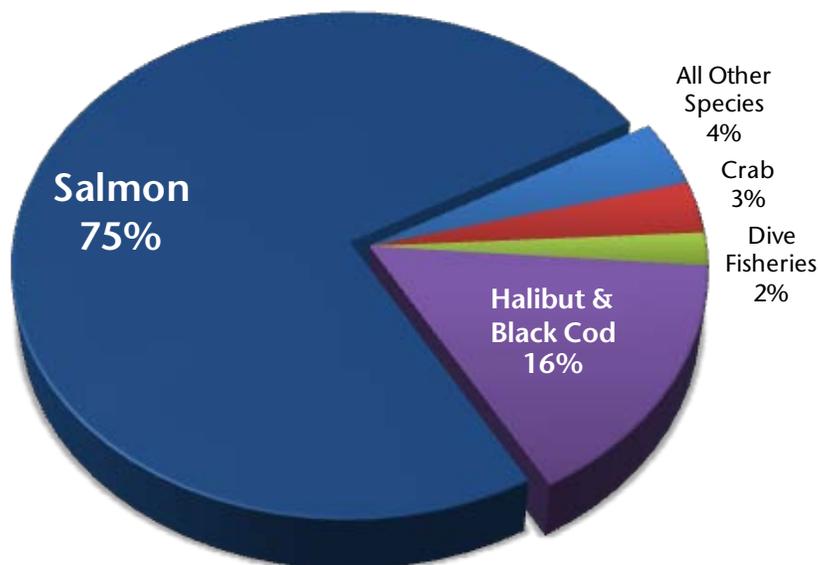
Southeast Alaska’s seafood industry included about 2,300 active commercial fishing vessels in 2011 and all but 444 of them landed salmon that year. Many of these vessels participate in multiple fisheries. The number of vessels participating in regional commercial fisheries during 2011, broken out by species, is as follows:

Salmon (1,857)      Shellfish (475)      Halibut and Black Cod (627)      Herring (95)

Salmon accounted for 75 percent of the region’s total wholesale value in 2011 and as a result drives most of the economic effects associated with the commercial seafood industry in Southeast Alaska. Halibut and black cod account for 16 percent of the region’s total wholesale value, and provide fishermen with an important secondary source of income. Many salmon fishermen participate in halibut and black cod fisheries in the

spring prior to the summer salmon season. Dive fisheries, crab fisheries, and herring fisheries also provide income for fishermen and processors.

### First Wholesale Value of Southeast Alaska Seafood, by Species, 2011



**Total: \$641 million**

Source: ADFG (COAR data).

#### REGIONAL SPOTLIGHT: SALMON HATCHERIES

Southeast Alaska salmon hatcheries produce salmon fry for regional commercial, sport, and personal-use fisheries. The hatcheries use wild-stock salmon to breed fry in an effort to improve riparian survival rates (before the fish migrate to the open ocean).

Southeast's 11 salmon hatcheries employ roughly 250 workers and create 160 jobs (on an average monthly basis) per year. However, their impact goes far beyond these direct employment totals. Hatcheries typically account for 15 to 30 percent of the region's salmon harvest and are especially important for the region's gillnet and seine fleet.



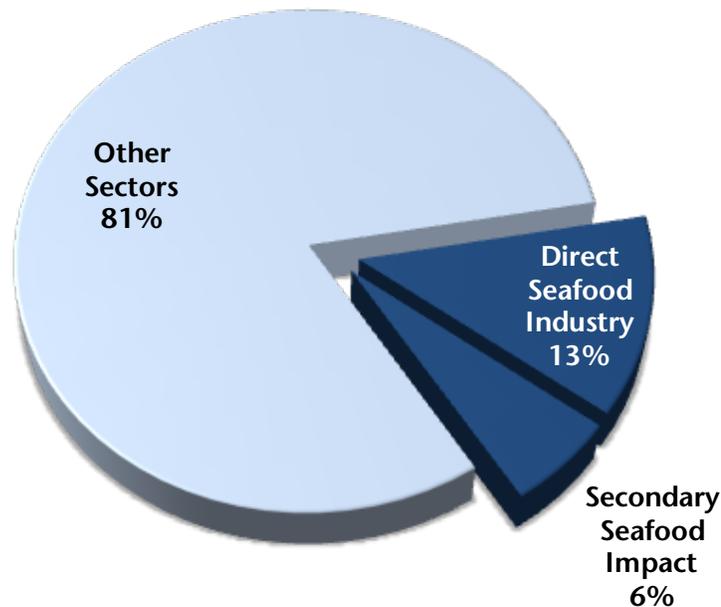
Workers at DIPAC salmon hatchery in Juneau, Alaska.

Southeast Alaska produces large numbers of pink salmon in odd-numbered years. Most hatchery-bred salmon caught in commercial fisheries consist of chum salmon. Chum salmon production helps offset the odd-even pink salmon abundance cycle. This provides fishermen and processors with a valuable source of raw material, especially in even-numbered years when pink are harvests are low.

## Role of Seafood Industry in Southeast Alaska Economy

The seafood industry directly accounted for 13 percent of all labor income earned in Southeast Alaska during 2011. Indirect and induced effects associated with the commercial seafood industry accounted for an additional 6 percent of total labor income. In total, the seafood industry accounted for 19 percent of all labor income earned in Southeast Alaska during 2011.

### Economic Impact of Seafood Industry in Southeast Alaska, Labor Income, 2011



Source: McDowell Group estimate compared to BEA data.

The commercial seafood industry also helps to decrease the cost of living in Southeast Alaska. Seafood is a significant source of backhaul for regional barge operators. Revenue from exporting seafood out of the region covers some of the cost associated with bringing other goods into the region – an important consideration given that most Southeast communities are not connected by any road system.

Commercial fishing also benefits the Ketchikan Shipyard. The state-owned facility is managed by Vigor Industrial and supports 160 full-time equivalent jobs that are primarily filled by local residents. The seafood industry represents 25 to 30 percent of the shipyard's business and company management sees a growing potential for servicing CDQ vessels and replacing older Bering Sea vessels.



Construction of the 136' F/V Arctic Prowler in Ketchikan, Alaska.

# Economic Impact of Seafood Industry in Southcentral Alaska

The Southcentral region includes the Municipality of Anchorage, the Matanuska-Susitna Borough, the Kenai Peninsula Borough, and Valdez-Cordova census area. In 2011, Southcentral Alaska's population totaled 454,385 residents. The region produced \$430 million worth of seafood in 2011 (in first wholesale terms). The seafood industry directly employs an estimated 10,500 individuals within the region and generates an estimated \$164 million in labor income.

Because Southcentral contains most of Alaska's population base, it is not surprising that most fisheries within the region are prosecuted by Southcentral residents. Southcentral Alaska also includes more direct resident industry participants (7,530) than any other region in the state because a large number of crew members and permit holders reside in Southcentral but fish elsewhere in the state.

## Seafood Industry in Southcentral Alaska: Direct Employment and Earnings (2011)

	Total Participation Within Southcentral Fisheries	Regional Resident Participation in Alaska Seafood Industry
<b>Commercial Fishing</b>		
Estimated Number of Fishermen	5,500	6,050
Active CFEC Permit Owners	N/A	2,190
Crew Members	N/A	3,860
Number of Commercial Vessels	1,480	N/A
Equivalent Monthly Avg. Employment	2,000	2,100
Estimated Labor Income (in \$Millions)	\$100	\$124
Harvest Value (in \$Millions)	\$239	\$259
<b>Seafood Processing</b>		
Number of Workers	4,500	1,000
Average Monthly Employment	1,200	500 <sup>1</sup>
Wage and Salary Earnings (in \$Millions)	\$46	\$18
First Wholesale Value (in \$Millions)	\$430	N/A
<b>Government, Salmon Hatcheries, and Tender Operators</b>		
Number of Workers	500	480
Average Monthly Employment	250	250
Labor Income and Benefits (in \$Millions)	\$18	\$17
<b>Total Seafood Sector</b>		
Number of Workers	10,500	7,530
Equivalent and Average Monthly Employment	3,450	2,850
Total Estimated Labor Income (in \$Millions)	\$164	\$159

Note: Figures are rounded, therefore totals may not sum.

<sup>1</sup> Estimated based on ratio of resident earnings to total earnings.

Source: ADFG and McDowell Group estimates.

Including multiplier effects, the commercial seafood industry created year-round and seasonal jobs for 14,300 workers who earned \$304 million in labor income during 2011 in Southcentral Alaska. On an average monthly basis, the commercial seafood industry created 6,350 jobs in 2011.



Plaques memorializing fishermen overlooking Cordova, Alaska

Indirect and induced impacts are relatively high in Southcentral compared to the level of employment generated by regional fisheries for several reasons. First, Southcentral is much more populous than other areas in Alaska and features a more developed economy. Therefore, economic multipliers tend to be higher in Southcentral. Many Southcentral fishermen work in other regions and bring their earnings home, which creates additional economic benefits beyond those accruing from local fisheries. Some government operations that manage fisheries in other areas are located in Anchorage. Finally, Anchorage is a hub that services many remote operations in western Alaska, including the seafood industry. As a result, the region indirectly benefits from remote fisheries in western Alaska.

### Total Economic Impact of the Commercial Seafood Industry in Southcentral Alaska, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Commercial Fishing</b>			
Number of Workers	5,500	2,100	7,600
Equivalent Monthly Avg. Employment	2,000	1,600	3,600
Labor Income (in \$Millions)	\$100	\$95	\$195
<b>Seafood Processing</b>			
Number of Workers	4,500	1,200	5,700
Average Monthly Employment	1,200	900	2,100
Labor Income (in \$Millions)	\$46	\$27	\$73
<b>Government, Salmon Hatcheries, Tender Operators, and CDQ operations</b>			
Number of Workers	500	500	1,000
Average Monthly Employment	250	400	650
Labor Income (in \$Millions)	\$18	\$18	\$36
<b>Total Seafood Sector</b>			
Number of Workers	10,500	3,800	14,300
Equivalent and Average Monthly Employment	3,450	2,900	6,350
Total Estimated Earnings (in \$Millions)	\$164	\$140	\$304

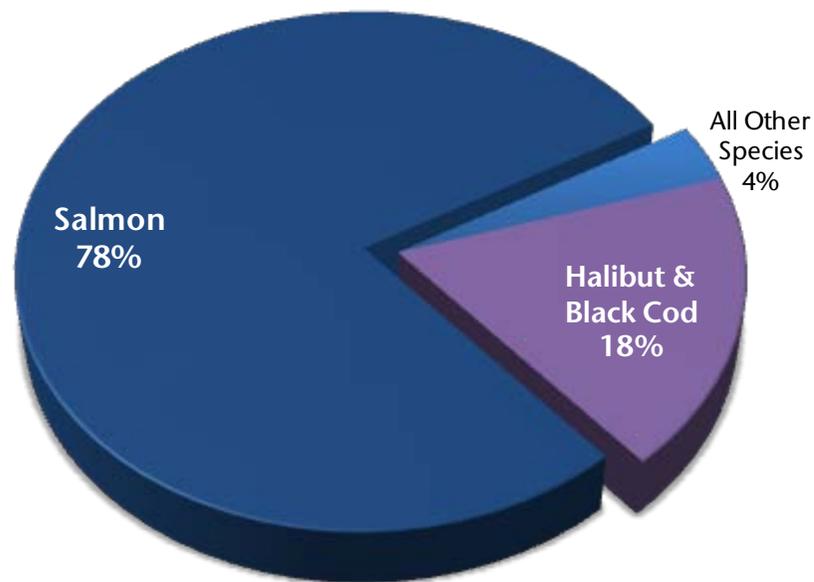
Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

Southcentral Alaska contained 1,480 active commercial fishing vessels in 2011 (not including skiffs used in setnet operations). The number of vessels participating in regional commercial fisheries during 2011, broken out by key species, is as follows (some vessels fish in more than one fishery):

Salmon (1,206)      Halibut and Black Cod (309)

Salmon accounted for 78 percent of the region's total wholesale value. Halibut and black cod accounted for 18 percent of the region's total wholesale value, and provide fishermen with an important secondary source of income. Southcentral also contains state and federal groundfish fisheries, where fishermen often target rockfish or pacific cod.

### First Wholesale Value of Southcentral Alaska Seafood, by Species, 2011



**Total: \$430 million**

Source: ADFG (COAR data).

# Economic Impact of Seafood Industry in the Kodiak Region

The Kodiak region - including Kodiak Island, Afognak Island, and the nearby mainland communities of Chignik, Chignik Lake, Chignik Lagoon, and Perryville – was home to 14,120 residents in 2011. The region produced \$410 million worth of seafood (in first wholesale terms) in 2011. Kodiak features a diverse collection of commercial species and gear types. The city of Kodiak ranked as the third largest commercial fishing port in the U.S. by value in 2011.

The seafood industry directly employs an estimated 7,500 individuals within the region and generates an estimated \$292 million in labor income. The commercial fleet consists of approximately 570 vessels and the region has 15 shore-based processing facilities.

## Seafood Industry in Kodiak Region: Direct Employment and Earnings (2011)

	Total Participation Within Kodiak Regional Fisheries	Regional Resident Participation in Alaska Seafood Industry
<b>Commercial Fishing</b>		
Estimated Number of Fishermen	2,900	1,570
Active CFEC Permit Owners	N/A	550
Crew Members	N/A	1,030
Number of Commercial Vessels	570 <sup>1</sup>	N/A
Equivalent Monthly Avg. Employment	2,700	1,500
Estimated Labor Income (in \$Millions)	\$137	\$117
Harvest Value (in \$Millions)	\$224	\$194
<b>Seafood Processing</b>		
Number of Workers	3,100	1,450
Average Monthly Employment	1,900	1,300 <sup>2</sup>
Wage and Salary Earnings (in \$Millions)	\$51	\$33
First Wholesale Value (in \$Millions)	\$410	N/A
<b>Government, Salmon Hatcheries, and Tender Operators</b>		
Number of Workers	1,500	1,450
Average Monthly Employment	1,300	1,200
Labor Income and Benefits (in \$Millions)	\$104	\$103
<b>Total Seafood Sector</b>		
Number of Workers	7,500	4,470
Equivalent and Average Monthly Employment	5,800	4,000
Total Estimated Labor Income (in \$Millions)	\$292	\$253

Note: Totals may not sum due to rounding.

<sup>1</sup> Does not include setnet skiffs but does include vessels under 26'.

<sup>2</sup> Estimated based on ratio of resident earnings to total earnings.

Source: ADFG and McDowell Group estimates.

Of all the individuals directly employed in Kodiak’s seafood industry, slightly more than half are local residents. In total, 4,470 adult Kodiak region residents were identified as commercial fishermen, seafood processing workers, or other workers which held jobs in related industries such as Coast Guard servicemen/women, salmon hatcheries, other government staff (related to commercial fisheries), or tender operators. Roughly half of the region’s adult residents are employed at some time during the year by commercial fishing, seafood processing, or within sectors that provide goods, services, or other support to the seafood industry and its workforce.

The seafood industry is the Kodiak region’s key economic driver and creates substantial employment via indirect and induced effects. Based on modeling of the impact of earnings and spending associated with the seafood industry, it is estimated that seafood-related business spending generates jobs for an additional 1,400 workers. Another 1,600 jobs are created as workers spend their earnings within the regional economy. In total, the seafood industry creates jobs for an estimated 3,050 workers in other industries and government agencies.

Including residents and non-resident, and including direct and secondary effects, it is estimated the Kodiak seafood industry provides 8,350 jobs for 10,550 workers, or about 56 percent of the total Kodiak regional employment. These direct and secondary jobs generate wages and earnings equivalent to \$403 million within the Kodiak region, or roughly 67 percent of all labor income earned within the region.<sup>6</sup>

### Total Economic Impact of the Commercial Seafood Industry in Kodiak Region, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Commercial Fishing</b>			
Number of Workers	2,900	1,100	4,000
Equivalent Monthly Avg. Employment	2,700	900	3,600
Labor Income (in \$Millions)	\$137	\$50	\$187
<b>Seafood Processing</b>			
Number of Workers	3,100	700	3,850
Average Monthly Employment	1,800	650	2,450
Labor Income (in \$Millions)	\$51	\$22	\$72
<b>Government, Salmon Hatcheries, and Tender Operators</b>			
Number of Workers	1,500	1,200	2,700
Average Monthly Employment	1,300	1,000	2,300
Labor Income (in \$Millions)	\$105	\$42	\$146
<b>Total Seafood Sector</b>			
Number of Workers	7,500	3,000	10,500
Equivalent and Average Monthly Employment	5,800	2,550	8,350
Total Estimated Earnings (in \$Millions)	\$292	\$111	\$403

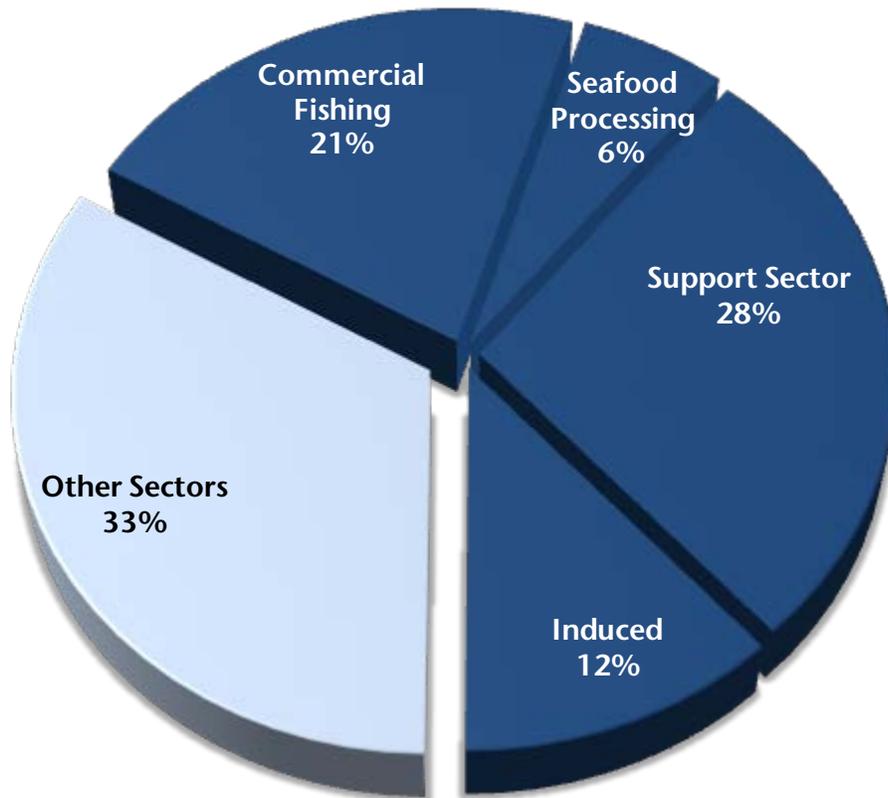
Note: Totals may not sum due to rounding.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

<sup>6</sup> Employment and labor income related to the seafood industry have been compared to similar data released by BEA and additional employment and labor income estimates associated with communities surrounding Chignik.

The commercial seafood industry is estimated to account for two-thirds of all labor income earned in Kodiak. The support sector is the largest component of seafood industry related labor income in Kodiak. For purposes of this study Kodiak’s fisheries-related support sector includes the Coast Guard, which provides enforcement and search and rescue operations in the Gulf of Alaska and Bering Sea. Commercial fishing and seafood processing accounted for 27 percent of Kodiak region’s total labor income in 2011.

### Economic Impact of Seafood Industry in Kodiak Region, Labor Income, 2011



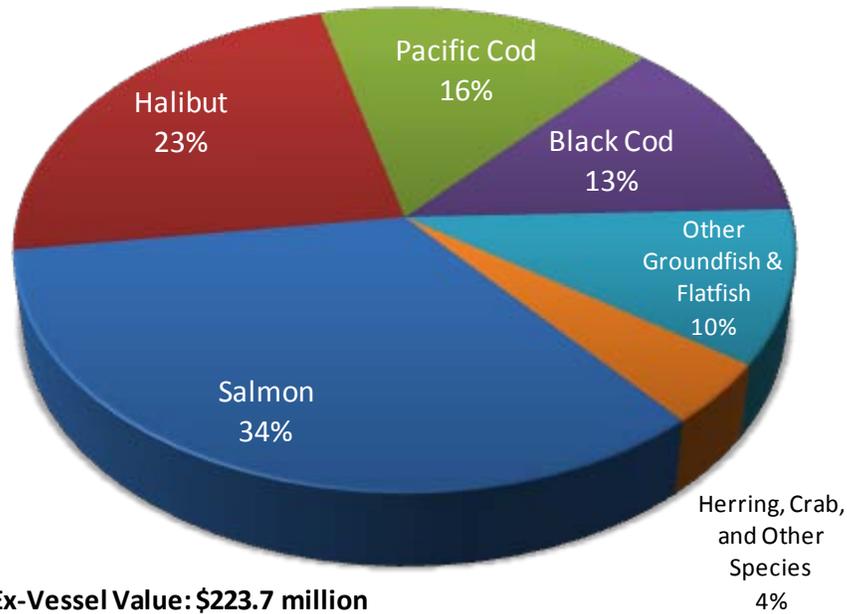
Source: McDowell Group estimates based on BEA, DOLWD, ADFG, and NMFS data.

### Kodiak Commercial Fishing Sector

The city of Kodiak is the third-largest port in the U.S. by landed value and the fifth-largest in terms of landed harvest volume. The Kodiak region accounted for 11 percent of Alaska’s total ex-vessel value in 2011. Outside of the AYK region, the Kodiak region also has the highest percentage of local resident involvement in commercial fishing.

Salmon and IFQ fisheries for halibut and black cod make up roughly two-thirds of the region’s total ex-vessel value. Pacific Cod and other species make up the remaining ex-vessel value. Located near productive fishing waters in the Gulf of Alaska and salmon-rich inshore waters, Kodiak is generally regarded as having the most diverse collection of fisheries in the state.

## Kodiak Ex-Vessel Value by Species Category, 2011



Source: McDowell Group estimates based on NPFMC Economic SAFE report and ADFG COAR report.

Kodiak's regional fishing fleet consists of approximately 570 vessels and 2,900 fishermen. About half of these commercial fishermen reside in the region. A total of 1,570 regional residents either made a commercial landing or purchased a commercial crew member license in 2011. Therefore, it is estimated that 17 percent of all adult-aged men and women residing in the Kodiak region during 2011 participated directly in commercial fisheries.

About half of Kodiak's commercial fishing fleets target salmon, though it is common for Kodiak vessels to participate in multiple fisheries. Many fishermen target groundfish with mechanical jig gear or pots. Longlining for halibut, black cod, and pacific cod is also very popular. Kodiak trawlers tend to target flatfish and rockfish.

Regional residents owned 377 active commercial fishing vessels in 2011. Longliners, purse seiners, and pot vessels are the most common gear types amongst residents. About half of purse seiners owned by Kodiak regional residents are also listed as long liners, while another two-thirds of these vessels also fish with pot gear. Although the Kodiak region has no driftnet fisheries there were 50 local residents who made landings on a drift gillnet permit elsewhere in the state.



Stern of the aptly named F/V Provider, a 123' fishing vessel

## Kodiak Regional Commercial Fishing Fleet, (2011)

	Number of Vessels Owned by Local Residents	Total Vessels used in Regional Fisheries
Purse Seiners	175	238
Drift Gillnetters	50	0
Catcher/Processor Trawl	0	12
Catcher/Processor Longline	0	20
Catcher/Vessel Trawl	27	48
Catcher/Vessel Longline	215	380
Catcher/Vessel Pot	192	93
<b>Total Number of Fishing Vessels<sup>1</sup></b>	<b>377</b>	<b>570</b>

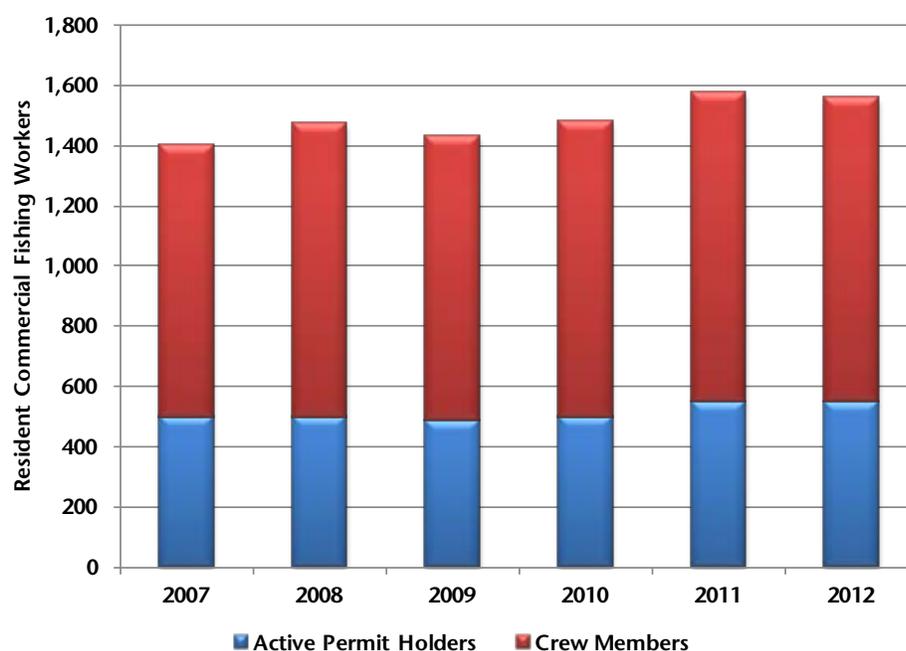
<sup>1</sup> All data pertains only to commercial vessels 26 feet or greater in length.

Note: Vessel counts represent estimates based on non-confidential data and do not include inactive vessels. Totals will not sum because some vessels participate in more than one fishery.

Source: ADFG CFEC data and McDowell Group estimates.

More residents participated in commercial fishing in 2011 than in previous years. The number of resident skippers and crew members increased by 169 in 2011 from the 2010 level. A November 2007 *Alaska Economic Trends* article suggests that most of these workers rely on commercial fishing for all of their income. That study found that the Kodiak region had the lowest percentage of active permit holders who also worked in wage and salary jobs of any region in the state. Overall, the study found that statewide 45 percent of active Alaska skippers and 60 percent of resident crew members held another wage and salary job at some point during the year. However, in the Kodiak region only 21 percent of skippers held another wage and salary job. Indeed, estimates made for this project found the average labor income for Kodiak resident fishermen was \$75,400 in 2011.

### Number of Local Resident Commercial Fishermen, 2007 - 2012



Source: CFEC and ADFG Licensing Data.

## Seafood Processing in Kodiak

The Kodiak region had eleven active seafood processors operating shore-based plants in 2011. Most of these plants are located in the city of Kodiak on the aptly named Cannery Row (Shelikof Street), although Ocean Beauty Seafoods and Icicle Seafood also operate large remote plants in Alitak and Larsen Bay. Regional seafood processors employed a total of 2,850 onshore workers in 2011 and paid out \$51 million in wages and salaries. Alaska residents make up 52 percent of the Kodiak processing workforce and earn 70 percent of the wages and salaries. Kodiak regional processors accounted for 15 percent of Alaska’s total seafood processing employment and 12 percent of all processing wages and salaries in 2011.

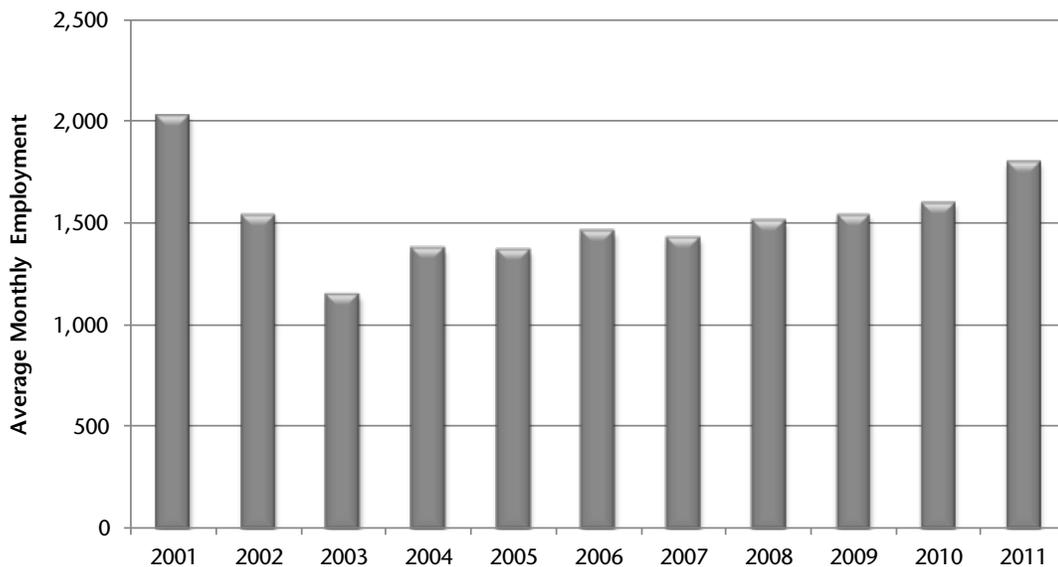
### Kodiak Regional Seafood Processing Sector, 2011

Total Number of Workers (Onshore)	2,850
Alaska Resident Workers	1,440
Average Monthly Employment	1,800
Total Wages and Salaries (in \$Millions)	\$51
Alaska Resident Wages and Salaries (in \$Millions)	\$33
Estimated Gross Processing Revenue (in \$Millions) <sup>1</sup>	\$224
Total First Wholesale Value (in \$Millions)	\$403

<sup>1</sup> Gross processing revenue is equal to first wholesale value less payments made for raw product (ex-vessel value). Source: DOLWD, ADFG COAR report, NPFMC SAFE report, and McDowell Group estimates.

The scale of Kodiak processing operations has increased steadily since 2003. However, average monthly employment is still below levels seen prior to the salmon value crisis of 2002 - 2003. Annual employment figures are not yet available for 2012, but data from the first half of the year suggests processing employment was up nine percent from the previous year.

### Kodiak Seafood Processing Employment, 2001 - 2011



Source: DOLWD, compiled by McDowell Group.

## Seafood Support Sector in Kodiak Region

Kodiak’s seafood support sector employs an estimated 1,900 workers and an average of 1,600 workers per month. Support sector jobs paid an estimated \$123 million in wages and salaries during 2011. The support sector serves a wide range of crucial functions such as fishery management, marine shipping, fleet repair, and retail trade to name a few. Some jobs such as commercial fishery management positions or tender operators are considered direct jobs for purposes of this analysis because they are 100 percent dedicated to supporting the seafood industry, while retail workers or longshoremen would be considered indirect jobs.



Coast Guard and local government workers are part of the region’s seafood support sector.

Roughly half of Kodiak’s support sector jobs consist of government jobs related to fishery enforcement, safety, management, measurement, research, and administration; in addition to local government jobs associated with harbor operations or other divisions that serve the seafood industry. Although these jobs are typically paid for with public funds, the seafood industry generates enough aggregate tax revenue to cover these operations and then some. The U.S. Coast Guard represents the largest share of government jobs related to seafood, followed by the State of Alaska.

### Kodiak Regional Seafood Support Sector, 2011

	Number of Workers	Avg. Monthly Employment	Estimated Labor Income (\$Mil)
Government and Military	1,390	1,190	\$102
Tender Operations	70	40	1.8
Salmon Hatcheries	30	20	1.0
Boat/Equip. Repair, Building, Maint.	140	100	4.6
Shipping and Transportation	120	100	5.3
<b>Total Support Sector</b>	<b>1,740</b>	<b>1,450</b>	<b>\$115</b>

Note: Direct impacts only.

Source: ADFG, DOLWD, IMPLAN, and McDowell Group estimates.

As one of the nation’s busiest fishing ports, Kodiak is home to a wide range of businesses that support the commercial fishing and seafood processing industries. The Kodiak Shipyard is one of two boatyards located in the city of Kodiak and is serviced by 27 businesses who provide a wide range of services to the commercial fishing fleet. Boats up to 660 tons can be hauled out and worked on by contracted service providers or do-it-yourselfers.

# Economic Impact of Seafood Industry in Bering Sea and Aleutian Islands Region

The BSAI region includes the Aleutians East Borough, Aleutian West Census Area, and all seafood operations taking place in the Bering Sea. The region is home to 8,966 residents and produced \$2.4 billion worth of seafood in 2011 (in first wholesale value). The seafood industry directly employs an estimated 15,160 individuals within the region and generates an estimated \$774 million in labor income.

## Seafood Industry in BSAI Region: Direct Employment and Earnings, 2011

	Total Participation Within BSAI Fisheries	Regional Resident Participation in Industry
<b>Commercial Fishing</b>		
Number of Fishermen	5,100 <sup>1</sup>	780
Active CFEC Permit Owners	N/A	250
Crew Members	N/A	530
Number of Commercial Vessels	518	N/A
Equivalent Monthly Avg. Employment	5,100	770
Estimated Labor Income (in \$Millions)	\$564	\$63
Harvest Value (in \$Millions)	\$1,101	\$259
<b>Seafood Processing</b>		
Number of Workers	9,800	1,450
Average Monthly Employment	6,400	1,200
Wage and Salary Earnings (in \$Millions)	\$198	\$50
First Wholesale Value (in \$Millions)	\$2,402	N/A
<b>Government, Salmon Hatcheries, and Tender Operators</b>		
Number of Workers	260	240
Average Monthly Employment	140	130
Labor Income and Benefits (in \$Millions)	\$13	\$12
<b>Total Seafood Sector</b>		
Number of Workers	15,160	2,470
Equivalent and Average Monthly Employment	11,640	2,100
Total Estimated Labor Income (in \$Millions)	\$774	\$125

<sup>1</sup> The number of commercial fishing workers working in each region has been estimated by the authors based on the number of active vessels present in the region, the type of fisheries found in the region, and the number of local resident commercial fishermen. Data to ascertain the exact number of workers is not possible because crew member participation is not tracked by fishery or region.

Source: ADFG, DOLWD, ADOA, and McDowell Group estimates.

Fisheries for groundfish and flatfish species found in the BSAI region account for 40 percent of the entire U.S. commercial fisheries harvest volume. BSAI groundfish/flatfish fisheries are open longer than most other fisheries in the Alaska, leading to longer employment tenures for regional harvesting and processing workers.

Harvesting and processing over 4 billion pounds of seafood in a remote region with fewer than 9,000 residents presents some obvious challenges. These fisheries are among the most efficient in the entire world, but the labor force needed exceeds the entire regional population by nearly two-fold. With such a small local population and a very large harvest volume caught each year, the region relies heavily on nonresident labor.

Even though nonresidents make up the majority of the workforce, it is estimated that roughly 2,500 regional residents are directly employed in the seafood industry. These resident workers earned an estimated \$125 million in labor income during 2011 and had the highest average labor income per resident seafood worker of any region in Alaska.

Including multiplier effects, the commercial seafood industry created year-round and seasonal jobs for 16,490 workers who earned \$816 million in labor income during 2011 in the BSAI Region. On an average monthly basis, the commercial seafood industry created 12,760 jobs.

The BSAI region accounted for 73 percent of Alaska’s commercial seafood harvest, by volume, and roughly 37 percent of total direct employment. Indirect and induced impacts in the region are lower than found elsewhere in Alaska due to the remote location and a workforce primarily consisting of nonresident workers. Despite these attributes, it is estimated the seafood industry creates an additional 1,350 jobs for 1,140 workers in the BSAI region. These impacts include non-fishing/processing operations associated with the Aleutians and Pribilof Islands Development Association CDQ group.

### Total Economic Impact of the Commercial Seafood Industry in BSAI Alaska, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Commercial Fishing</b>			
Number of Workers	5,100	700	5,800
Equivalent Monthly Avg. Employment	5,100	600	5,700
Labor Income (in \$Millions)	\$564	\$25	\$589
<b>Seafood Processing</b>			
Number of Workers	9,800	600	10,400
Average Monthly Employment	6,400	500	6,900
Labor Income (in \$Millions)	\$198	\$16	\$214
<b>Government, Salmon Hatcheries, and Tender Operators</b>			
Number of Workers	240	50	290
Average Monthly Employment	120	40	160
Labor Income (in \$Millions)	\$13	\$1	\$14
<b>Total Seafood Sector</b>			
Number of Workers	15,140	1,350	16,490
Equivalent and Average Monthly Employment	11,620	1,140	12,760
Total Estimated Earnings (in \$Millions)	\$774	\$42	\$816

Note: Totals may not sum due to rounding.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

## Role of Seafood Industry in BSAI Region

The economy of the BSAI region is almost completely dependent upon the commercial seafood industry. It is the major source of cash income in the region (directly or indirectly), and subsistence seafood production is a major source of food for local residents. Without seafood, the only material influx of cash would come from state and federally-funded government programs/receipts, sporadic research expeditions, and a niche tourism industry.



Fishing boats tied up to the Delta Western fuel dock in Dutch Harbor, Alaska.

Comparing the BSAI employment estimates found in this report to other published data on BSAI is difficult because the region is so different than most other places in the country. It's possible that half of the individuals who reside in the region at some point in the year are temporary residents living on boats. Government labor statistics almost certainly underestimate the actual level of economic activity in the region due to differences with respect to counting employment in processing and harvesting sectors. The Bureau of



Workers aboard the BSAI factory trawler F/V Northern Hawk.

Labor Statistics generally counts fishermen as either sole proprietors or as employees of a company. For this reason, fishermen are placed in either the region they live or the region/state where their employer files their unemployment insurance. Processing workers employed on floating processors are typically counted in a separate "offshore" category while processing workers employed on catcher-processors would likely not be counted in Alaska at all.

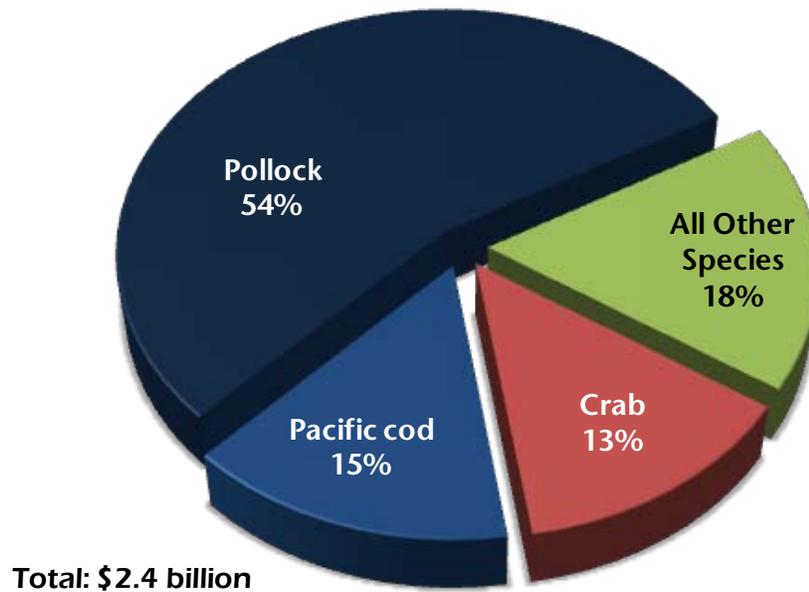
## Wholesale Value by Species

Alaska pollock accounts for over half of the BSAI region's wholesale value. The BSAI Alaska pollock fishery is the largest commercial fishery in the country. Alaska pollock are often caught by trawlers, although a separate trawl fishery exists for flatfish, mackerel, and pacific ocean perch. These species make up most of the "other" category shown below. Pacific cod are typically caught by freezer longliners, a class of large vessels that catches and processes pacific cod on board use hook-and-line gear.

Despite the region's immense harvest of groundfish and flatfish species, the Bering Sea is probably best known for its crab fisheries, thanks to the popular reality TV program *The Deadliest Catch*. Although famous, the region's crab fisheries take a backseat in terms of wholesale value to groundfish and flatfish species.

The BSAI region produced \$2.4 billion worth of seafood in 2011 and is the only Alaska region where salmon does not figure prominently in the regional species makeup.

### First Wholesale Value of BSAI Region Seafood, by Species, 2011



Source: ADFG (COAR data).

# Economic Impact of Seafood Industry in Bristol Bay Region

The Bristol Bay region includes the Bristol Bay Borough, Dillingham Census Area, and Lake and Peninsula Borough (less the communities of Chignik, Chignik Lake, Chignik Lagoon, and Perryville) The region included 7,402 permanent residents in 2011. The seafood industry directly employs an estimated 13,250 individuals within the region and generates an estimated \$148 million in labor income.

Bristol Bay's seafood industry relies primarily on the world's largest sockeye salmon run. The season is brief and intense, and as a result the number of workers participating is much higher than the average monthly employment.

## Seafood Industry in Bristol Bay Region: Direct Employment and Earnings, 2011

	Total Participation Within Bristol Bay Fisheries	Regional Resident Participation in Industry
<b>Commercial Fishing</b>		
Number of Fishermen	7,500 <sup>1</sup>	1,655
Active Permit Owners	N/A	625
Crew Members	N/A	1,030
Number of Commercial Vessels (setnet skiffs not included)	1,780	N/A
Equivalent Monthly Avg. Employment	2,600	300
Estimated Labor Income (in \$Millions)	\$92	\$12
Harvest Value (in \$Millions)	\$192	\$29
<b>Seafood Processing</b>		
Number of Workers	5,500	290
Average Monthly Employment	950	110
Wage and Salary Earnings (in \$Millions)	\$44	\$3
First Wholesale Value (in \$Millions)	\$463	N/A
<b>Government and Tender Operators</b>		
Number of Workers	540	260
Average Monthly Employment	200	120
Labor Income and Benefits (in \$Millions)	\$13	\$10
<b>Total Seafood Sector</b>		
Number of Workers	13,540	2,205
Equivalent and Average Monthly Employment	3,800	530
Total Estimated Labor Income (in \$Millions)	\$148	\$25

Note: Totals may not sum due to rounding.

<sup>1</sup> The number of commercial fishing workers working in each region has been estimated by the authors based on the number of active vessels present in the region, the type of fisheries found in the region, and the number of local resident commercial fishermen. Data to ascertain the exact number of workers is not possible because crew member participation is not tracked by fishery or region.

Source: ADFG, DOLWD, ADOA, and McDowell Group estimates.

Like the BSAI region, the Bristol Bay region depends on a large influx of nonresident labor to catch and process the 20 to 30 million sockeye caught each year during June and July. Even though nonresidents account for most of the employment, the number of regional residents who directly participate in the commercial seafood industry is significant. The region had a total population of 7,400 in 2011 and an estimated working age population of 4,540. Therefore, it is estimated that 49 percent of all working age adults living in the Bristol Bay region directly participate in the commercial seafood industry for at least part of the year.

Including multiplier effects, the commercial seafood industry created (mostly) seasonal jobs for 14,950 workers who earned \$176 million in labor income during 2011 in the Bristol Bay Region. On an average monthly basis, the commercial seafood industry created 4,690 jobs in Bristol Bay.

### Total Economic Impact of the Commercial Seafood Industry in Bristol Bay Region, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Commercial Fishing</b>			
Number of Workers	7,500	1,000	8,500
Equivalent Monthly Avg. Employment	2,600	600	3,200
Labor Income (in \$Millions)	\$92	\$19	\$111
<b>Seafood Processing</b>			
Number of Workers	5,500	300	5,800
Average Monthly Employment	1,000	200	1,200
Labor Income (in \$Millions)	\$44	\$6	\$49
<b>Government, Salmon Hatcheries, and Tender Operators</b>			
Number of Workers	540	110	650
Average Monthly Employment	200	90	290
Labor Income (in \$Millions)	\$13	\$3	\$16
<b>Total Seafood Sector</b>			
Number of Workers	13,540	1,410	14,950
Equivalent and Average Monthly Employment	3,800	890	4,690
Total Estimated Earnings (in \$Millions)	\$148	\$28	\$176

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

The Bristol Bay region generates a significant economic impact for Alaska residents and residents of other West Coast states. The Institute of Social and Economic Research recently completed a study of the Bristol Bay salmon industry that looked at the impact of the fishery on West Coast states and on the U.S. economy as a whole. That study concluded the Bristol Bay salmon fishery created annual average employment of 9,804 in 2010 across the entire



Bristol Bay gillnetters haul gear and jockey for position  
(Image credit: Juneau Empire)

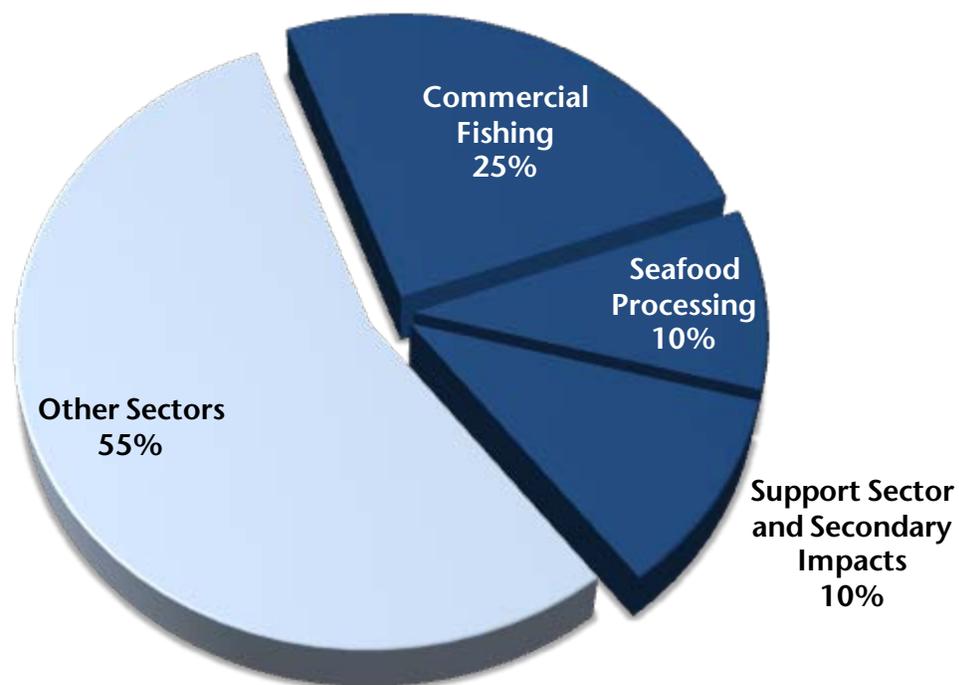
U.S. with most of the impacts going to residents of Alaska and Washington. Economic impact estimates shown in this section apply only to employment generated by the commercial seafood industry within the Bristol Bay region (and do not include any subsequent impacts that take place outside of the region).

The Bristol Bay region is also home the Bristol Bay Economic Development Corporation (BBEDC). A CDQ group with 17 member communities, BBEDC has net assets of nearly \$200 million and owns half of Ocean Beauty Seafoods (one of Alaska’s largest salmon processors). BBEDC granted over \$6.5 million to regional communities in 2011 for city and industry infrastructure, energy assistance, and other economic improvement projects. The group also supports education and training opportunities for regional residents, granting more than \$860,000 in 2011 to students and local programs for scholarships, vocational training, skills training, and program support activities.

### **Role of Seafood Industry in Bristol Bay Region**

The commercial seafood industry accounts for 45 percent all labor income earned within the region. The majority of this income comes from commercial fishing and processing, as direct impacts accounted for 35 percent of total labor income in 2011.

#### **Economic Impact of Seafood Industry in Bristol Bay Region, Avg. Monthly Employment, 2011**



Source: McDowell Group estimates, based on project estimates compared to BEA data.

# Economic Impact of Seafood Industry in the Arctic-Yukon-Kuskokwim Region

The Arctic-Yukon-Kuskokwim (AYK) region includes the Bethel Census Area, Wade Hampton Census Area, Nome Census Area, and Northwest Arctic Borough. The region is home to 42,534 residents and produced \$19.8 million worth of seafood (in first wholesale terms) in 2011. Salmon, caught by setnet fishermen, and a king crab fishery in Norton Sound account for most of the region's commercial seafood harvest. The region also benefits from other fisheries in western Alaska. Some AYK residents participate in Bering Sea and Bristol Bay fisheries, and bring these earnings back to their home region. The AYK region also contains three CDQ groups that fund various development and educational programs in the region.

The Alaska seafood industry directly employs an approximately 4,160 individuals within the region and generates an estimated \$18 million in labor income. On an average monthly basis, the industry directly creates the equivalent of 385 jobs.

## Seafood Industry in AYK Region: Direct Employment and Earnings, 2011

	Total Participation Within AYK Fisheries Only	Regional Resident Participation in Total Alaska Industry
<b>Commercial Fishing</b>		
Number of Fishermen	3,600 <sup>1</sup>	3,170
Active Permit Owners	N/A	1,420
Crew Members	N/A	1,750
Equivalent Monthly Avg. Employment	200	370
Estimated Labor Income (in \$Millions)	\$9.1	\$14.9
Harvest Value (in \$Millions)	\$11.3	\$22.2
<b>Seafood Processing</b>		
Number of Workers	500	440
Average Monthly Employment	150	120
Wage and Salary Earnings (in \$Millions)	\$3.8	\$2.9
First Wholesale Value (in \$Millions)	\$19.8	N/A
<b>Government and Tender Operators</b>		
Number of Workers	60	60
Average Monthly Employment	35	35
Labor Income and Benefits (in \$Millions)	\$2.3	\$2.3
<b>Total Seafood Sector</b>		
Number of Workers	4,160	3,670
Equivalent and Average Monthly Employment	385	525
Total Estimated Labor Income (in \$Millions)	\$15.2	\$20.1

<sup>1</sup> The number of commercial fishing workers working in each region has been estimated by the authors based on the number of active vessels present in the region, the type of fisheries found in the region, and the number of local resident commercial fishermen. Data to ascertain the exact number of workers is not possible because crew member participation is not tracked by fishery or region.

Source: ADFG, DOLWD, ADOA, and McDowell Group estimates.

Many AYK residents live a subsistence lifestyle. Private sector employment opportunities are relatively scarce in the region and the commercial seafood industry provides a valuable opportunity for residents to earn money to buy fuel, supplies, and other necessities. The vast majority AYK fishermen are men, and like other rural, coastal regions the percentage of adult men who participate in commercial fisheries is very high. It is estimated that roughly 1-in-3 adult AYK men fish commercially.

Fisheries in the AYK region are primarily executed by a small-boat fleet owned by local residents. The fishing season is brief and average earnings are lower compared to other regions. Unemployment is also higher in the AYK region. As a result, the number of nonresidents participating in the region's seafood industry is very small.

Including multiplier effects, the commercial seafood industry created (mostly) seasonal jobs for 4,740 workers who earned an estimated \$26.7 million in labor income during 2011. On an average monthly basis, the commercial seafood industry created the equivalent of 770 jobs in the AYK region in 2011.

### Total Economic Impact of the Commercial Seafood Industry in AYK Region, 2011

	Direct Impacts	Indirect and Induced Impacts	Total Impacts
<b>Commercial Fishing</b>			
Number of Workers	3,600	470	4,070
Equivalent Monthly Avg. Employment	200	280	480
Labor Income (in \$Millions)	\$9.1	\$9.1	\$18.2
<b>Seafood Processing</b>			
Number of Workers	490	100	590
Average Monthly Employment	150	75	230
Labor Income (in \$Millions)	\$3.8	\$1.9	\$5.7
<b>Government, Salmon Hatcheries, and Tender Operators</b>			
Number of Workers	60	20	80
Average Monthly Employment	40	20	60
Labor Income (in \$Millions)	\$2.3	\$0.6	\$2.9
<b>Total Seafood Sector</b>			
Number of Workers	4,160	590	4,740
Equivalent and Average Monthly Employment	390	370	770
Total Estimated Earnings (in \$Millions)	\$15.2	\$11.5	\$26.7

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

AYK contains three CDQ groups that make a substantial contribution to the region's economy. The CDQ groups benefit from an annual allotment of groundfish, flatfish, and crab caught in BSAI fisheries. Revenue from this allotment allows the groups to invest in regional projects aimed at economic development or social improvement/assistance programs. It is estimated that the CDQ groups in the AYK region create roughly 250 non-fishing/processing jobs (on an average monthly basis), or about a third of all jobs directly or indirectly associated with the seafood industry. In addition to these non-fishing/processing jobs, the groups create jobs for hundreds more jobs for local workers in CDQ-owned processing plants and aboard CDQ-owned fishing vessels.

### **III. Impact of the Alaska Seafood Industry on Washington State Economy**

# Impact of Alaska Seafood in Washington State

The Alaska seafood industry creates a broad range of economic benefits for the state of Washington. Most major processors are headquartered in Puget Sound and Washington residents earn significant income commercial fishing in Alaska. These activities create additional jobs within Washington, as companies and household spend earnings made by catching or processing Alaska seafood.

## Total Impact of Alaska Seafood Industry on Washington



Fishmongers from Pike's Place Fish Market

The Alaska seafood industry created close to 34,000 jobs and \$1.9 billion in labor income for Washington residents in 2011. Based on available data, industry sources and extrapolations, it is likely that over 10,000 Washington residents physically worked in Alaska during 2011 as a commercial fisherman/woman or for a seafood processing company. These workers bring most of those earnings home to Washington where their spending creates additional jobs for other Washington residents. Nearly 4,500 other Washington residents are directly employed by the Alaska seafood industry in Washington state; working for a processing company or a fishery management agency. Spending by these

workers also creates secondary jobs. It is estimated that household spending within Washington State created by Alaska seafood induced 8,300 jobs in 2011.

Seattle is an important hub for the Alaska seafood industry, as the region's shipyards service most of the large and medium sized vessels that fish in Alaska. In addition, most of the supplies needed to catch and process Alaska seafood travel through Puget Sound and most Alaska seafood travels through the area before going on to export and domestic markets. Seattle businesses also provide important financial services, such as banking and insurance, to the industry. All of these activities create indirect employment. In 2011, it is estimated that the Alaska seafood industry generated 8,000 indirect jobs. Almost half of these jobs were created as the result of spending on repair, maintenance, and upgrades of fishing boats and processing operations.



Puget Sound shipyard worker  
(Image Credit: Vigor Industrial)

Finally, Washington residents are avid seafood consumers. Alaska seafood sold by wholesalers, grocers, and restaurants created additional economic activity. It is estimated that Alaska seafood generated 2,640 direct jobs in the wholesale, grocery, and restaurant sectors combined.

### Total Economic Impact of Alaska Seafood Industry on Washington State, 2011

	Jobs Created	Estimated Labor Income
<b>Estimated Direct Effects</b>		<i>(in \$Millions)</i>
Commercial Fishing	7,130	\$471
Seafood Processing	7,660	323
Other Direct Support	180	64
Wholesalers	370	22
Grocers/Restaurants	2,270	183
<b>Total Direct Effects</b>	<b>17,620</b>	<b>\$1,063</b>
<b>Indirect Effects (from business-related spending)</b>		
Repair, Maint., & Upgrades	3,550	\$211
Transportation & Warehousing	1,300	79
Supplies and Materials	1,200	65
Financial Services	1,250	69
Other	700	36
<b>Total Indirect Effects</b>	<b>8,000</b>	<b>\$460</b>
<b>Induced Effects (from direct and indirect household spending)</b>		
<b>Total Induced Effects</b>	<b>8,300</b>	<b>\$379</b>
<b>Total Direct and Secondary Effects</b>	<b>33,920</b>	<b>\$1,902</b>

Notes: Direct effects include Washington residents working in Alaska and Washington state, as a result of Alaska seafood. Indirect effects include all direct, indirect, and induced effects associated with spending for that particular sector. Therefore, not all jobs listed under financial services would be in financial services. Indirect figures represent the number of jobs resulting from spending in that category. Totals may not sum due to rounding.

Source: McDowell Group estimates based on IMPLAN, DOLWD, ADFG, and NMFS data.

Washington residents occupy 28 percent of all U.S. jobs created by Alaska seafood in 2011. Not surprisingly, Washington residents account for more jobs than residents of any other state besides Alaska. Approximately 1 percent of all jobs held by Washington residents are created by the Alaska seafood industry.

## Impact of Alaska's Commercial Fishing Industry on Washington

The Washington State economy benefits directly from Alaska's commercial fisheries in two primary ways:

- First, many Washington residents participate in commercial fisheries in Alaska. Jobs are created through induced effects when these fishermen spend their Alaska earnings back in the Washington economy.

- Second, Puget Sound is the homeport to many large vessels that receive annual maintenance and upgrade work at shipyards in Seattle. Even medium-sized vessels which typically stay in Alaska often come to Puget Sound to receive maintenance work or upgrades. Shipyards in Puget Sound also build new boats for the Alaska fishing fleet. This creates many good-paying jobs in the shipbuilding and repair trades.

Commercial fisheries in Alaska generate significant spending in Washington State, which in turn creates thousands of jobs. It is estimated that commercial fishermen spent \$844 million in Washington in 2011. These expenditures cover a very wide spectrum, including vessel provisioning, fishing gear and equipment, insurance premiums, boat maintenance, as well as personal household expenditures, all of which create employment in a variety of sectors.

Alaska's commercial fisheries created jobs for a total 14,830 Washington residents in 2011 as a result of Washington residents participating in Alaska commercial fisheries and business spending related to the industry. Washington residents earned an estimated \$471 million in labor income by participating in Alaska's commercial fisheries, including indirect and induced effects the industry supported \$872 million in labor income within the Washington economy.

### Total Economic Impact of Alaska Commercial Fisheries on Washington State, 2011

	Total Spending (\$Millions)	Jobs Created (Avg. Monthly)	Estimated Labor Income (\$Millions)
<b>Direct Effects</b>			
Washington Residents Commercial Fishing in Alaska	\$844	7,130	\$471
<b>Indirect Effects (from business-related spending and Gov. Operations related to AK seafood)</b>			
Boat Repair, Building, & Maint.	\$147	1,450	\$92
Gear/Provisions Purchases	68	360	22
Financial Services	254	660	36
Government	82	750	59
Other	53	300	14
<b>Total Indirect Effects</b>	<b>\$604</b>	<b>3,520</b>	<b>\$223</b>
<b>Induced Effects (from direct and indirect household spending)</b>			
<b>Total Induced Effects</b>	<b>\$448</b>	<b>4,180</b>	<b>\$177</b>
<b>Total Direct and Secondary Effects</b>	<b>-</b>	<b>14,830</b>	<b>\$872</b>

Note: Indirect effects include all direct, indirect, and induced effects associated with spending for that particular sector. Therefore, not all jobs listed under financial services would be in financial services. These figures are the jobs resulting from spending in that category.

Source: McDowell Group estimates based on IMPLAN, DOLWD, ADFG, and NMFS data.

### PARTICIPATION AND EARNINGS BY WASHINGTON RESIDENTS IN ALASKA COMMERCIAL FISHERIES

A total of 7,130 Washington residents participated in Alaska's commercial fisheries in 2011. Of that figure, 1,625 Washington residents made landings on a commercial fishing permit (that they owned), while 5,510 Washingtonians bought crew members licenses.

Total gross earnings and labor income earned by Washington residents in Alaska fisheries is estimated at \$1.04 billion and \$471 million, respectively. Not including the factory trawler fleet, Washington residents grossed \$659 million and earned an estimated \$369 million in labor income. The factory trawler fleet, which is mostly owned by corporations based in Seattle, grossed \$388 million in ex-vessel terms in 2011.

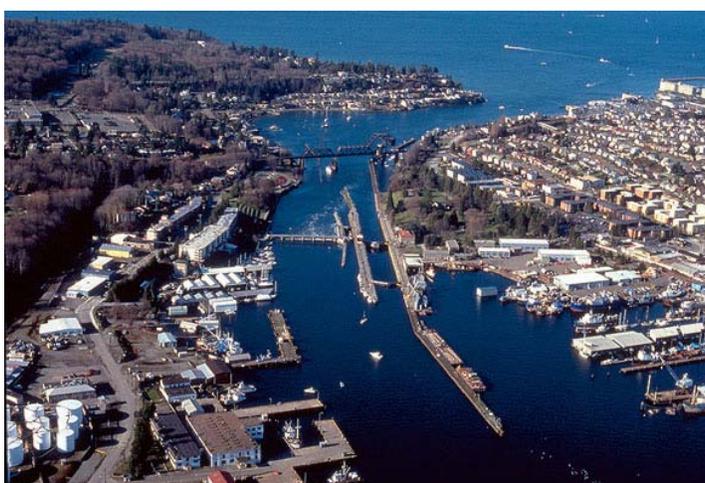
For some context, Alaska fisheries directly employ more Washington residents and generate more direct labor income than Washington's own commercial fishing industry or its commercial logging industries.<sup>7</sup>

## Impact of Alaska Seafood Processing Industry on Washington

The "Alaska Seafood Processing" industry may be somewhat of a misnomer. Most of the large processing companies who buy and sell Alaska seafood are headquartered in the Puget Sound area. Washington's location and larger size make it an attractive place for processors to do business. Marketing, distribution, and repair operations can often be done more efficiently in the lower-48 than in Alaska. Washington benefits from being a base of operations for Alaska seafood processing companies in several ways:

- Management, administrative, sales, and finance staff employed by processors live in Puget Sound and contribute to the local economy,
- The sheer volume of Alaska seafood moving through Washington ports and highways contributes to jobs in transportation and warehousing sector,
- Large factory trawlers often require significant annual repair/maintenance/upgrade work, creating jobs for skilled tradesmen,
- Processors also buy a myriad of supplies and provisions for its Alaska operations from Washington vendors,
- Companies own or lease commercial space in Washington to support operations in Alaska,
- These activities all create indirect and induced jobs and tax revenue for the state of Washington.

Alaska seafood processors created 15,610 direct and secondary jobs worth \$704 million in labor income in 2011. The highest percentage of earnings comes from Washington residents working for seafood processing companies utilizing Alaska seafood, following by support sectors in the trades and transportation/storage industries. It is estimated that roughly 7,600 Washingtonians were directly employed by seafood processors utilizing Alaska seafood, some of these residents work seasonal jobs in Alaska while others are located in Washington.



Aerial view of Ballard, WA, a hub of Alaska seafood activity

<sup>7</sup> Based on IMPLAN and BEA labor data, as well as seafood industry research conducted for this project utilizing data from ADFG, NMFS, and industry sources.

## Total Economic Impact of Alaska Seafood Processing on Washington State, 2011

	Jobs Created	Estimated Labor Income
<b>Estimated Direct Effects</b>		<i>(in \$Millions)</i>
Washington Residents Working in Alaska	3,270	\$53
Washington Residents Working with AK Seafood in WA	4,400	270
Other Direct Support	100	5
<b>Total Direct Effects</b>	<b>7,770</b>	<b>\$327</b>
<b>Indirect Effects (from business-related spending)</b>		
Repair, Maint., & Upgrades	2,100	\$119
Transportation & Warehousing	1,300	73
Supplies and Materials	670	27
Financial Services	530	30
Other	320	16
<b>Total Indirect Effects</b>	<b>4,920</b>	<b>\$265</b>
<b>Induced Effects (from direct and indirect household spending)</b>		
<b>Total Induced Effects</b>	<b>2,950</b>	<b>\$111</b>
<b>Total Direct and Secondary Effects</b>	<b>15,640</b>	<b>\$704</b>

Notes: Indirect effects include all direct, indirect, and induced effects associated with spending for that particular sector. Therefore, not all jobs listed under financial services would be in financial services. Indirect figures represent the number of jobs resulting from spending in that category. Totals may not sum due to rounding.

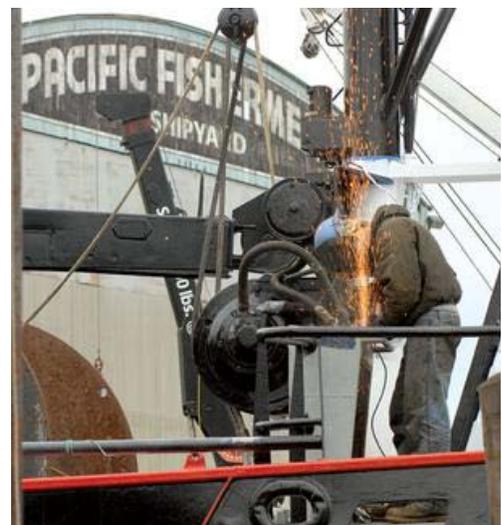
Source: McDowell Group estimates based on IMPLAN, DOLWD, ADFG, and NMFS data.

## Alaska Seafood Support Sector in Washington

Puget Sound plays a crucial role as a gateway port for the Alaska seafood industry. Cities in Puget Sound boast a wide range of port facilities and the region contains many companies which manufacture and/or sell equipment to the Alaska seafood industry.

In total, it is estimated that the Alaska seafood support sector in Washington directly creates approximately 8,400 jobs. Many of these jobs (3,540) are held by skilled trade workers who perform repair, new build, and maintenance services for fishing vessels and processing equipment. Alaska seafood also supports an estimated 1,300 transportation/warehousing jobs and 440 retail jobs in Washington. The industry creates jobs in financial services, manufacturing, harbor operations, and other sectors as well.

The Alaska Fisheries Science Center (AFSC) is headquartered in Sand Point, WA. As a research branch of the National Marine Fisheries Service, the AFSC conducts field and



Shipyard worker from Pacific Fishermen Shipyard  
(Image credit: Puget Sound Business Journal)

laboratory research to help conserve and manage the region's living marine resources in compliance with the Magnuson-Stevens Fishery Conservation and Management Act of 1996, the Marine Mammal Protection Act of 1972, and the Endangered Species Act of 1973. The Sand Point, WA facility supports just over 300 jobs.

Alaska's seafood industry provides income for thousands of businesses in Washington. Listed below are some of the companies which provide goods and services to the Alaska seafood industry:

<i>Anacortes Marine Electronics</i>	<i>LFS Marine Supplies</i>
<i>Ballard Hardware &amp; Supply</i>	<i>Little Hoquiam Shipyard</i>
<i>Ballard Oil</i>	<i>Longview Fibre Company</i>
<i>Beck Pack Systems</i>	<i>Lynden Inc</i>
<i>Beckwith &amp; Kuffel</i>	<i>Marco Global Inc</i>
<i>Carlile Transportation Systems</i>	<i>Marel Seattle Inc</i>
<i>City Ice/Seafreeze</i>	<i>Maritime Fabrications</i>
<i>Delta Marine Industries</i>	<i>McKinney Containers</i>
<i>Dexter-Russell Inc</i>	<i>Morgan Stanley Wealth Mgmt</i>
<i>Fisheries Supply Company</i>	<i>Mustad Longline</i>
<i>Fishermen's News</i>	<i>Naust Marine USA</i>
<i>Foss Shipyard</i>	<i>NC Power Systems</i>
<i>Frontier Packaging</i>	<i>Nichols Bros. Boat Builders</i>
<i>Intrafish</i>	<i>North Pacific Fuel</i>
<i>Fred Wahl Marine Construction</i>	<i>Northwest Farm Credit Services</i>
<i>Furuno USA, Inc.</i>	<i>Pacific Fishing Magazine</i>
<i>Gen-tech Global LLC</i>	<i>Pacific Net and Twine Ltd</i>
<i>Grunden's USA</i>	<i>Pacific Power Products</i>
<i>Harris Electric</i>	<i>Port Townsend Shipwrights Co-op</i>
<i>Helly Hansen</i>	<i>Raymarine Inc</i>
<i>High Seas Technology</i>	<i>Redden Marine Supply</i>
<i>Highland Refrigeration</i>	<i>Ryco</i>
<i>Integrated Marine Systems</i>	<i>Samson Tug &amp; Barge</i>
<i>Jackson Morgan &amp; Hunt PPLC</i>	<i>Seattle Marine &amp; Fishing Supply Co</i>
<i>Jensen Maritime Consultants Inc</i>	<i>Simrad Fisheries</i>
<i>JK Fabrication</i>	<i>Sound Ocean Metal Fabricators Ltd</i>
<i>John Deere Power Systems</i>	<i>TCI Scales</i>
<i>Kami Steel US, Inc.</i>	<i>Teknorthern Inc</i>
<i>Kinematics Marine, Inc.</i>	<i>Vigor Industrial (Shipyard)</i>
<i>Kolstrand by InMac</i>	<i>Wesmar Marine Products</i>

## **IV. Impact of the Alaska Seafood Industry on the U.S. Economy**

# Nationwide Impacts of Alaska Seafood

Alaska accounted for 56 percent of the total commercial fishery production of the U.S. in 2011, in terms of pounds of seafood landed. With an average harvest of over 5 billion pounds per year, the industry has a significant impact on the entire U.S. economy. This chapter explores the impact of the Alaska seafood industry on the U.S. as a whole, and the impact felt within the “lower-48” in particular.

## Economic Impact of Alaska Seafood Industry on the U.S. Economy

### Direct Employment, Labor Income, and Economic Output

Nationwide, the Alaska seafood industry directly creates employment for an estimated 94,000 people. This figure includes American workers who caught, processed, managed, sold, cooked, or served Alaska seafood. The majority of these individuals reside in states other than the Alaska.

Alaska’s seafood industry generates \$6.4 billion in direct economic output. This does not include indirect or induced impacts, rather it represents the value of Alaska seafood sold in the U.S. as well as the value of Alaska seafood exported abroad.

#### Alaska Seafood Industry: Direct U.S. Employment, Earnings, and Production, 2011

	Number of Workers	Avg. Monthly Employment	Labor Income (\$Millions)	Economic Output (\$Millions)
Commercial Fishing	32,000	16,500	\$1,078	\$2,109
Seafood Processing	32,000	16,300	\$695	\$2,462
Other Direct Support Sector	4,900	3,400	\$289	\$653
Wholesale/Distributors	1,000	1,000	\$79	\$180
Grocers	6,200	6,200	\$176	\$347
Restaurants	17,900	17,900	\$464	\$1,310
<b>Total Direct Impacts</b>	<b>94,000</b>	<b>61,200</b>	<b>\$2,782</b>	<b>\$6,408</b>

Note: Economic output is roughly equivalent to net sales for industries other than commercial fishing and the support sector. The support sector does not contribute to total direct economic output, because it is derived from commercial fishing and the seafood processing sector. Totals may not sum due to rounding.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

Direct impacts associated with the seafood industry include fishermen/women, processing employees, tender operators, hatchery employees, and government workers involved in management, enforcement, marketing, or other functions solely related to the seafood industry. Government functions, hatchery operations, and tenders are vital pieces of the seafood industry and are funded primarily through direct payments or taxes on seafood production; as a result they are counted as direct impacts, for the purposes of this study.

Estimating the importance of food-related businesses poses a common problem when performing economic impact analyses: the substitution effect. If there were no wild Alaskan seafood, would people not eat something else creating a similar economic impact associated with those alternative purchases? Yes, if there

were no Alaska seafood Americans would likely switch to eating even imported seafood. However, this type of substitution – switching a domestic product for an imported product - would have a significant negative economic impact. Most employment tied to the Alaska seafood industry, stems from the harvesting, processing, and fishery management sectors. These jobs would not exist without Alaska seafood. Ergo, consumer substitution patterns can have different economic impacts and it is important to consider the impact of alternative products when evaluating the economic importance of an industry.

## **Total Employment, Labor Income, and Economic Output**

Estimates of direct economic effects do not include multiplier effects, i.e., jobs and income created as a result of business and personal spending created by the seafood industry. Including multiplier effects, the Alaska seafood industry is the basis for over 120,000 U.S. jobs and \$6.4 billion in labor income. Total direct and secondary economic output in the U.S. stemming from the Alaska seafood industry is estimated to be \$15.7 billion in 2011.

### **Alaska Seafood Industry: Total U.S. Employment, Earnings, and Production, 2011**

	Number of Workers	Avg. Monthly Employment	Labor Income (\$Millions)	Economic Output (\$Millions)
Commercial Fishing	60,100	36,600	\$2,020	\$5,278
Seafood Processing	53,600	32,500	1,445	4,881
Other Direct Support Sector	8,000	7,700	674	1,513
Wholesale/Distributors	2,600	2,600	261	471
Grocers	9,700	9,700	487	815
Restaurants	31,800	31,800	1,471	3,428
<b>Total Impacts</b>	<b>165,800</b>	<b>120,800</b>	<b>\$6,359</b>	<b>\$15,733</b>

Note: Economic output is roughly equivalent to net sales for industries other than commercial fishing and the support sector. The support sector does not contribute to total direct economic output, because it is derived from commercial fishing and the seafood processing sector.

Source: McDowell Group estimates based on ADFG, NMFS, ADOLWD, and IMPLAN data.

The Alaska seafood industry employed roughly 41,500 Alaska residents in 2011, meaning 124,300 people had jobs derived from the industry in some way even though they do not permanently reside in Alaska. So while Alaska’s seafood industry is located at the very edges of the U.S. maritime border, the industry is a powerful economic driver in the “Lower-48” as workers bring earnings back home or sell goods/services to the industry.

In Alaska, the seafood industry directly accounted for 63,100 workers in 2011. The harvest, processing, distribution and sale of Alaska’s renewable seafood resource indirectly created an additional 78,400 U.S. jobs. Put another way, for every Alaska fisherman, processor, or direct support worker; an additional 1.24 U.S. jobs were created.

## Trade Flow Analysis and Alaska's Role in National Seafood Supply

As research contractor for the Alaska Seafood Marketing Institute, McDowell Group compiles annual data sets regarding the volume and value of all Alaska seafood exports. Government agencies do not specifically track the amount of product going into the U.S. market, but reliable estimates were developed for this project based on total wholesale production of Alaska seafood less exports. Data in this section refers to the wholesale value of product, unless otherwise noted.

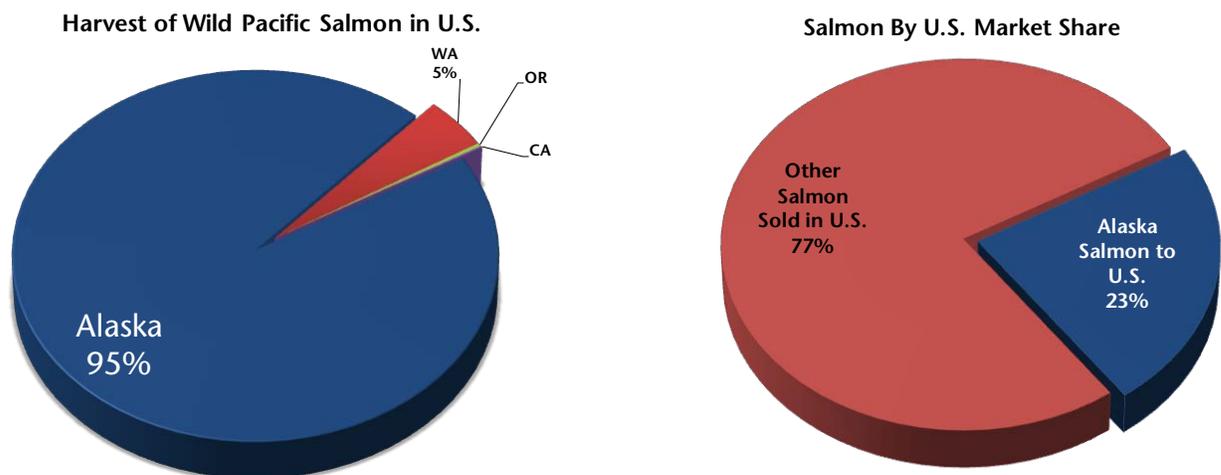
About two-thirds of all Alaska seafood is exported abroad. Seafood caught in Alaska accounts for 58 percent of all U.S. seafood exports (\$3.2 billion in 2011). It is estimated that the U.S. market bought roughly 820 million pounds of Alaska seafood in 2011 worth \$2.0 billion.

The U.S., as a whole, bought roughly \$21.0 billion worth of seafood in 2011. Imports accounted for 79 percent, or \$16.6 billion, of this total while domestically-produced seafood accounted for 21 percent, or \$4.4 billion, of the U.S. seafood supply.

Based on available data – and reasonable extrapolations where data is not available – Alaska seafood accounts for roughly 10 percent of the total U.S. seafood supply. High value species, such as sockeye salmon, crab, and halibut are commonly sold in domestic retail settings. However, the U.S. market also consumes large quantities of Alaska pollock and Pacific cod. Alaska pollock is the basis for most surimi, or imitation crab, eaten in the U.S. and is commonly used in fish sticks or other frozen/battered whitefish fillets.

Despite a possible perception amongst some consumers that “all salmon comes from Alaska”, the U.S. actually receives most of its salmon from foreign farms. Although Alaska produces 95 percent of all salmon caught in the U.S., wild Alaska salmon only represented about 23 percent of the total U.S. salmon supply. The U.S. imported 465 million pounds of farmed salmon in 2011 and took an estimated 170 million pounds of Alaska salmon.

### U.S. Wild Salmon Harvest and Total Salmon Supply, Alaska's Share, 2011



Source: McDowell Group estimates based on ADFG and NMFS data.

When Alaska seafood is sold and consumed within the U.S., jobs are created for distributors, grocers, and restaurants. In addition, when a consumer decides to eat wild Alaska salmon, as opposed to farmed salmon, they are displacing an imported product. The economic effect of buying domestically-produced food is much greater than purchasing imported food. However, exports are also very valuable from an economic development standpoint. Exports bring “new” money into the economy which adds wealth, not just economic activity.

## Participation in Alaska Commercial Fisheries by State

Alaska residents account for 58 percent of the commercial fishing workforce in Alaska. The other 42 percent come from all over the United States, and even other countries in a few cases. In fact, every state in the U.S. has at least 3 residents who participated in Alaska’s commercial fisheries in 2011 as either an active permit holder or a crew member.

**Participation in Alaska Seafood Industry, by State of Residence, 2011**

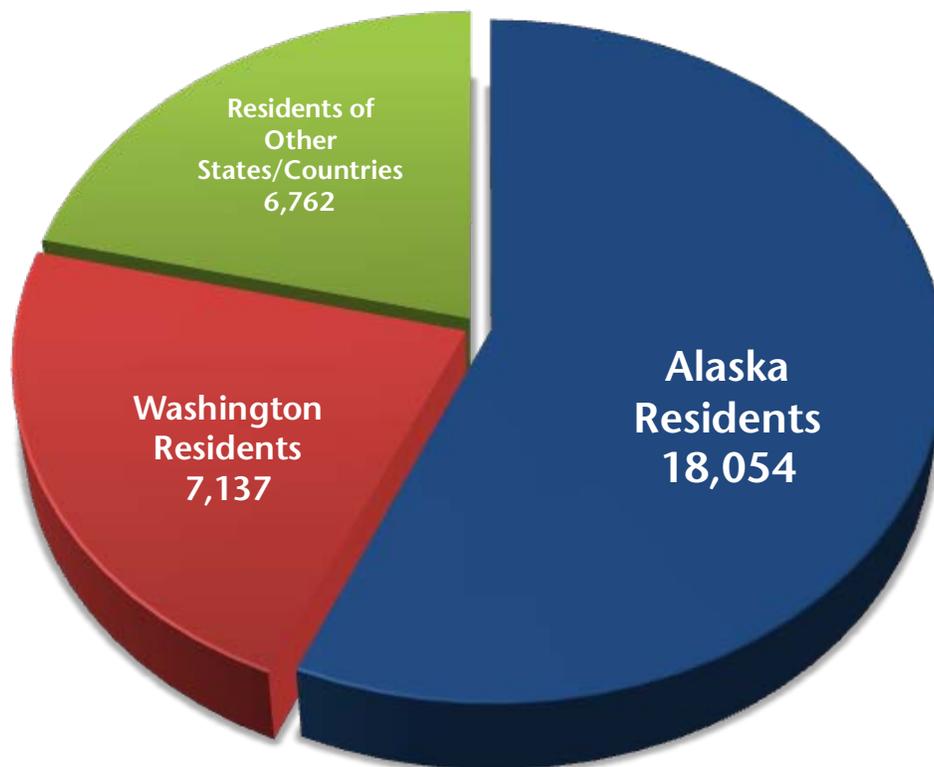
<i>State</i>	<b>Active Permit Holders</b>	<b>Crew Members</b>	<b>Total Participation</b>
Alaska	7,191	10,863	18,054
Alabama	2	14	16
Arkansas	2	25	27
Arizona	37	211	248
California	191	1,079	1,270
Colorado	22	173	195
Connecticut	0	17	17
Delaware	1	3	4
Florida	21	172	193
Georgia	0	53	53
Hawaii	14	108	122
Iowa	4	25	29
Idaho	48	280	328
Illinois	1	51	52
Indiana	4	26	30
Kansas	1	21	22
Kentucky	1	15	16
Louisiana	7	30	37
Massachusetts	8	58	66
Maryland	5	20	25
Maine	6	78	84
Michigan	13	88	101
Minnesota	36	174	210
Missouri	5	30	35
Mississippi	3	16	19
Montana	43	232	275
North Carolina	6	38	44
North Dakota	0	3	3
Nebraska	3	29	32
New Hampshire	4	21	25
New Jersey	1	16	17
New Mexico	9	28	37
Nevada	9	113	122

New York	10	62	72
Ohio	6	52	58
Oklahoma	5	45	50
Oregon	333	1,256	1,589
Pennsylvania	5	41	46
Rhode Island	0	4	4
South Carolina	1	26	27
South Dakota	10	23	33
Tennessee	4	27	31
Texas	19	153	172
Utah	26	153	179
Virginia	2	54	56
Vermont	4	23	27
Washington	1,625	5,455	7,080
West Virginia	0	3	3
Wisconsin	11	90	101
Wyoming	7	39	46
Foreign, D.C., or Unknown	255	171	426

Note: Includes all individuals who bought full crew licenses and nonresidents who bought 7-day crew member licenses.  
Source: CFEC and ADFG Licensing data.

Nearly 80 percent of the men and women commercial fishing in Alaska reside in either Alaska or Washington. Oregon and California contain over 1,000 residents who fished commercially in Alaska during 2011, while Idaho, Montana, and Minnesota all contain at least 200 residents who did so as well.

### Alaska Commercial Fishing Employment, By State of Residence, 2011



Source: CFEC and ADFG Licensing data.

## **V. Summary of the Alaska Seafood Industry**

# Commercial Fishing in Alaska

Alaska has the most prolific commercial fishing industry in the United States. Cold, fertile ocean waters surrounding Alaska produce more commercial seafood landings than all other U.S. states combined. This section provides a profile of the large and diverse Alaska commercial fishing industry.

## Employment

Alaska's commercial fishing fleet included 32,000 fishermen on roughly 8,600 fishing boats in 2011. Of these 8,600 vessels, approximately 5,000 vessels are 26 feet or longer, while a fleet of 3,600 skiffs and smaller boats are used to prosecute setnet and hand troll fisheries. Occasionally, smaller vessels are also used in other fisheries. Many vessels participate in multiple fisheries using slightly different gear and fishing techniques, depending on the target species. For instance, some purse seiners in western Alaska also fish for cod and crab using pot gear. Gillnetters who also own quota in the halibut or black cod fisheries may use their 32' boat to catch those species with longline gear.

### Alaska Commercial Fishing Fleet, by Primary Gear Type and Size, 2011

	Number of Vessels
<b>Salmon Fleet</b>	
Purse Seiners (typically 32' - 58')	781
Gillnetters (28' - 42')	3,085
Hand Troll and Setnet Fishermen (skiffs and boats under 32')	3,360
Power Trollers (32' - 48')	768
<b>Groundfish and Flatfish Fleet</b>	
Catcher-Processor Trawlers (AFA Pollock Fleet, 270' - 370')	15
Catcher-Processor Trawlers (Amendment 80 Fleet, 120' - 220')	22
Catcher-Processor Longliners (Pacific Cod, 90' - 180')	38
Catcher-Vessel Trawlers (AFA Pollock, 90' - 180')	95
Catcher-Vessel Trawlers (Non-AFA, 58' - 120')	53
Catcher-Vessel Longliners/Jig (58' - 135')	304
Pot Cod Vessels (58' - 135')	143
<b>Crab Fleet</b>	
BSAI Crab Fleet (90' - 135')	77
Other Crab and Shellfish Fleet (Most under 60')	700
<b>Halibut and Black Cod Fleet</b>	
IFQ Longline Fleet (Most 32' - 58')	1,474

Note: Most boats in the IFQ longline fleet fish in other fisheries. Part of the BSAI Crab fleet also participates in the Pot Cod fishery as well. A small number of purse seiners in western Alaska also participate in groundfish fisheries.

Source: McDowell Group estimates based on NPFMC Economic SAFE 2011, ADFG, and CFEC vessel and fishery participation data.

Salmon, Alaska pollock, Pacific cod, and BSAI crab fisheries make up three-quarters of Alaska’s ex-vessel value, and most of the remaining harvest value is also landed by salmon boats. The ability to participate in multiple fisheries with the same vessel allows fishermen diversifying their income stream and creates economies of scale (as fixed costs are spread out over more pounds). This makes Alaska’s fisheries more profitable and Alaska seafood products more affordable than would otherwise be the case, and helps offset some of the higher costs that come with operating in Alaska.

### Alaska Commercial Fishing Fleet by Vessel Length and Residency of Vessel Owner, 2011

	Total	Alaska	Washington	Other	Unknown
Over 275'	16	1	15	0	0
180' - 274	41	0	41	0	0
120' - 179	137	23	103	11	0
80' - 119'	284	91	140	50	3
60' - '79	202	102	71	22	7
51' - 59'	635	428	176	28	3
41' - 50'	1,002	817	123	61	1
26' - 40'	4,531	3,216	828	475	12
>25'	3,300	2,827	351	112	10

Note: Not all vessels in the CFEC vessel list actively fish, therefore the total count of vessels listed on this table will not match the total number of active vessels.

Source: McDowell Group estimates based on CFEC vessel database.

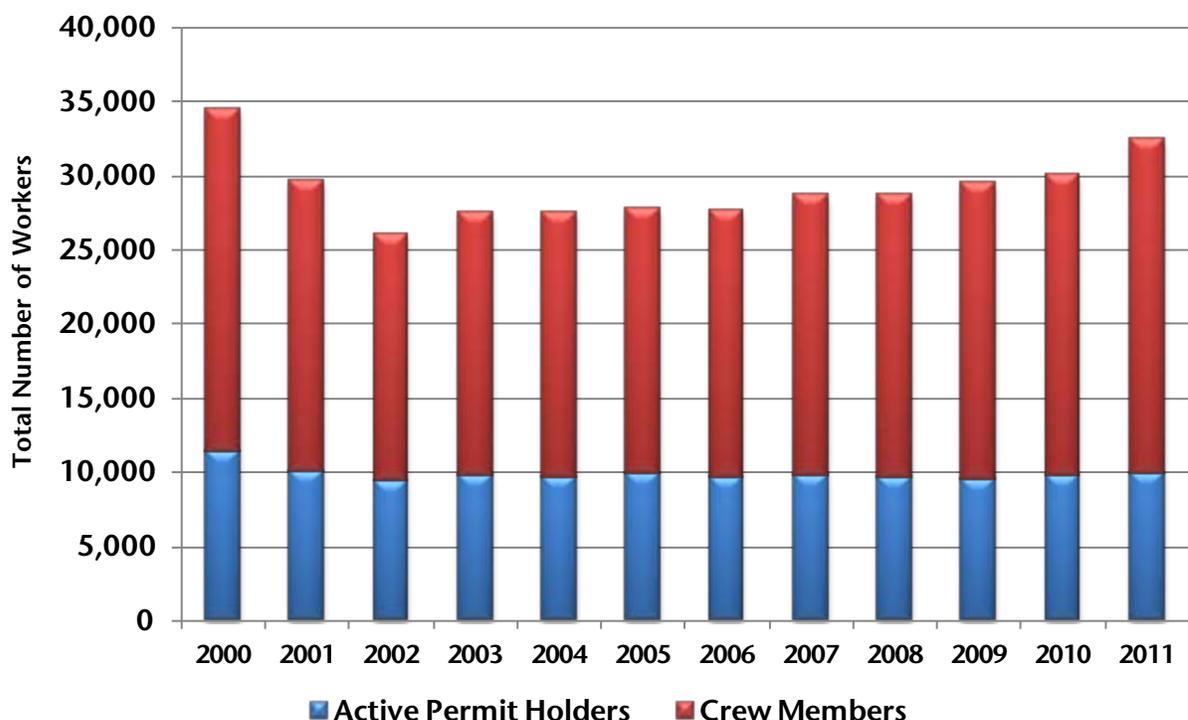
Most large vessels are owned by nonresident individuals or corporations; however, it is common for CDQ groups to own minority shares in larger vessels. Some CDQ groups also own several large vessels outright and manage them internally. Vessels under 60 feet are predominantly owned by Alaska residents and used to fish salmon, herring, non-BSAI crab, halibut, black cod, other shellfish, and mollusks.

Over 10,000 fishermen made a commercial landing in 2011. These 10,000 active permit holders employed 21,900 crew members. Some crew members may work a few weeks while others may work up to 10 months out of the year. Commercial fishing employment is slowly trending up in recent years, primarily due to more participation in salmon fisheries. Since 2002 the industry has added about 6,400 jobs. Most of these additional jobs are crew positions as permit holders have tended to invest in more fisheries (which creates a need for more seasonal crew jobs).



Hauling in a crab pot in the Bering Sea.

## Alaska Commercial Fishing Employment, 2000 - 2011



Source: McDowell Group estimates based on ADF&G licensing data.

The increase in employment is even more significant given contemporary changes in fisheries management structures. Several major fisheries have switched from derby-style fisheries to a catch share or quota-based system, and some vessels in some large groundfish fisheries have been allowed to form coops. These changes have removed less efficient vessels from the halibut, black cod, BSAI crab, and BSAI trawl fisheries. Although fewer fishing boats results in fewer jobs in these fisheries, the jobs that do remain tend to be higher-paying and keep workers employed for longer periods of time.

### EMPLOYMENT BY SPECIES

Over half of Alaska's commercial fishermen work on salmon fishing boats. The management structure of commercial salmon fishing in Alaska intentionally discourages efficiency in some ways and promotes additional participation. Boats and gear are limited to prevent one harvester from catching or carrying too much fish. Limits are also placed on fishery access. Individuals are allowed to own only one salmon "net" permit and permits cannot be owned by corporations. After Alaska gained statehood in 1959, this "limited entry" system was created as an alternative to the overly efficient and less inclusive use of fish traps. Prior to 1959, corporations could own and operate fish trap sites. A group of two dozen men could harvest all the fish a cannery could process, while having no equity in the operation themselves. These operations were mostly owned by nonresidents and the destructive harvest practices of some operators led to a decline in salmon abundance in some parts of the state.

## Estimated Commercial Fishing Employment by Species, 2011

	Estimated Commercial Fishing Workforce	Average Monthly Employment	Workforce Pct. of Total
Salmon	20,300	6,800	62%
Groundfish and Flatfish	3,900	3,900	12
Halibut and Black Cod	4,800	3,600	15
Crab	1,900	1,900	6
All Other	1,900	350	6

Source: McDowell Group estimates based on CFEC fishery participation data, authors' labor income estimate, and ADFG licensing data.

The “groundfish and flatfish” species category includes fisheries targeting Alaska pollock, Pacific cod, sole, Pacific Ocean perch, and Atka Mackerel. These fisheries involve large ships, often over 120’ in length, and account for nearly 80 percent of Alaska’s harvest volume but only about 10 percent of the commercial fishing workforce is employed in these fisheries. However, groundfish and flatfish seasons typically last much longer than fisheries targeting other species categories.

Halibut and Black cod fisheries employ roughly 4,800 permit holders and crew members. These boats are often gillnetters, purse seiners or trollers that catch halibut and black cod before and after salmon season with crews of three to five. Crab fisheries employ 1,900 workers, but only about a quarter of those come from the BSAI crab fisheries. BSAI crab fisheries account for the vast majority of Alaska’s total crab harvest but other smaller crab fisheries employ a significant number of fishermen. Herring fisheries, shrimp fisheries, and dive fisheries (targeting geoduck clams and sea cucumbers) employ roughly 1,900 fishermen. These fisheries are often executed in the spring or fall and last several days to several weeks.

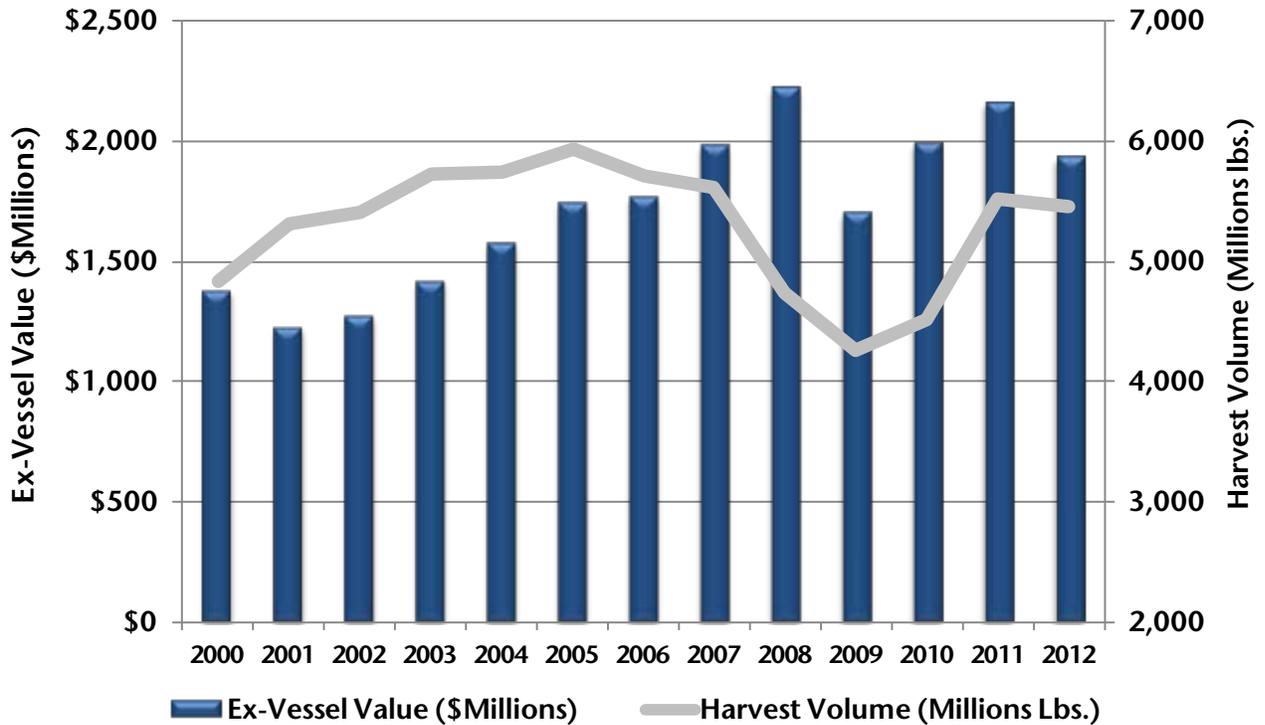
### Harvest Volume and Value

In 2011, commercial fishermen landed over 5.5 billion pounds of Alaska seafood worth an ex-vessel value of \$2.1 billion. The 2011 harvest is the most valuable single-season harvest on record, in nominal terms, and the most valuable harvest since the mid-1990s after adjusting for inflation. The ex-vessel value of Alaska seafood increased in 2007 and 2008 despite a decline in harvest volume. Total value and harvest volume has risen significantly since 2009. In 2011, the ex-vessel value of Alaska seafood was 49 percent higher than 2005 despite a smaller harvest.



Power troller landing a salmon in Southeast Alaska.

## Alaska Commercial Harvest Volume and Ex-Vessel Value, 2000 - 2011



Note: 2012 data is preliminary.

Source: McDowell Group estimates based on NPFMC Economic SAFE report and ADF&G COAR report.

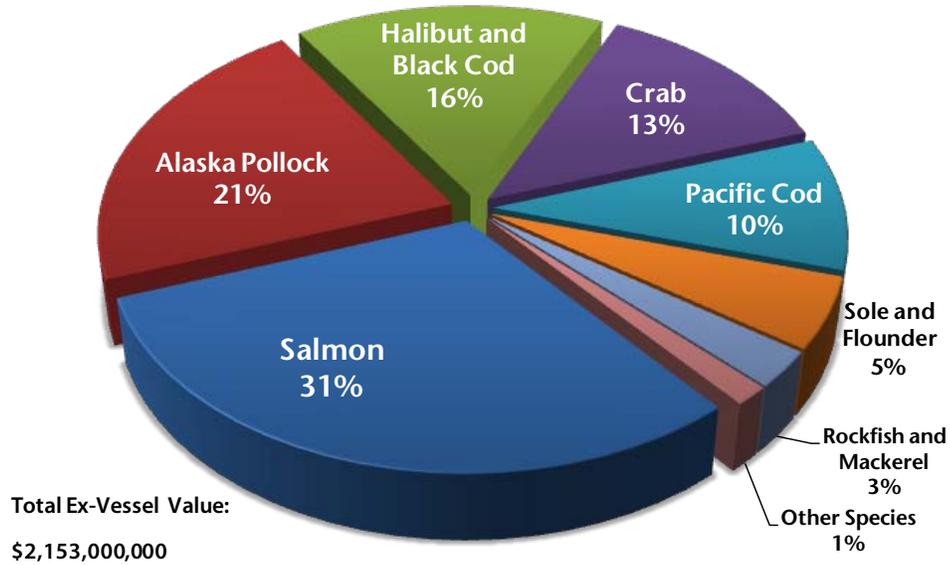
Salmon is the most valuable commercial species, in ex-vessel terms, worth \$657 million or 31 percent of the total Alaska ex-vessel value in 2011. Alaska pollock is by far the largest fishery by harvest volume, and the second most valuable in ex-vessel terms worth \$459 million in 2011. Halibut and black cod are very different



Commercial halibut fishermen in Kodiak, Alaska (Image credit: Wesley Loy)

looking species but they are often lumped together because they are both IFQ fisheries and harvested primarily the by the same fleet of 1,080 boats. Together, these two species make up the third most valuable species category. Crab species are the third most valuable category, followed by Pacific Cod and the offshore flatfish complex. Other species make up less than 5 percent of the total ex-vessel value.

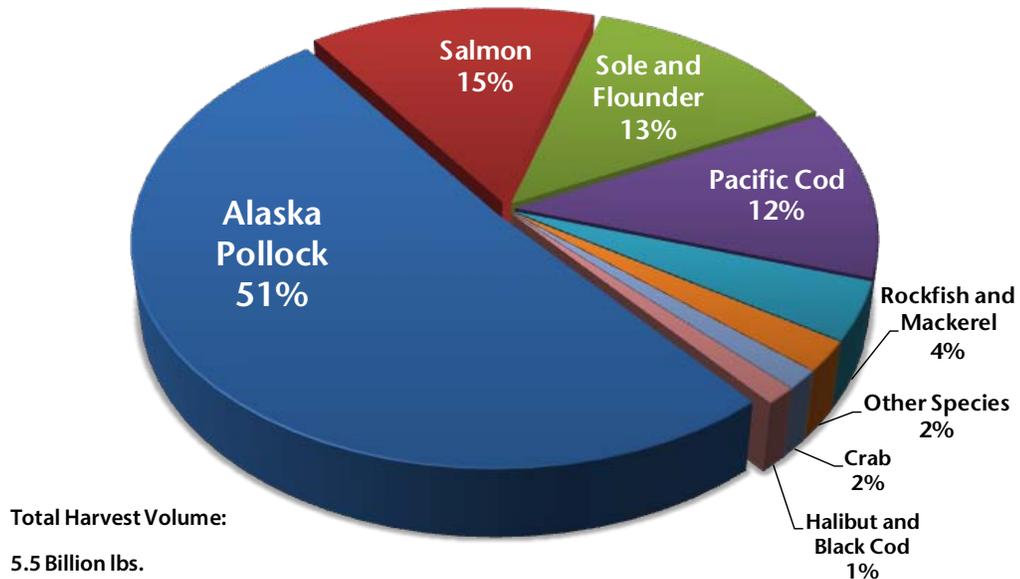
### Ex-Vessel Value by Species Category, 2011



Source: McDowell Group estimates based on NPFMC Economic SAFE report, NMFS Commercial Fisheries Statistics, and ADFG COAR report.

The Alaska pollock fishery accounts for just over half of Alaska’s commercial harvest tonnage. Alaska’s pollock fishery is one of the largest fisheries in the world and accounts for 29 percent of all U.S. harvest volume. Other federally-managed groundfish and flatfish fisheries (Pacific Cod, flatfishes, rockfish, and Atka mackerel) account for 29 percent of Alaska’s harvest volume. Crab, halibut, and black cod account for only 3 percent of Alaska’s harvest volume but are high-end species that account for over a quarter of Alaska’s total ex-vessel value.

### Harvest Volume by Species Category, 2011



Source: McDowell Group estimates based on NPFMC Economic SAFE report, NMFS Commercial Fisheries Statistics, and ADFG COAR report.

# Seafood Processing in Alaska

Seafood processing plants are the heart of many coastal Alaskan towns. They provide employment, a market for local fishermen, taxes to city government, and help bring down shipping rates for consumer goods imported into the area. This section examines seafood processing activities in Alaska, with an emphasis on employment statistics, estimates of in-state spending, and workforce residency.

## Employment and Production

Over five billion pounds of Alaska seafood was processed by 162 companies in 2011, employing 25,112 workers. Seafood processing is Alaska's largest manufacturing subsector, accounting for roughly 75 percent of all manufacturing employment in Alaska. Even though most processing plants are located outside of Alaska's major population centers, seafood processing companies employ roughly 1-in-15 private sector workers in Alaska. Seafood processors employed over 10,000 workers, on average, per month in 2011. However, most seafood processing workers' jobs are seasonal. Employment averages 6,800 during the late fall and winter months, before peaking at more than 20,000 during the height of the summer salmon season.

### Seafood Processing Employment and Production in Alaska, 2008 - 2012

	2008	2009	2010	2011	2012
Number of Workers (DOLWD)	23,057	23,563	23,432	25,112	N/A
Average Monthly Employment	9,027	9,147	9,162	10,130	10,198
Payroll (in \$Millions)	\$295.5	\$288.5	\$313.6	\$349.6	\$364.4
Gross Processing Revenue (in \$Millions)	\$2,010	\$2,090	\$2,090	\$2,463	\$2,547
Total Production (in Millions of Pounds)	2,025	2,153	2,271	2,601	2,782
Total Production (in \$Millions)	\$3,912	\$3,567	\$3,871	\$4,571	\$4,470

Note: 2012 data is preliminary. Due to methodological differences, 2011 employment and data does not match other estimates in this report.

Source: ADFG, DOLWD, and McDowell Group estimates.

In recent years, processing employment has increased along with the total value of Alaska seafood. Larger harvests of Alaska Pollock, Pacific Cod, and Alaska sole, as well as more fillet production and better prices for Alaska seafood products resulted in rising employment from 2008 to 2011. Employment estimates for 2012 are preliminary, but suggest a decline in processing activity. This is likely due to smaller harvests of salmon and halibut.

There are nearly 80 shore-based processing plants in Alaska, in addition to 77 catcher-processors and more than a dozen floating processors. These processing operations are vital to Alaska's commercial fisheries and employ workers from Nome to Adak to Metlakatla.

## Alaska Seafood Processing Employment by Region, 2011

Region	Number of Workers	Estimated Avg. Monthly Employment	Payroll (in \$Millions)	Pct. of Total Wages
Southeast Alaska	5,800	1,600	\$67	16%
Southcentral Alaska	4,500	1,200	46	11%
Kodiak Region	3,100	1,799	51	12%
Bering Sea/Aleutian Islands	9,800	6,400	198	48%
Bristol Bay Region	5,500	950	44	11%
Arctic-Yukon-Kuskokwim	500	150	4	1%

Note: Regional definitions can be found on page 11.  
Source: DOLWD and McDowell Group estimates.

The BSAI region employs the most seafood processing workers, and accounts for nearly half the total wages earned by processing workers. Most of the region’s workers are employed in shore-based processing plants, although a couple thousands also work onboard catcher-processors and floating processors. These workers process large volumes of Alaska pollock, Pacific Cod, crab, Alaska sole, Pacific Ocean Perch, and other whitefish species. Elsewhere, processing plants are more dependent upon salmon, halibut, and black cod.

### **Resident Involvement in Seafood Processing**

As an economic sector, seafood processing typically employs a higher percentage of nonresident workers than any other Alaska industry. Importing workers to staff these plants and processing ships obviously detracts from the economic potential of the industry within Alaska, as nonresident workers take the majority of their earnings with them when their seasonal employment tenure ends. However, these nonresident workers fill an essential labor force role than Alaskans cannot fill.

The industry and the State of Alaska have taken many steps throughout the years to encourage more Alaska residents to apply for processing jobs. Processing companies frequently recruit at in-state job fairs and have provided input for university and technical training programs. The Alaska Department of Labor and Workforce Development operates “job centers” across the state and has several staff dedicated to matching Alaska residents with jobs in the seafood processing industry.

However, the realities of the situation make it difficult to attract local workers during busy fishing seasons. The vast majority of Alaska seafood is harvested in waters that lie outside of Alaska’s major population centers. Over five billion pounds of seafood must be harvested, processed, and shipped from regions that have less than 60,000 total adult residents between the ages of 15 and 64. The industry directly employs 60,000 workers. Some plants, such as those at Excursion Inlet, Akutan, and Larsen Bay, are so remote that there is little else in the area aside from the plant itself.

Despite the fact that Alaska residents make up less than 30 percent of the seafood processing workforce, the industry still employs 6,800 Alaska residents and residents account for nearly 40 percent of total payroll. Alaska residents are more likely to hold higher paying positions in seafood processing plants performing management, maintenance, or quality control functions. These jobs are often year-round positions that are best filled by local residents. Conversely, the thousands of laborers who fill seasonal production positions

would be hard pressed to find offseason work in towns like Naknek or Cordova to supplement their processing income.

### Alaska Seafood Processing Employment by Region, 2011

Region	Total Number of Workers	Resident Workers	Total Payroll (in \$Millions)	Resident Payroll (in \$Millions)
Southeast Alaska	5,800	900	\$67	\$22
Southcentral Alaska	4,500	1,000	46	18
Kodiak Region	3,100	1,450	51	33
Bering Sea/Aleutian Islands	9,800	1,450	198	50
Bristol Bay Region	5,500	300	44	3
Arctic-Yukon-Kuskokwim	500	450	4	3
<b>Total</b>	<b>27,100</b>	<b>5,500</b>	<b>\$410</b>	<b>\$128</b>

Note: Some workers are employed in more than one region during a given year, so regional totals will not sum to match total employment or wages. Regional definitions can be found on page 11.

Source: DOLWD and McDowell Group estimates.

Alaska residents make up the majority of the seafood processing workforce in Kodiak and the AYK region whereas nonresidents account for well over half of the total workforce in other regions. Kodiak presents an interesting example regarding the factors which improve the ability of seafood processors to hire local workers. Kodiak features the most diverse mix of commercial fisheries of any port in the state allowing plants in Kodiak to operate nearly year-round. Though remote by national standards, the city of Kodiak has 6,400 residents, making it large enough to supply a local workforce for the city's processing plants while still having some left over to occupy jobs that every community needs. However, the region also includes remote plants (such as Larsen Bay) where resident hire is much less practical.

Workforce residency statistics are produced by DOLWD staff, who match employment records to Permanent Fund Dividend (PFD) applications. If an individual qualifies for a PFD, he or she is considered an "Alaska resident". More information about workforce residency can be found in the department's annual "Nonresidents Working in Alaska" report and additional seafood-specific analysis can be found on their website (<http://labor.alaska.gov/research/index.htm>).

### Seafood Processing Companies in Alaska

The Alaska seafood processing industry includes over 160 companies, though the majority of these companies are relatively small ventures employing less than 100 workers. Based on DOLWD data and employment information volunteered by processing companies, the industry includes at least 35 companies employing 100 or more workers on an annual basis. The three largest seafood processing companies are Trident Seafoods, Icicle Seafoods, and Ocean Beauty Seafoods. A list of Alaska's largest seafood processors is shown on the following page.

## Alaska Seafood Processing Employment by Region, 2011

Company Name	Total Number of Workers	Location(s)
Icicle Seafoods	2,000 and up	Multiple
Ocean Beauty Seafoods	2,000 and up	Multiple
Trident Seafoods	2,000 and up	Multiple
Peter Pan Seafoods	1,000 to 1,999	Multiple
Unisea Inc.	1,000 to 1,999	Dutch Harbor
Westward Seafoods	1,000 to 1,999	Dutch Harbor and Kodiak
Alaska General Seafoods	500 to 999	Ketchikan and Bristol Bay
American Seafoods	500 to 999	At-Sea
Coastal Villages Seafoods	500 to 999	Multiple
International Seafood of Alaska (ISA)	500 to 999	Kodiak
Leader Creek Fisheries	500 to 999	Naknek
North Pacific Seafoods	500 to 999	Multiple
Silver Bay Seafoods	500 to 999	Sitka and Valdez
Alaska Fresh Seafoods	250 to 499	Kodiak
Alyeska Seafoods	250 to 499	Dutch Harbor
Copper River Seafoods	250 to 499	Cordova and Anchorage
EC Phillips & Son	250 to 499	Ketchikan
Glacier Fish Company	250 to 499	At-Sea
Global Seafoods	250 to 499	Kodiak
Great Pacific Seafoods	250 to 499	Anchorage and Whittier
Inlet Fish Producers	250 to 499	Kenai
Kwikpak Fisheries	250 to 499	Yukon River
US Seafoods	250 to 499	At-Sea
Adak Fisheries	100 to 249	Adak
Alaska Glacier Seafoods	100 to 249	Juneau
Baywatch Seafoods	100 to 249	Naknek
Coffee Point Seafoods	100 to 249	Bristol Bay
Ekuk Fisheries	100 to 249	Bristol Bay
Bering Fisheries	100 to 249	Dutch Harbor
Island Seafoods	100 to 249	Kodiak
Deep Sea Fisheries	100 to 249	Egegik
Seafood Producers Cooperative	100 to 249	Sitka
Signature Seafoods	100 to 249	At-Sea
Snug Harbor Seafoods	100 to 249	Kenai
Taku Smokeries	100 to 249	Juneau

Note: This list is sorted by the range of workers employed; however, companies within each employment range have been sorted alphabetically.

Source: DOLWD and volunteered employment information from processing companies.

The ownership structure of Alaska seafood processing companies varies widely. Some companies operate as their own independent business unit while others are either subsidiaries of larger companies or partially owned by a group of other companies. Each successful business must leverage its own competitive advantage (a function of its people and its assets) while minimizing risk and seeking the greatest access to customers.

Some processing companies have expanded by partnering with large food manufacturers looking to access Alaska fisheries. For example, Japan's NISSUI<sup>8</sup> maintains access to Alaska seafood through their Unisea subsidiary and their investment in the Glacier Fish Company. This relationship also benefits Alaska fishermen by providing greater access to export markets, a critical element considering that 60 to 70 percent of Alaska's seafood is exported. In other cases, companies have expanded by purchasing companies further down the supply chain as Trident Seafoods did in buying ConAgra's Louis Kemp surimi business in 2006.

Many processing companies are still owned by their founders, often groups of fishermen-turned-processors. Companies that prosper often look to grow their business outside of their core region by either buying out or buying into plants - Silver Bay Seafoods and Copper River Seafoods are recent examples.

Then there are the non-profit Community Development Quota (CDQ) groups. These groups often invest in plants, vessels, operate separate for-profit subsidiaries, or take general equity positions in other for-profit companies. Although the investment approach taken by each CDQ group is slightly different, they all maintain a diverse portfolio of seafood assets. Some take a more passive approach, such as Bristol Bay Economic Development Corporation which owns half of Ocean Beauty Seafoods. Other groups maintain a blend of passive and active investments. All six CDQ groups facilitate or operate processing operations within their region and administer grant and scholarship programs funded by seafood assets.

Diversifying ownership interests across multiple species in multiple regions allows companies to minimize the several sources of risk and capitalize on economies of scale. For example, if a plant relies too heavily on a single species from a single plant, they could be put out of business by an equipment failure, a poor harvest, a market reversal (where the wholesale price drops after they have already paid fishermen), or other issues which could randomly affect even well-run businesses.

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<sup>8</sup> NISSUI, more formerly known as Nippon Suisan Kaisha Ltd., sold 538 billion yen in fiscal year 2011 (roughly \$6 billion).

## **VI. Appendices**

# Appendix 1: Alaska Commercial Fishing Fleet

	2005	2006	2007	2008	2009	2010	2011	2012
<b>Salmon (Permits Fished)</b>								
Seine	640	586	617	615	689	705	772	763
Gillnet	2,908	2,848	2,899	2,924	2,906	2,955	3,085	3,108
Troll	1,068	1,108	1,115	1,120	1,109	1,068	1,132	1,095
Setnet	2,874	2,841	2,854	2,795	2,660	2,900	2,978	2,889
<b>Total</b>	<b>7,490</b>	<b>7,383</b>	<b>7,485</b>	<b>7,454</b>	<b>7,364</b>	<b>7,628</b>	<b>7,967</b>	<b>7,855</b>
<b>IFQ Halibut and Black Cod</b>								
Halibut (Permits)	2,326	2,342	2,377	2,274	2,148	2,106	2,075	2,019
Halibut (Vessels)	1,276	1,255	1,211	1,157	1,090	1,074	1,051	N/A
Black Cod (Fishermen)	693	697	693	681	687	683	681	686
Black Cod (Vessels)	378	372	373	359	363	368	362	N/A
<b>Total Vessels</b>	<b>4,673</b>	<b>4,666</b>	<b>4,654</b>	<b>4,471</b>	<b>4,288</b>	<b>4,231</b>	<b>4,169</b>	<b>2,705</b>
<b>Federal Groundfish/Flatfish Vessels</b>								
CV Longline/Jig	278	195	192	260	232	230	307	N/A
CV Pot	190	188	179	174	151	137	173	N/A
CV Trawl all	151	153	149	150	148	141	140	N/A
CP Longline	41	41	38	41	39	40	36	N/A
CP Trawl	40	40	40	41	37	36	37	N/A
<b>Total</b>	<b>700</b>	<b>617</b>	<b>598</b>	<b>666</b>	<b>607</b>	<b>584</b>	<b>693</b>	
<b>Shellfish</b>								
BSAI Crab (Vessels)	101	91	87	88	78	78	78	N/A
Other Crab Fisheries	414	382	338	338	344	446	479	498
Dive and Other Fisheries	411	256	259	256	255	437	404	413
<b>Total</b>	<b>926</b>	<b>729</b>	<b>684</b>	<b>682</b>	<b>677</b>	<b>765</b>	<b>780</b>	<b>778</b>
<b>Herring (Active Permit Holders)</b>								
Seine	126	104	92	92	110	113	85	89
Gillnet	293	181	92	118	128	144	95	41
Other	70	86	90	140	153	121	90	84
<b>Total</b>	<b>489</b>	<b>371</b>	<b>274</b>	<b>350</b>	<b>391</b>	<b>378</b>	<b>270</b>	<b>214</b>
<b>Total Permits Fished</b>	<b>13,494</b>	<b>12,868</b>	<b>12,834</b>	<b>12,921</b>	<b>12,651</b>	<b>13,036</b>	<b>13,332</b>	<b>13,243</b>
<b>Total Fishermen Fishing Permits</b>	<b>9,900</b>	<b>9,715</b>	<b>9,775</b>	<b>9,715</b>	<b>9,557</b>	<b>9,767</b>	<b>10,022</b>	<b>9,952</b>
<b>Total Vessels Fishing</b>	<b>6,599</b>	<b>6,332</b>	<b>6,282</b>	<b>6,198</b>	<b>6,218</b>	<b>5,933</b>	<b>6,209</b>	<b>6,113</b>

Note: Total Vessels Fishing total does not include skiffs used in setnet operations.  
Source: ADFG, CFEC, and NMFS.

## Appendix 2: Alaska Salmon Fishing Fleet

	2005	2006	2007	2008	2009	2010	2011	2012
<b>Seine Permits Fished</b>								
Southeast	232	230	237	212	256	235	269	233
Prince William Sound	101	111	120	141	154	174	183	224
Cook Inlet	29	24	19	25	13	14	23	16
Kodiak	135	130	140	128	157	154	174	166
Chignik	97	48	55	54	55	65	64	69
AK Peninsula	46	43	46	55	54	63	59	55
<b>Seine Total</b>	<b>640</b>	<b>586</b>	<b>617</b>	<b>615</b>	<b>689</b>	<b>705</b>	<b>772</b>	<b>763</b>
<b>Gillnet Permits Fished</b>								
Southeast	368	358	387	392	406	422	442	444
Prince William Sound	502	492	502	507	511	519	513	522
Cook Inlet	471	396	417	426	404	378	462	496
AK Peninsula	120	127	125	130	141	142	144	133
Bristol Bay	1,447	1,475	1,468	1,469	1,444	1,494	1,524	1,513
<b>Gillnet Total</b>	<b>2,908</b>	<b>2,848</b>	<b>2,899</b>	<b>2,924</b>	<b>2,906</b>	<b>2,955</b>	<b>3,085</b>	<b>3,108</b>
<b>Setnet Permits Fished</b>								
Yakutat	114	104	120	128	122	127	121	113
Prince William Sound	26	26	25	25	27	28	29	29
Cook Inlet	499	482	483	484	472	488	543	456
Kodiak	165	153	157	148	132	158	157	164
AK Peninsula	92	94	88	83	88	84	93	87
Bristol Bay	829	844	835	850	843	861	878	883
Norton Sound	40	60	74	93	88	115	123	123
Kotzebue	41	42	46	48	62	66	89	83
Upper Yukon	6	10	6	2	2	0	0	0
Lower Yukon	579	574	565	473	391	444	436	475
Kuskokim	483	452	455	461	433	529	509	476
<b>Setnet Total</b>	<b>2,874</b>	<b>2,841</b>	<b>2,854</b>	<b>2,795</b>	<b>2,660</b>	<b>2,900</b>	<b>2,978</b>	<b>2,889</b>
<b>Troll Permits Fished</b>								
Southeast Power Troll	715	737	740	745	745	729	760	743
Southeast Hand Troll	353	371	375	375	364	339	372	352
<b>Troll Total</b>	<b>1,068</b>	<b>1,108</b>	<b>1,115</b>	<b>1,120</b>	<b>1,109</b>	<b>1,068</b>	<b>1,132</b>	<b>1,095</b>
<b>Total Permits Fished</b>	<b>13,494</b>	<b>12,868</b>	<b>12,834</b>	<b>12,921</b>	<b>12,651</b>	<b>13,036</b>	<b>13,332</b>	<b>13,243</b>
<b>Total Fishermen Fishing Permits</b>	<b>9,900</b>	<b>9,715</b>	<b>9,775</b>	<b>9,715</b>	<b>9,557</b>	<b>9,767</b>	<b>10,022</b>	<b>9,952</b>

Source: CFEC.

## Appendix 3: Commercial Fishing Employment

	2005	2006	2007	2008	2009	2010	2011	2012
<b>Alaska Resident - Number of Workers (Active Permit Holders (PH) and Crew Members)</b>								
Southeast Active PH	2,145	2,162	2,176	2,140	2,128	2,118	2,111	2,129
Southeast Crew	2,362	2,435	2,589	2,513	2,489	2,540	2,575	2,612
<b>Southeast Total</b>	<b>4,507</b>	<b>4,597</b>	<b>4,765</b>	<b>4,653</b>	<b>4,617</b>	<b>4,658</b>	<b>4,686</b>	<b>4,741</b>
SC Active PH	2,103	2,071	2,065	2,101	2,042	2,088	2,187	2,146
Southcentral Crew	3,148	3,054	3,309	3,382	3,276	3,385	3,860	3,858
<b>Southcentral Total</b>	<b>5,251</b>	<b>5,125</b>	<b>5,374</b>	<b>5,483</b>	<b>5,318</b>	<b>5,473</b>	<b>6,047</b>	<b>6,004</b>
Kodiak Active PH	529	545	531	537	497	499	499	484
Kodiak Crew	980	985	936	910	913	902	973	948
<b>Kodiak Total</b>	<b>1,509</b>	<b>1,530</b>	<b>1,467</b>	<b>1,447</b>	<b>1,410</b>	<b>1,401</b>	<b>1,472</b>	<b>1,432</b>
BSAI Active PH	240	227	230	239	219	246	248	246
BSAI Crew	465	508	494	506	581	523	533	523
<b>BSAI Total</b>	<b>705</b>	<b>735</b>	<b>724</b>	<b>745</b>	<b>800</b>	<b>769</b>	<b>781</b>	<b>769</b>
Bristol Bay Active PH	636	691	648	662	672	640	637	603
Bristol Bay Crew	826	936	920	979	909	898	931	920
<b>Bristol Bay Total</b>	<b>1,462</b>	<b>1,627</b>	<b>1,568</b>	<b>1,641</b>	<b>1,581</b>	<b>1,538</b>	<b>1,568</b>	<b>1,523</b>
AYK Active PH	1,385	1,358	1,396	1,313	1,220	1,391	1,410	1,407
AYK Crew	1,506	1,192	1,516	1,279	1,406	1,619	1,755	1,751
<b>AYK Total</b>	<b>2,891</b>	<b>2,550</b>	<b>2,912</b>	<b>2,592</b>	<b>2,626</b>	<b>3,010</b>	<b>3,165</b>	<b>3,158</b>
<b>Total Resident Active PH</b>	<b>7,151</b>	<b>7,086</b>	<b>7,094</b>	<b>7,011</b>	<b>6,752</b>	<b>7,020</b>	<b>7,191</b>	<b>7,160</b>
<b>Total Resident Crew Members</b>	<b>9,473</b>	<b>9,116</b>	<b>9,833</b>	<b>9,726</b>	<b>9,759</b>	<b>10,121</b>	<b>10,863</b>	<b>10,923</b>
<b>Total Resident Participation</b>	<b>16,624</b>	<b>16,202</b>	<b>16,927</b>	<b>16,737</b>	<b>16,511</b>	<b>17,141</b>	<b>18,054</b>	<b>18,083</b>
<b>Nonresident - Number of Workers (Active Permit Holders (PH) and Crew Members)</b>								
Nonresident Active PH	2,749	2,629	2,681	2,703	2,799	2,747	2,830	2,792
Nonresident Crew	7,075	7,254	8,130	8,606	9,417	9,742	11,069	11,194
<b>Nonresident Total</b>	<b>9,824</b>	<b>9,883</b>	<b>10,811</b>	<b>11,309</b>	<b>12,216</b>	<b>12,489</b>	<b>13,899</b>	<b>13,986</b>
<b>Total Number of Workers (Active Permit Holders (PH) and Crew Members)</b>								
<b>All Active PH</b>	<b>9,900</b>	<b>9,715</b>	<b>9,775</b>	<b>9,714</b>	<b>9,551</b>	<b>9,767</b>	<b>10,021</b>	<b>9,952</b>
<b>All Crew</b>	<b>16,548</b>	<b>16,370</b>	<b>17,963</b>	<b>18,332</b>	<b>19,176</b>	<b>19,863</b>	<b>21,932</b>	<b>22,117</b>
<b>Total Commercial Fishing Participation</b>	<b>26,448</b>	<b>26,085</b>	<b>27,738</b>	<b>28,046</b>	<b>28,727</b>	<b>29,630</b>	<b>31,953</b>	<b>32,069</b>

Note: Data covers fishermen who bought a full crew member license, and a unique count of nonresidents who bought 7-day licenses. The introduction of 7-day licenses has skewed the count of crew member license sales as a significant number of nonresidents have begun buying several 7-day licenses as opposed to a full (year) crew license. Therefore, actions have been taken to adjust for this trend as best as possible given available data. Alaska regional totals will not sum to the Resident total because there are some interior and northern borough/Census areas that are not part of the regions shown above – a small number of these residents also participate in Alaska's commercial fisheries. Data for 2012 is preliminary.

Source: CFEC and ADFG Licensing Data, compiled by McDowell Group.

## Active Permit Holders, by Place of Residence, 2002 - 2012

Community Name	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Southeast Region</b>											
Juneau City and Borough	284	284	295	281	289	281	263	255	258	273	272
Ketchikan Gateway Bor.	228	232	215	216	231	230	212	217	232	231	236
POW and Outer Ketchikan	238	255	252	243	242	241	256	256	247	228	231
Sitka City and Borough	443	448	452	447	455	446	445	466	457	466	481
Skagway-Hoonah-Angoon	159	149	153	156	161	159	142	137	132	128	130
Wrangell-Petersburg	583	578	595	593	586	598	597	577	562	561	565
Haines Borough	80	82	79	83	73	84	86	83	90	92	89
Yakutat City and Borough	106	117	119	126	125	137	139	137	140	132	125
<b>Total</b>	<b>2,121</b>	<b>2,145</b>	<b>2,160</b>	<b>2,145</b>	<b>2,162</b>	<b>2,176</b>	<b>2,140</b>	<b>2,128</b>	<b>2,118</b>	<b>2,111</b>	<b>2,129</b>
<b>Southcentral Region</b>											
Anchorage Municipality	487	520	525	551	528	518	527	500	497	517	499
Kenai Peninsula Borough	1,030	1,058	1,035	1,043	1,025	1,000	1,025	1,024	1,024	1,104	1,079
Matanuska-Susitna Borough	160	163	171	169	180	197	208	190	217	219	221
Valdez-Cordova Census Area	322	340	340	340	338	350	341	328	350	347	347
<b>Total</b>	<b>1,999</b>	<b>2,081</b>	<b>2,071</b>	<b>2,103</b>	<b>2,071</b>	<b>2,065</b>	<b>2,101</b>	<b>2,042</b>	<b>2,088</b>	<b>2,187</b>	<b>2,146</b>
<b>Kodiak Region</b>											
Kodiak Island Borough	529	545	531	537	497	499	499	484	497	545	546
<b>BSAI Region</b>											
Aleutians East Borough	176	178	173	169	165	164	175	163	186	182	184
Aleutians West Census Area	83	73	74	71	62	66	64	56	60	66	62
<b>Total</b>	<b>259</b>	<b>251</b>	<b>247</b>	<b>240</b>	<b>227</b>	<b>230</b>	<b>239</b>	<b>219</b>	<b>246</b>	<b>248</b>	<b>246</b>
<b>Bristol Bay Region</b>											
Bristol Bay Borough	160	172	167	168	174	160	151	146	140	129	127
Dillingham Census Area	396	434	392	401	405	395	404	378	390	410	411
Lake And Peninsula Bor.	80	85	89	93	93	85	82	79	74	81	73
<b>Total</b>	<b>636</b>	<b>691</b>	<b>648</b>	<b>662</b>	<b>672</b>	<b>640</b>	<b>637</b>	<b>603</b>	<b>604</b>	<b>620</b>	<b>611</b>
<b>AYK Region</b>											
Bethel Census Area	635	667	676	694	658	691	662	621	717	699	644
Nome Census Area	72	80	63	99	109	116	126	125	168	173	198
NW Arctic Borough	6	7	44	45	46	50	50	66	68	92	83
Wade Hampton Census Area	535	549	520	547	545	539	475	408	438	446	482
<b>Total</b>	<b>1,248</b>	<b>1,303</b>	<b>1,303</b>	<b>1,385</b>	<b>1,358</b>	<b>1,396</b>	<b>1,313</b>	<b>1,220</b>	<b>1,391</b>	<b>1,410</b>	<b>1,407</b>
<b>Other Alaska</b>											
Fairbanks/North Star Bor.	43	38	41	51	54	52	41	36	37	33	36
Denali Borough	0	1	1	0	0	1	2	1	0	0	0
Southeast Fairbanks	6	6	12	16	15	17	15	13	18	20	20
North Slope Borough	2	3	4	5	4	4	3	3	4	4	3
Yukon-Koyukuk	18	43	24	24	39	27	33	21	38	16	24
<b>Total</b>	<b>69</b>	<b>91</b>	<b>82</b>	<b>96</b>	<b>112</b>	<b>101</b>	<b>94</b>	<b>74</b>	<b>97</b>	<b>73</b>	<b>83</b>
<b>Alaska Resident Total</b>	<b>6,847</b>	<b>7,087</b>	<b>7,020</b>	<b>7,151</b>	<b>7,086</b>	<b>7,094</b>	<b>7,011</b>	<b>6,752</b>	<b>7,020</b>	<b>7,191</b>	<b>7,160</b>
<b>Nonresident Total</b>	<b>2,598</b>	<b>2,699</b>	<b>2,729</b>	<b>2,749</b>	<b>2,629</b>	<b>2,681</b>	<b>2,703</b>	<b>2,799</b>	<b>2,747</b>	<b>2,830</b>	<b>2,792</b>
<b>All Active Permit Holders</b>	<b>9,445</b>	<b>9,786</b>	<b>9,749</b>	<b>9,900</b>	<b>9,715</b>	<b>9,775</b>	<b>9,714</b>	<b>9,551</b>	<b>9,767</b>	<b>10,021</b>	<b>9,952</b>

Note: Data covers only fishermen who made a landing on a commercial permit issued by CFEC. Data for 2012 is preliminary.  
Source: CFEC, compiled by McDowell Group.

## Commercial Crew Members, by Place of Residence, 2002 - 2012

Community Name	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Southeast Region</b>											
Juneau City and Borough	305	323	366	346	389	416	371	392	441	406	435
Ketchikan Gateway Bor.	350	328	301	296	260	306	292	313	340	376	385
POW and Outer Ketchikan	277	279	316	295	308	302	329	285	273	280	285
Sitka City and Borough	444	450	517	531	516	548	541	531	552	555	561
Skagway-Hoonah-Angoon	147	132	158	147	164	182	157	148	143	129	129
Wrangell-Petersburg	625	613	622	617	670	685	701	677	668	670	664
Haines Borough	120	77	89	85	83	97	89	95	91	90	92
Yakutat City and Borough	16	29	29	45	45	53	33	48	32	69	61
<b>Total</b>	<b>2,284</b>	<b>2,231</b>	<b>2,398</b>	<b>2,362</b>	<b>2,435</b>	<b>2,589</b>	<b>2,513</b>	<b>2,489</b>	<b>2,540</b>	<b>2,575</b>	<b>2,612</b>
<b>Southcentral Region</b>											
Anchorage Municipality	868	1,017	998	1,015	990	1,031	1,119	1,057	1,137	1,242	1,247
Kenai Peninsula Borough	1,246	1,431	1,625	1,463	1,420	1,539	1,493	1,493	1,466	1,732	1,675
Matanuska-Susitna Borough	207	239	286	279	263	364	376	354	356	444	467
Valdez-Cordova Census Area	385	429	382	391	381	375	394	372	426	442	469
<b>Total</b>	<b>2,706</b>	<b>3,116</b>	<b>3,291</b>	<b>3,148</b>	<b>3,054</b>	<b>3,309</b>	<b>3,382</b>	<b>3,276</b>	<b>3,385</b>	<b>3,860</b>	<b>3,858</b>
<b>Kodiak Region</b>											
Kodiak Island Borough	980	985	936	910	913	902	973	948	982	1,029	1,013
<b>BSAI Region</b>											
Aleutians East Borough	268	268	277	222	274	276	303	312	291	299	292
Aleutians West Census Area	207	246	244	243	234	218	203	269	232	234	231
<b>Total</b>	<b>475</b>	<b>514</b>	<b>521</b>	<b>465</b>	<b>508</b>	<b>494</b>	<b>506</b>	<b>581</b>	<b>523</b>	<b>533</b>	<b>523</b>
<b>Bristol Bay Region</b>											
Bristol Bay Borough	187	183	175	172	182	159	153	146	153	165	161
Dillingham Census Area	524	596	608	643	580	604	636	646	646	683	732
Lake And Peninsula Bor.	115	157	137	164	147	135	142	128	131	149	120
<b>Total</b>	<b>826</b>	<b>936</b>	<b>920</b>	<b>979</b>	<b>909</b>	<b>898</b>	<b>931</b>	<b>920</b>	<b>930</b>	<b>997</b>	<b>1,013</b>
<b>AYK Region</b>											
Bethel Census Area	500	523	583	654	536	582	477	632	746	697	718
Nome Census Area	83	106	78	151	146	154	200	196	241	254	216
NW Arctic Borough	3	3	60	58	63	53	55	96	94	178	151
Wade Hampton Census Area	547	639	526	643	447	727	547	482	538	626	666
<b>Total</b>	<b>1,133</b>	<b>1,271</b>	<b>1,247</b>	<b>1,506</b>	<b>1,192</b>	<b>1,516</b>	<b>1,279</b>	<b>1,406</b>	<b>1,619</b>	<b>1,755</b>	<b>1,751</b>
<b>Other Alaska</b>											
Fairbanks/NS Bor.	63	63	62	67	62	81	81	83	84	70	84
Denali Borough	7	3	5	2	3	5	5	5	6	7	6
Southeast Fairbanks	10	14	11	14	18	14	14	15	22	15	22
North Slope Borough	2	4	6	5	5	4	7	5	5	10	2
Yukon-Koyukuk	9	20	15	15	17	21	29	19	20	10	33
Unknown	25	25	16	0	0	0	6	12	5	2	6
<b>Total</b>	<b>116</b>	<b>129</b>	<b>115</b>	<b>103</b>	<b>105</b>	<b>125</b>	<b>142</b>	<b>139</b>	<b>142</b>	<b>114</b>	<b>153</b>
<b>Alaska Resident Total</b>	<b>8,520</b>	<b>9,182</b>	<b>9,428</b>	<b>9,473</b>	<b>9,116</b>	<b>9,833</b>	<b>9,726</b>	<b>9,759</b>	<b>10,121</b>	<b>10,863</b>	<b>10,923</b>
<b>Nonresident Total</b>	<b>6,364</b>	<b>6,940</b>	<b>7,314</b>	<b>7,075</b>	<b>7,254</b>	<b>8,130</b>	<b>8,606</b>	<b>9,417</b>	<b>9,742</b>	<b>11,069</b>	<b>11,194</b>
<b>All Crew Members</b>	<b>14,884</b>	<b>16,122</b>	<b>16,742</b>	<b>16,548</b>	<b>16,370</b>	<b>17,963</b>	<b>18,332</b>	<b>19,176</b>	<b>19,863</b>	<b>21,932</b>	<b>22,117</b>

Note: Data covers fishermen who bought a full crew member license, and a unique count of nonresidents who bought 7-day licenses. The introduction of 7-day licenses has skewed the count of crew member license sales as a significant number of nonresidents have begun buying several 7-day licenses as opposed to a full (year) crew license. Therefore, actions have been taken to adjust for this trend as best as possible given available data. Data for 2012 is preliminary.

Source: CFEC and ADFG Licensing Data, compiled by McDowell Group.

## Appendix 4: Historical Ex-Vessel Value and Harvest Volume

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Alaska Pollock</b>											
Ex-Vessel Value (\$Millions)	\$359	\$312	\$347	\$414	\$377	\$396	\$469	\$352	\$287	\$459	\$490
Harvest Volume (Millions lbs.)	3,382	3,401	3,406	3,451	3,441	3,107	2,302	1,888	1,958	2,825	2,882
Average. Ex-Vessel Price/lb.	\$0.11	\$0.09	\$0.10	\$0.12	\$0.11	\$0.13	\$0.20	\$0.19	\$0.15	\$0.16	\$0.17
<b>Pacific Cod</b>											
Ex-Vessel Value (\$Millions)	\$136	\$152	\$134	\$141	\$182	\$220	\$272	\$131	\$145	\$210	\$179
Harvest Volume (Millions lbs.)	527	581	592	558	531	497	506	504	551	672	666
Average. Ex-Vessel Price/lb.	\$0.26	\$0.26	\$0.23	\$0.25	\$0.34	\$0.44	\$0.54	\$0.26	\$0.26	\$0.31	\$0.27
<b>Flatfish (Sole and Flounder)</b>											
Ex-Vessel Value (\$Millions)	\$38	\$38	\$42	\$62	\$72	\$76	\$96	\$71	\$80	\$113	N/A
Harvest Volume (Millions lbs.)	433	445	437	464	511	566	698	594	643	721	709
Average. Ex-Vessel Price/lb.	\$0.09	\$0.09	\$0.10	\$0.13	\$0.14	\$0.13	\$0.14	\$0.12	\$0.12	\$0.16	N/A
<b>Rockfish and Mackerel</b>											
Ex-Vessel Value (\$Millions)	\$22	\$23	\$25	\$32	\$35	\$35	\$32	\$42	\$49	\$58	N/A
Harvest Volume (Millions lbs.)	186	228	223	217	231	236	231	258	264	230	227
Average. Ex-Vessel Price/lb.	\$0.12	\$0.10	\$0.11	\$0.15	\$0.15	\$0.15	\$0.14	\$0.16	\$0.18	\$0.25	N/A
<b>Halibut</b>											
Ex-Vessel Value (\$Millions)	\$129	\$166	\$169	\$170	\$193	\$217	\$209	\$135	\$200	\$205	\$142
Harvest Volume (Millions lbs.)	78	77	77	74	69	67	65	58	55	41	34
Average. Ex-Vessel Price/lb.	\$1.65	\$2.17	\$2.20	\$2.30	\$2.79	\$3.23	\$3.23	\$2.33	\$3.65	\$4.97	\$4.19
<b>Black Cod</b>											
Ex-Vessel Value (\$Millions)	\$66	\$81	\$118	\$116	\$109	\$95	\$97	\$94	\$88	\$139	\$117
Harvest Volume (Millions lbs.)	32	36	40	37	34	32	30	27	25	27	33
Average. Ex-Vessel Price/lb.	\$2.04	\$2.28	\$2.96	\$3.10	\$3.26	\$2.93	\$3.21	\$3.49	\$3.50	\$5.13	\$3.53

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Crab</b>											
Ex-Vessel Value (\$Millions)	\$138	\$158	\$149	\$148	\$120	\$175	\$241	\$183	\$198	\$277	\$276
Harvest Volume (Millions lbs.)	55	53	51	54	61	67	92	85	72	76	112
Average. Ex-Vessel Price/lb.	\$2.49	\$2.95	\$2.94	\$2.75	\$1.96	\$2.62	\$2.61	\$2.16	\$2.76	\$3.64	\$2.46
<b>Herring</b>											
Ex-Vessel Value (\$Millions)	\$12	\$12	\$15	\$15	\$9	\$16	\$26	\$22	\$22	\$10	\$19
Harvest Volume (Millions lbs.)	73	74	76	88	79	68	84	83	107	96	75
Average. Ex-Vessel Price/lb.	\$0.17	\$0.16	\$0.20	\$0.18	\$0.12	\$0.23	\$0.31	\$0.27	\$0.20	\$0.11	\$0.26
<b>Salmon</b>											
Ex-Vessel Value (\$Millions)	\$163	\$212	\$272	\$334	\$346	\$417	\$452	\$417	\$605	\$660	\$575
Harvest Volume (Millions lbs.)	624	799	804	961	731	948	708	731	819	798	634
Average. Ex-Vessel Price/lb.	\$0.26	\$0.27	\$0.34	\$0.35	\$0.47	\$0.44	\$0.64	\$0.57	\$0.74	\$0.83	\$0.91
<b>Total Alaska Seafood</b>											
Ex-Vessel Value (\$Millions)	\$1,264	\$1,411	\$1,572	\$1,732	\$1,762	\$1,972	\$2,212	\$1,693	\$1,982	\$2,153	\$1,918
Harvest Volume (Millions lbs.)	5,405	5,728	5,734	5,935	5,716	5,612	4,744	4,253	4,519	5,511	5,451
Average. Ex-Vessel Price/lb.	\$0.23	\$0.25	\$0.27	\$0.29	\$0.31	\$0.35	\$0.47	\$0.40	\$0.44	\$0.39	\$0.35

Note: Data covers fishermen who bought a full crew member license, and 90 percent of nonresidents who bought 7-day licenses. The introduction of 7-day licenses has skewed the count of crew members and a significant number of nonresidents have begun buying several 7-day licenses as opposed to a full (year) crew license. Therefore, actions have been taken to adjust for this trend as best as possible given available data. Data for 2012 is preliminary.

Source: CFEC and ADFG Licensing Data, compiled by McDowell Group.

## Appendix 5: Seafood Processing Employment

<i>Number of Workers</i>	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Southeast	4,714	4,238	4,704	4,732	4,722	4,450	4,964	4,155	4,865	4,064	5,198
Southcentral	N/A	N/A	4,108	4,306	4,343	3,962	4,400	4,036	4,177	4,124	4,293
Kodiak	2,167	1,703	2,062	2,517	2,368	2,984	2,530	2,503	2,974	3,074	3,226
BSAI	7,072	6,983	7,191	7,088	7,257	7,899	7,465	7,275	6,263	5,991	6,871
Bristol Bay	2,960	2,281	2,510	3,594	3,357	3,090	3,655	3,987	4,855	4,886	4,574
AYK	567	389	475	485	614	561	644	828	873	889	728
Unknown/Offshore	N/A	N/A	2,034	1,816	1,878	2,046	1,547	1,957	2,009	2,787	2,957
<b>Total</b>	<b>22,571</b>	<b>20,162</b>	<b>21,833</b>	<b>22,499</b>	<b>22,725</b>	<b>23,562</b>	<b>23,660</b>	<b>23,057</b>	<b>23,563</b>	<b>23,432</b>	<b>25,112</b>

Note: Some workers are employed in more than one region during the year. Data will not match 2011 totals show in this report because the data in these tables do not capture all offshore processing employment. This segment has been estimated in 2011 for the purposes of this report, but is not show here in order to keep the time-series consistent.  
Source: ADOLWD.

<i>Total Earnings (\$000s)</i>	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Southeast	\$37,809	\$34,025	\$38,504	\$39,061	\$41,086	\$36,753	\$44,532	\$39,302	\$45,006	\$43,421	\$56,032
Southcentral	N/A	N/A	26,175	26,213	30,887	28,776	34,292	32,934	34,714	40,868	39,983
Kodiak	28,087	20,825	27,247	30,842	32,312	37,293	37,605	35,710	41,386	42,682	47,651
BSAI	82,471	91,149	107,508	108,147	114,961	128,866	124,180	118,630	105,010	105,366	126,293
Bristol Bay	18,988	13,040	15,382	22,131	22,966	25,232	29,704	28,717	32,392	33,963	29,520
AYK	N/A	N/A	5,668	1,850	434	2,403	4,409	3,396	3,298	1,054	4,735
Unknown/Offshore	N/A	N/A	27,454	28,135	36,587	33,021	32,054	36,799	26,660	46,200	45,354
<b>Total</b>	<b>226,100</b>	<b>214,280</b>	<b>247,938</b>	<b>256,379</b>	<b>279,233</b>	<b>292,344</b>	<b>306,776</b>	<b>295,488</b>	<b>288,466</b>	<b>313,554</b>	<b>349,568</b>

Note: Some workers are employed in more than one region during the year. Data will not match 2011 totals show in this report because the data in these tables do not capture all offshore processing employment. This segment has been estimated in 2011 for the purposes of this report, but is not show here in order to keep the time-series consistent.  
Source: ADOLWD.

## Appendix 6: Quotes about Alaska Seafood Industry

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“We run the Ketchikan shipyard, run by the Vigor Industrial Group, and have been in business since 1994. The seafood industry is a significant part of our business....We just completed several million dollars’ worth of work on just one customer’s fleet of vessels...I would estimate the industry is 15 to 25 percent of our annual gross revenue. We build ships and repair them...with brand new facilities, and the interest in new build with the passing of the [U.S.] Coast Guard regulations, we will see more work from the fishing industry.”

“We have 160 full-time equivalent workers and 98 percent are Ketchikan residents.”

“We see an opportunity in the future working on CDQ vessels and the Bering Sea vessel replacement program.”

*Doug Ward – Director of Shipyard Development – Alaska Ship and Drydock, Inc. (Ketchikan, AK)*

“We benefit when they benefit.”

*Jackson Morgan & Hunt PPLC (Seattle, WA)*

“We manufacture equipment for companies up in Alaska...roughly 80 to 90 percent of our business. It’s the majority, for sure.”

*Kinematics Marine, Inc. (Marysville, WA)*

“We employ 9 people. We sell electronics to commercial fisherman to help them find the fish. I would say 75 percent of our business comes from the Alaska seafood industry.”

*Radar Marine Electronics (Bellingham, WA)*

“We have government, fishing, and the private sector, but we are all about seafood. If the seafood industry went away, the whole community would go away. We would just have a small village here. We wouldn’t have a community without the processing plants and all of that....I would say it derives 90 percent of our economy. However, it’s hard to judge because we get money from the government, from the state, from the [U.S.] Coast Guard, if you took that money away, they wouldn’t be here.”

“Between fish harvesting, which is 9 percent of total employment, and seafood processing, which is 21 percent, about 30 percent of our workforce is directly related to fishing.”

*Joe Bailor – Economic Development Specialist – Kodiak Chamber of Commerce (Kodiak, AK)*

“Essentially, we wouldn’t be here without the seafood industry. The community was founded and grew specifically because of the industry. We had ice available nearby which allowed the product to be shipped down south. This brought the fisherman, and others to make the deliveries...We had a local plant that was purchased by locals in the 1960s that grew into Icicle Seafoods. The success of that company and the success of the community are very much linked...[I would] estimate over half of private sector employment is tied to the seafood industry. It’s the economic engine that runs our town...it contributes to the culture...your life revolves around the industry, even if you aren’t involved...when and where things happen in the town can be tied to seafood.”

*Liz Cabrera – Coordinator – Petersburg Economic Development Council (Petersburg, AK)*

“We have gone from 3 employees working part-time in the early 2000’s to 10 employees working full-time in the last five years. Increasing salmon prices have created a bigger market for us. We built or repaired 50 nets in 2011 and did 70 in 2012, back in the day we’d work on 20 nets per year. We employ local guys during the winter months, which is important in Homer because there’s not as many employment opportunities during that time. We operate out of the Northern Enterprises Boatyard in Homer. The facility has about 20 tenants and several are involved in boat building or welding.”

*Matt Alward – Coordinator – Bulletproof Nets, LLC (Homer, AK)*

“I’m a one-man operation but I’m looking to hire another person or two because I’m so busy in Bristol Bay. Fishermen are getting better prices for higher quality fish and so more and more are looking to add on-board refrigeration units. Fishermen are getting \$0.13 to \$0.17 extra per pound for RSW fish, it’s almost becoming mandatory in Bristol Bay.”

*Ben Ramer – Owner – BRRRRR Refrigeration (Kodiak, AK)*

“We employ 20 people in Ballard, WA. Alaska makes up about 70 percent of our business. It’s been our bread and butter since we opened in Seattle in 1987.”

*Kristian Ellefsen – President – Teknortherm (Seattle, AK)*

“The Trident Seafoods surimi plant in Motley (which utilizes Alaska pollock) has been a major player in our region for many years. The plant employs at least 150 people. It’s a big part of our economy, given there’s less than 4,500 people living in the Staples-Motley area.”

*Nate Matthews – City Administrator – City of Staples (Staples, MN)*