

Employment in the Alaska Fisheries

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A special project estimates fish harvesting jobs

Despite the importance of the fishing industry to Alaska's economy, fishermen are excluded from the monthly employment estimates published in *Alaska Economic Trends*. Fishing is defined as an agricultural activity, and all agricultural employment is excluded from wage and salary employment estimates published by the federal and state departments of labor. Unlike seafood processing workers, who are paid a wage or salary, the men and women engaged in the actual harvest are either self employed or paid a share of the harvest value. As a result, their employment does not generate payroll records that could be used as a basis for estimating employment in this segment of Alaska's economy. This article discusses the preliminary results of a special project to estimate the number of fish harvesting jobs using a methodology different from that used in wage and salary employment estimates.

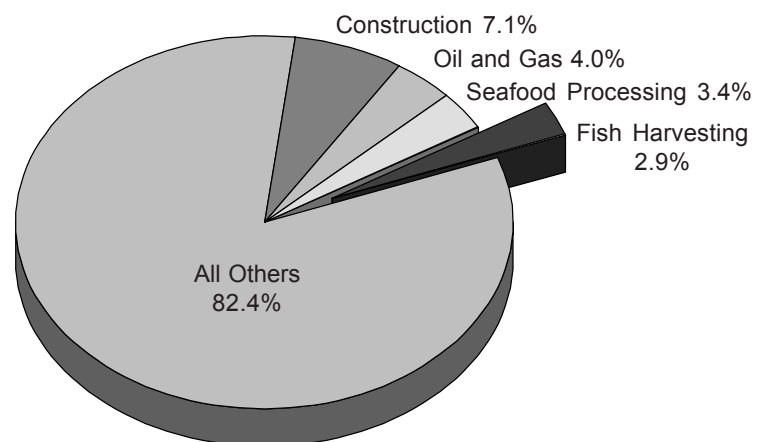
It is important at the outset to note how the employment estimates presented in this article differ from existing information about Alaska's fisheries. The Alaska Department of Fish and Game (ADF&G) publishes the number of commercial fishing crew licenses purchased each year. The Commercial Fisheries Entry Commission (CFEC) publishes the total number of fishing permits and the number of these permits fished each year. From these data sets, it can be determined how many individuals participated in Alaska's fisheries in a given year.

The number of fish harvesting jobs is different from the number of individuals who participated in Alaska's fisheries, in much the same way that a list of all the people who worked in a fast food

restaurant over the course of a year is different from the number of jobs provided by the fast food restaurant. The difference becomes more obvious when monthly job counts are averaged over a year, as is done routinely with wage and salary estimates. The fast food restaurant might provide an average of 30 jobs a month over the course of a year, but unless they have no turnover and no seasonal variation in employment, the list of people who worked there in that same year will be much longer. In the same way, the number of individuals participating in Alaska's fisheries in a specific year is certain to be much larger than the average number of jobs provided each month of that year.

One final distinction is that the existing ADF&G and CFEC data on individuals participating in Alaska's fisheries can be used to examine residency issues as is done in the lead article of this issue of

Private Sector Employment 2002



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section, and U.S. Bureau of Labor Statistics

Trends. The fish harvesting job estimates presented here do not provide insight into the residency of the job holders because the jobs are counted by place of work and the focus is on the number of workers employed during a given time period rather than the identity or characteristics of the workers themselves.

Methodology

In devising a methodology for estimating fish harvesting employment, the Department of Labor and Workforce Development (DOLWD) adhered, as much as possible, to the same concepts it uses (in cooperation with the U.S. Bureau of Labor Statistics) to estimate nonfarm wage and salary employment. The advantage of this approach is that it allows for meaningful comparisons between the fish harvesting industry and Alaska’s wage and salary industries.

A fundamental point regarding state and national industry employment data is that they assign employment by place of work, rather than by the

residence of employees. Also, wage and salary employment estimates do not differentiate between part- and full-time work and do not attempt to create full-time equivalency job counts.

The calculation of fish harvesting job estimates relies on landings made by individual permit holders in Alaska’s fisheries¹. Permit holders are considered to be the employers, and records of their landings indicate employment activity by month in specific fisheries, much like payroll records indicate employment activity in wage and salary industries. Unlike payroll records, however, records of landings do not indicate the number of jobs or people involved in harvesting the fish.

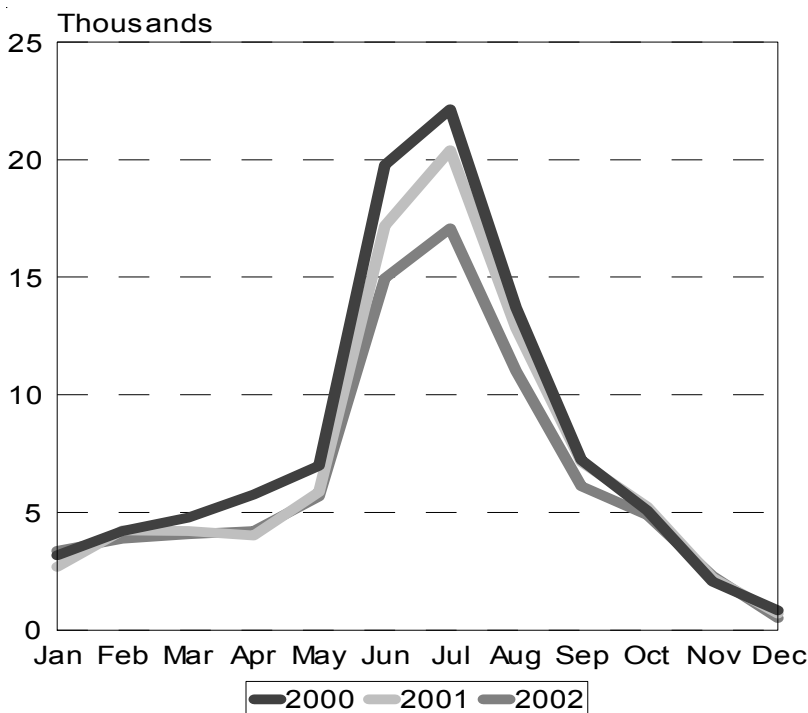
To create employment estimates from landing records, DOLWD developed “crew factors” which attempt to quantify the labor needed to fish specific permits and their associated region, species, and gear type. When a permit holder, or employer, makes one or several landings in a given month, the permit indicates which crew factor is required, thus generating employment for that fishery in that month. The crew factor is applied only once in a single month, regardless of the number of landings made. In instances where individuals own and make landings using multiple permits in any one month, the permit associated with the greatest harvest value determines which crew factor is activated.

The development of crew factors relied on numerous sources, including earlier estimates from similar studies, conversations with fishermen and processors, and a broad familiarity with the fisheries by staff in this and other departments. Additionally, DOLWD surveyed a stratified sample of some 5,000 permit holders in 117 different fisheries, receiving just over 1,000 surveys in reply. Information gleaned from all of these sources helped to inform and ultimately determine the final crew factors.

Fish harvesting jobs statewide

In 2002, the most recent year for which data is available, the fish harvesting industry provided a monthly average of 6,510 jobs statewide, or an

2 Fish Harvesting Jobs 2000–2002



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

estimated 2.9 percent of all private sector jobs.² (See Exhibit 1.) When the fishing industry is defined to include both harvesting and seafood processing, it accounts for 6.3 percent of private sector jobs, more than the oil and gas industry and nearly as many as the construction industry.

As is the case with many Alaska industries, fish harvesting employment is highly seasonal. Employment typically reaches its peak in July before declining to the seasonal low point in December. (See Exhibit 2.) In 2002, July's job count of 17,090 was more than three times the monthly average for the year. Note, however, that July employment in 2002 was more than 5,000 jobs lower than in 2000, hinting at the challenges faced by the industry in recent years.

Salmon still provides the most jobs

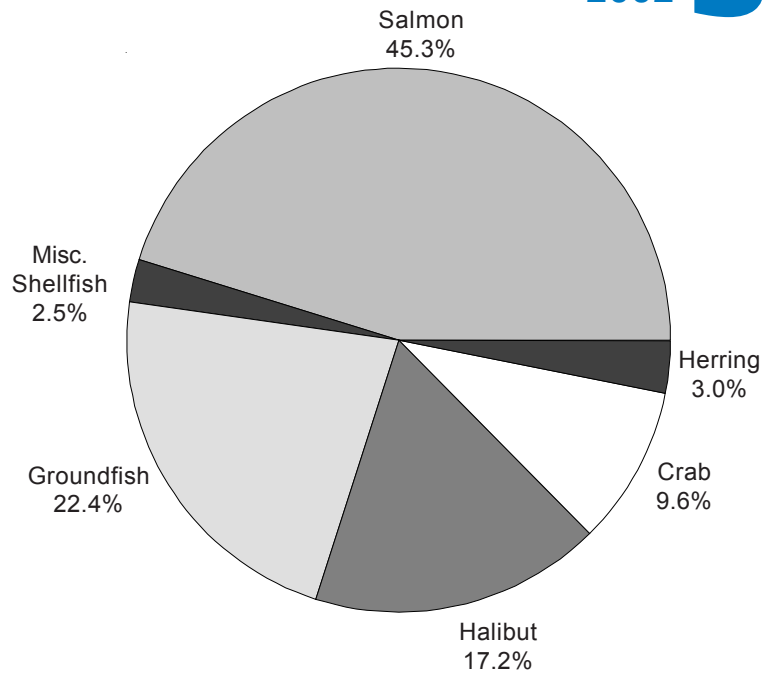
Despite the much discussed contraction of the salmon fishery in Alaska, evident even in the limited time span of these estimates, commercial salmon fishing accounted for nearly half of all harvesting jobs in 2002. (See Exhibit 3.) Two years earlier, in 2000, salmon provided 52 percent of all harvesting jobs, and the decline in total fish harvesting jobs seen in Exhibit 2 is due almost entirely to a loss of jobs in the salmon fishery.

The highly seasonal salmon fishery provides significant employment from May through September in each of the three major regions of the state, led by the Bristol Bay gillnet fishery in the Southwest. (See Exhibit 4.) This fishery accounted for about 30 percent of all salmon harvesting jobs in 2002, though participation dropped by nearly one-third compared to 2000.

Groundfish leads employment among other species

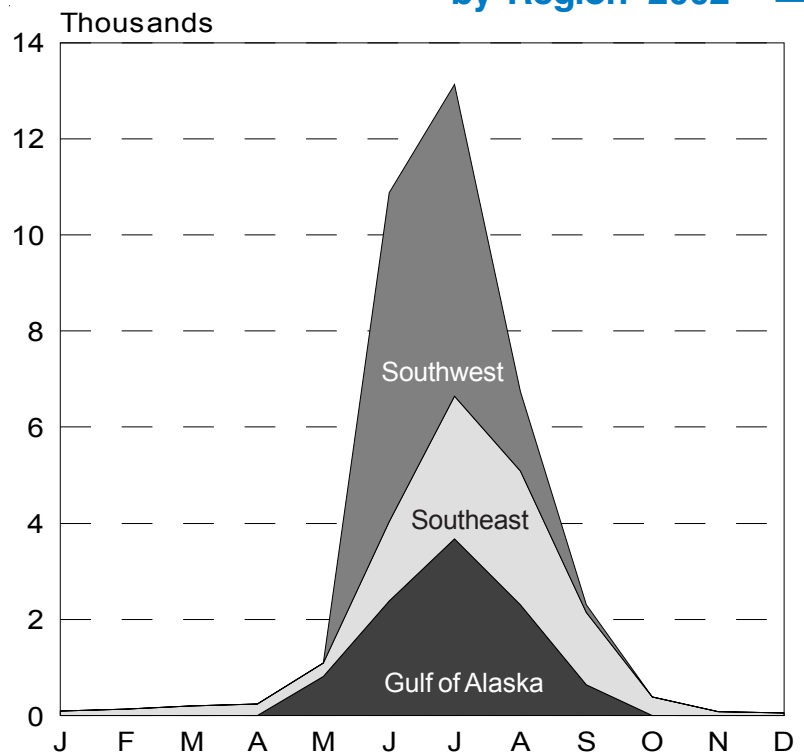
In contrast to the highly seasonal salmon fishery, Alaska's various groundfish fisheries provide a more constant number of jobs month to month. (See Exhibit 5.) With some exceptions, such as the sablefish fishery in Southeast, the groundfish fisheries are managed by the North Pacific Fishery Management Council, which has primary responsibility for the 900,000 square mile

Percent of Jobs by Species 2002 **3**



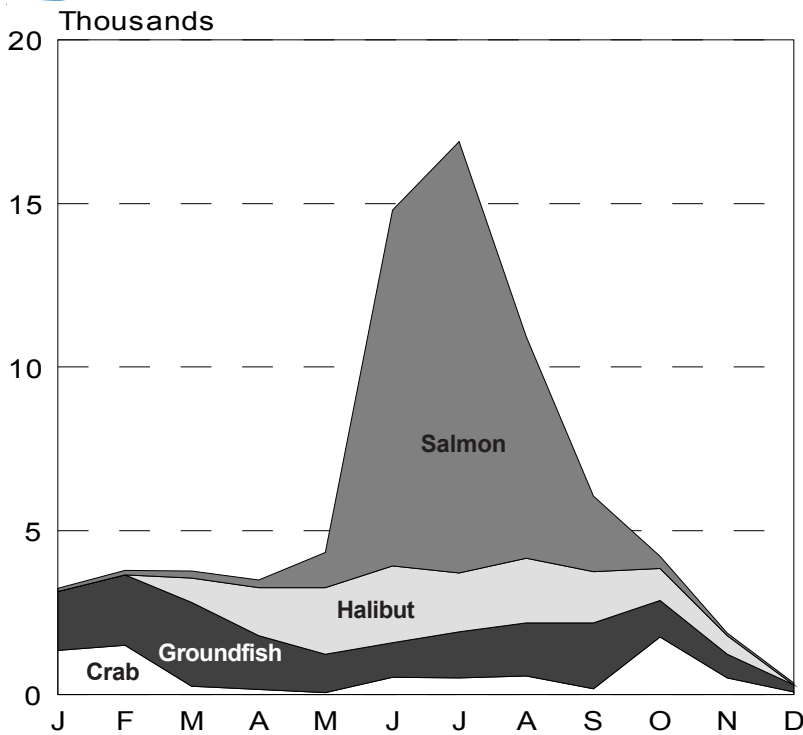
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Salmon Harvesting Jobs by Region 2002 **4**



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

5 Jobs by Major Species 2002



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Exclusive Economic Zone (EEZ) beyond state waters.

Employment generated by groundfish harvesting in Alaska is dominated by the massive Bering Sea and Aleutian Island pollock fishery in the Southwest. Here factory trawlers, some larger than 300 ft., run crews around the clock, harvesting pollock, cod, and other species that are then processed onboard. Statewide, harvesting of groundfish created a monthly average of 1,455 jobs in 2002.

While salmon and groundfish harvesting jobs are most numerous in the waters of Southwest Alaska, halibut provides the greatest proportion of harvesting employment in Southeast. (See Exhibit 6.) With a 2002 statewide monthly average of 1,120 jobs, commercial halibut fishing provided just over 17 percent of all fish harvesting employment in that year.

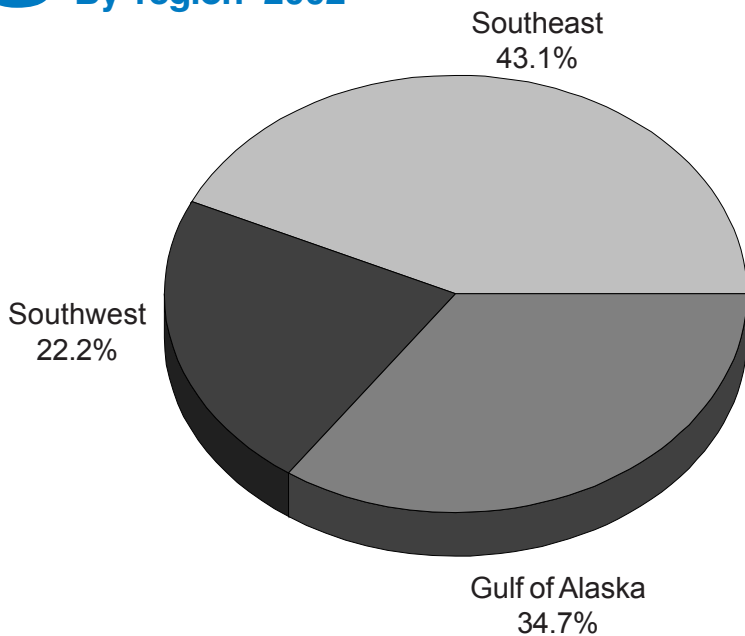
Unlike employment in the salmon fishery, the peak months for jobs in the crab fishery occur in the decidedly less hospitable winter months. (See Exhibit 7.) Responsible for about one-in-ten harvesting jobs in 2002, the crab fishery starts the year strong with the Bering Sea opilio fishery, while the Bristol Bay red king crab fishery ramps up jobs in the late fall. The summer months in-between concentrate jobs primarily in the dungeness crab fishery in Southeast.

Harvesting jobs in the herring and various shellfish fisheries accounted for just over five percent of all fish harvesting employment in 2002. Shellfish jobs, with a monthly average of 163 jobs in 2002, spike in October with the shrimp pot fishery in Southeast providing over 400 jobs. Harvesting in Alaska's sac-roe herring fisheries occurs in the spring with peak employment in May spread out in all regions of the state.

Three regions depend on fishing

The fish harvesting estimates are aggregated into essentially the same regions as those used for wage and salary employment numbers, making industry comparisons possible. Three of the

6 Halibut Harvesting Jobs By region 2002



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

state's six economic regions are heavily dependent on commercial fishing: Southeast, Gulf Coast, and Southwest. Most dramatic is the Southwest region where in 2002 the 2,820 fish harvesting jobs made up 21 percent of all private sector employment.² (See Exhibit 8.) When the region's 3,900 seafood processing jobs are included, the fishing industry provided 49 percent of private sector jobs, making it easily Southwest's biggest private employer.

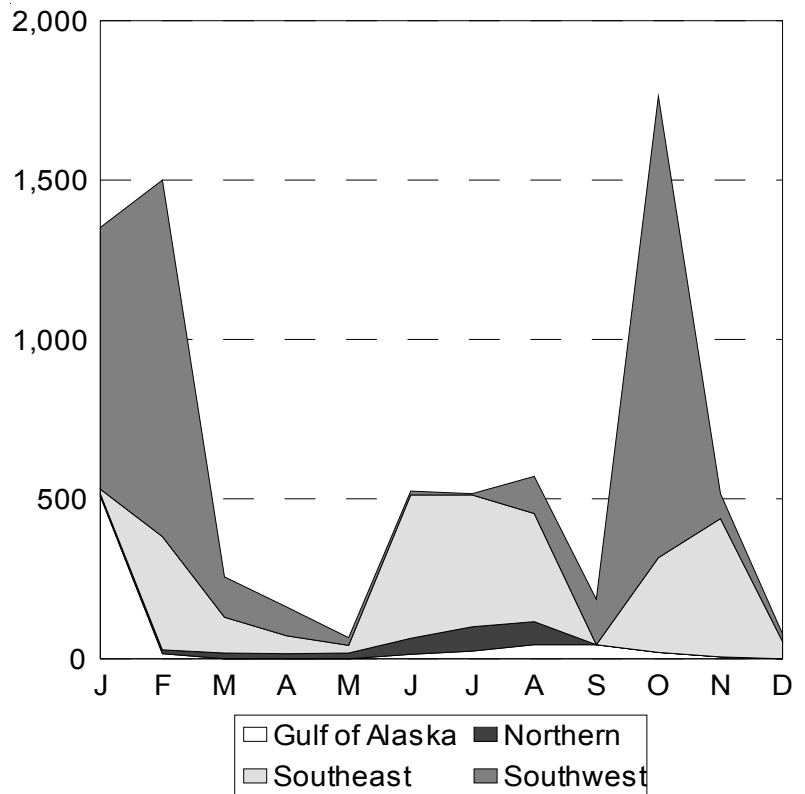
In the Gulf Coast region, fish harvesting employment plays an important, though less dominant role in the economy. Fish harvesting's 1,660 jobs in the Gulf made up about 7.4 percent of the region's 22,400 private sector jobs in 2002. When the 2,250 seafood processing jobs are added, the fishing industry made up 17 percent of private sector employment. For perspective, the fishing industry generated about 650 more jobs than retail trade, 650 more than the entire leisure & hospitality sector, and more than double the 1,850 jobs in health care & social services. As it was in Southwest, the fishing industry was the largest private sector employer in the Gulf Coast by a comfortable margin in 2002.

In Southeast, the 1,990 fish harvesting jobs in 2002 amounted to 8.2 percent of all private sector jobs. When added to the approximately 1,350 seafood processing jobs for the region in 2002, the fishing industry generated 13.8 percent of all private sector employment. The only two private employers that provided more jobs were retail trade with 4,350 jobs and leisure & hospitality with 3,750.

Southwest gets largest share of harvesting jobs

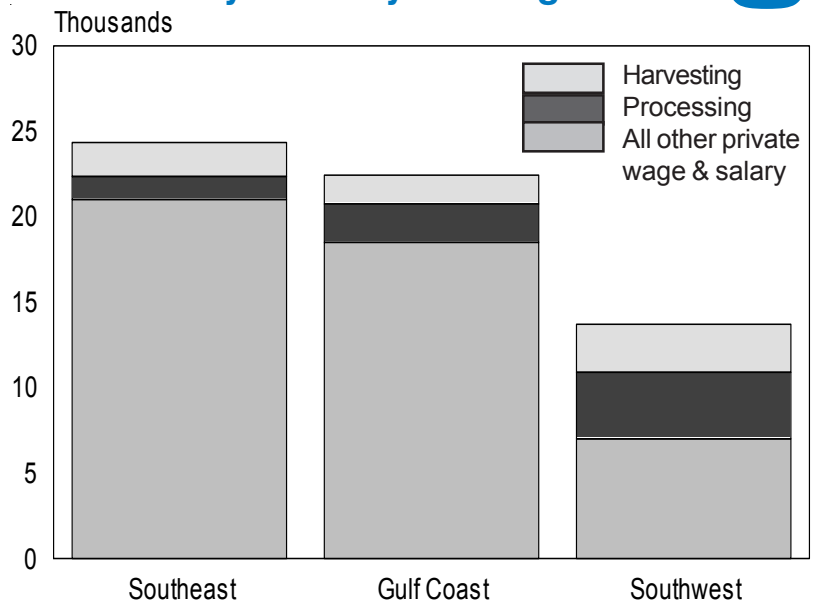
Of the state's 6,510 fish harvesting jobs in 2002, 43.3 percent were in the Southwest region. (See Exhibit 10.) The next largest share went to Southeast with 30.6 percent, followed by the Gulf of Alaska with 25.5 percent. The remaining 0.6 percent of harvesting jobs came from a relatively small amount of crab, herring, and salmon fishing in the Northern region.

Crab Harvesting Jobs By region 2002



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Private Sector Employment² By industry and region 2002



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Conclusion

The fish harvesting employment estimates presented in this article fill a gap in the employment data provided in *Trends* and elsewhere by the Alaska Department of Labor and Workforce Development. Historically, the fishing industry has played a crucial role in Alaska's economy and, despite current challenges in some fisheries, continues to do so, as evidenced by these employment estimates.

This project is the first attempt in more than 15 years to produce fish harvesting employment estimates. Because the numbers are still

considered preliminary, changes to the methodology and estimates are possible. In general, the estimates should be viewed as conservative. The decision to apply only one set of crew factors to an individual permit holder who had landings in the same month under two different permits is one reason for this. Another is that no jobs were allocated to months when permit holders undoubtedly spent time preparing for the fishing season.

The detailed tables of fish harvesting job estimates and the crew factors used to generate the estimates are available at almis.labor.state.ak.us/

9 Fish Harvesting Job Estimates 2000–2002

All Regions and Species

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Monthly Average
2000	3,190	4,220	4,790	5,760	6,980	19,760	22,150	13,690	7,240	5,070	2,070	830	7,980
2001	2,690	4,220	4,210	4,020	5,870	17,190	20,400	12,830	7,140	5,250	2,230	700	7,230
2002	3,370	3,900	4,070	4,210	5,670	14,960	17,090	11,010	6,100	4,900	2,320	510	6,510

Gulf of Alaska Fishery

2000	1,110	1,320	1,560	1,480	2,580	4,080	5,380	3,770	2,020	900	510	140	2,070
2001	1,090	900	1,070	1,310	2,160	4,140	5,060	3,540	1,790	960	440	80	1,880
2002	980	610	1,010	1,250	2,150	3,330	4,450	3,200	1,530	790	480	130	1,660

Northern Fishery

2000	10	20	10	20	10	280	220	290	20	0	0	0	70
2001	0	10	10	10	10	180	300	270	0	0	0	0	60
2002	10	10	20	20	130	70	130	100	0	0	0	0	40

Southeast Fishery

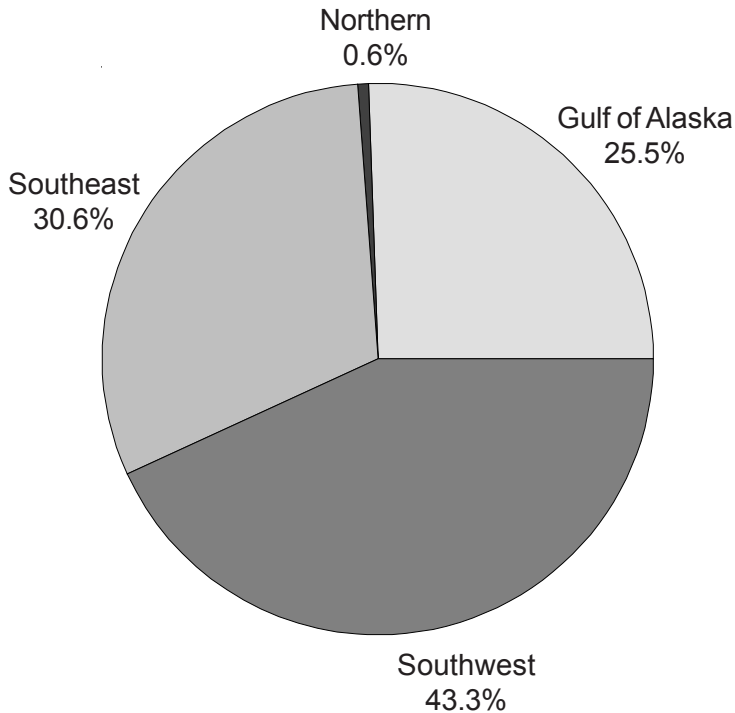
2000	330	730	1,270	1,530	2,070	3,500	4,700	4,710	3,200	1,870	1,140	420	2,120
2001	300	640	1,300	1,590	2,020	3,790	4,690	4,620	3,310	2,040	1,280	300	2,150
2002	340	640	1,210	2,060	1,950	3,380	4,130	3,920	2,780	1,860	1,340	300	1,990

Southwest Fishery

2000	1,740	2,160	1,950	2,730	2,320	11,910	11,850	4,920	2,010	2,300	430	270	3,720
2001	1,310	2,680	1,840	1,120	1,680	9,080	10,350	4,400	2,030	2,250	520	310	3,130
2002	2,040	2,630	1,840	890	1,440	8,170	8,390	3,790	1,800	2,250	500	80	2,820

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

10 Harvesting Jobs by Region 2002



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Footnotes

¹ The majority of landing data comes from mandatory fish ticket reporting by shoreside, mothership, and in-shore floating processors. Landing data for groundfish catcher processors is provided by National Marine Fisheries Service (NMFS) as compiled by the Alaska Fisheries Information Network (AKFIN). These estimates utilize data from 2000 to 2002.

² Private sector jobs is defined here to mean all private wage and salary jobs combined with fish harvesting jobs. All other agricultural jobs and self-employment are excluded.

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