

## Fish are Alaska's bread and butter

**F**isheries play an economic role in Alaska similar to that of wheat farming in North Dakota or corn production in Iowa. The latest National Marine Fisheries Service release reported that over 55 percent of the total U.S. fisheries harvest by volume was taken in Alaska waters. That production translated into nearly one-third of the total U.S. harvest by value. Dutch Harbor/Unalaska ranked first among U.S. ports in terms of volume, more than doubling runner-up Reedville, Va. These are impressive numbers for a state whose population amounts to only two-tenths of one percent of the nation's total.

Not surprisingly, fisheries are also a major source of employment in the state. In 2005 the average

monthly fish harvesting<sup>1</sup> job count was nearly 7,500, and at the peak of summer, the monthly job count rose above 20,000. (See Exhibits 1 and 2.) Add to those numbers the thousands of jobs the fisheries create in seafood processing, support service industries and government management, and the economic importance of fisheries to Alaska becomes even more clear.

This article will focus primarily on fish harvesting jobs, a population frequently left out of employment data sets for reasons discussed in the methodology section at the end of the article.

### Two trend lines

Alaska's fish harvesting employment increased slightly in 2005, adding 127 jobs.<sup>2</sup> This 1.7 percent gain nearly equaled the 1.9 percent growth rate of the state's wage and salary employment. Over the six years measured by this relatively new data set, total fish harvesting employment has shown two distinct trend lines: from 2000 to 2002, employment numbers fell at a dramatic rate;<sup>3</sup> then from 2002 to 2005, total employment stabilized and managed to recover a small amount of the lost ground. (See Exhibit 1.)

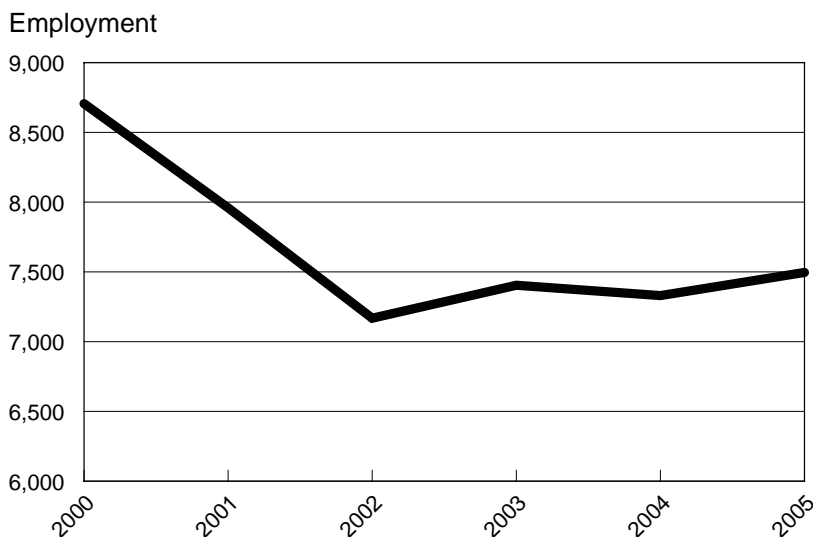
The employment growth hasn't been shared evenly among the fisheries, however. On one

<sup>1</sup> The term "fish harvesting" jobs is used in this article rather than more generic references to "fishing" jobs to clarify that only the jobs created for permit holders and their crew who are directly involved in harvesting the fish are being included and not the many jobs in processing, tendering and other related activities.

<sup>2</sup> Job counts published in this article are annualized, unless otherwise noted. An annualized job count is simply the average number of monthly jobs over the full calendar year.

<sup>3</sup> The declines undoubtedly extended well back into the 1990s, judging from other fisheries-related data such as permits fished and catch values, but harvesting employment data are not available for years before 2000.

### 1 Fish Harvesting Employment Alaska, 2000 to 2005



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

hand, the salmon fisheries added 291 jobs for an 8.3 percent over-the-year increase in 2005, and have added a total of 744 jobs since their low point in 2002. On the other hand, the combined total for all other fisheries fell by 166 jobs in 2005, amounting to a 4.4 percent decline, and have lost a combined total of 772 jobs since 2000. (See Exhibit 3.)

## Salmon is still king

Salmon accounted for more than 50 percent of all Alaska fish harvesting jobs in 2005. (See Exhibit 4.) According to the Commercial Fisheries Entry Commission, 75 percent of all individuals who fished permits that year spent part of their time fishing for salmon.<sup>4</sup> In sheer numbers, the Alaska fishing fleet has always been dominated by salmon fishermen, some of whom traditionally supplemented their income with harvests of halibut, sablefish, herring and near-shore crab only to see those supplemental fisheries assume a more important economic role as salmon prices collapsed in the 1990s.

## Salmon's employment gains are uneven

The over-the-year gains in salmon-related employment are evenly distributed regionally, with Southeast registering an 8.3 percent gain, the Gulf Coast adding 7.8 percent and Southwest showing an 8.4 increase. But these new jobs aren't as well distributed among gear types or target species.

In fact, the post-2002 growth in salmon employment is largely explained by expanded participation in the targeted king salmon fisheries – which have seen high prices over the last several seasons – and by increased fishing effort on the much-improved sockeye returns to Bristol Bay.

It also appears that higher prices have encouraged Gulf Coast salmon harvesters to fish longer

seasons and generate higher annualized job counts in the process. July's employment numbers in the Gulf Coast salmon fisheries – the peak month of the year – weren't significantly different in 2004 and 2005, but employment in both June and August were noticeably higher in 2005.

## Those coveted kings

Fresh wild king salmon have once again captured public attention. Trollers and the few early king salmon gillnet fisheries are in a particularly good position to capitalize on this market. The November through March winter troll employment has steadily grown since 2002 and continued this pattern in 2005.

In a similar way, May salmon employment, which is dominated by the troll fisheries and the early driftnet fisheries for king salmon bound for the Copper River (Gulf Coast) and the Stikine and Taku Rivers (Southeast) gained 395 jobs in 2005, which amounts to a 33 percent over-the-year increase. (See Exhibit 2.)

Similar growth is visible in the winter king troll fisheries, which take place exclusively in Southeast. January 2005's job count of 232 was more than 100 higher than January 2004's total, for example, and all six winter months – January through March and October through December – had increased employment.

Overall, the favorable market conditions for kings have helped create solid, if relatively small, employment gains in the off-season months over the 2000 to 2005 history of this series. (See Exhibits 2 and 5.)

## A less rosy picture for pinks and chums

Unlike the troll fishery, which sees nearly year-round participation, the salmon fisheries as a whole are highly seasonal. (See Exhibit 6.) The months of June, July and August see huge volumes of salmon landed and correspondingly large employment numbers.

<sup>4</sup> CFEC data don't capture the at-sea component of the Bering Sea and Aleutian Islands fishery, and don't always agree with fisheries data originating with the U.S. National Marine Fisheries Service.

# 2 Fish Harvesting Employment Alaska, 2000 to 2005

## All Species

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Monthly Average
2000	3,230	4,122	5,180	6,488	8,417	21,298	23,362	14,958	8,285	5,797	2,451	889	8,706
2001	2,972	4,286	4,505	4,681	7,053	18,884	21,571	13,921	8,095	6,194	2,617	726	7,959
2002	3,590	4,047	4,334	4,913	6,715	16,292	18,224	11,975	6,983	5,794	2,632	524	7,168
2003	3,284	3,609	4,378	5,797	6,233	17,610	19,670	11,922	7,191	5,969	2,660	526	7,404
2004	3,594	3,492	4,110	5,050	6,476	17,139	19,634	12,308	7,371	6,023	2,259	509	7,330
2005	3,503	3,032	4,229	4,944	6,537	18,184	20,405	13,003	7,124	4,843	2,730	948	7,457

## Total Crab

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Monthly Average
2000	70	524	198	1,506	135	478	448	434	174	1,707	304	72	504
2001	767	1,636	249	150	132	508	603	575	156	1,748	506	129	596
2002	1,526	1,535	273	165	75	578	593	658	204	2,052	564	77	692
2003	1,050	950	229	96	42	526	602	615	184	1,978	566	91	577
2004	1,239	706	222	42	39	513	549	568	110	1,836	304	82	517
2005	1,191	454	375	51	24	484	523	420	91	688	834	190	443

## Total Groundfish

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Monthly Average
2000	2,965	3,339	3,195	1,992	1,051	797	933	1,331	1,271	1,048	501	473	1,575
2001	2,050	2,441	2,338	1,499	898	896	1,114	1,335	1,674	1,171	526	387	1,361
2002	1,836	2,264	2,318	1,179	739	647	1,115	1,282	1,411	1,020	654	221	1,224
2003	1,972	2,270	2,033	1,338	955	760	1,143	1,232	1,397	905	436	68	1,209
2004	2,134	2,413	1,775	1,342	719	735	997	1,184	1,299	1,142	482	75	1,191
2005	1,965	2,162	1,670	1,264	516	717	1,017	1,008	1,418	1,092	392	367	1,132

## Total Halibut

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Monthly Average
2000	0	0	1,116	1,765	2,682	2,482	2,079	2,451	2,263	1,371	744	0	1,413
2001	0	0	1,155	1,647	2,380	2,557	2,058	2,483	2,122	1,426	766	0	1,383
2002	0	3	906	1,766	2,387	2,760	2,305	2,396	1,939	1,155	655	0	1,356
2003	0	0	1,159	1,851	2,046	2,530	2,049	2,429	1,825	1,321	717	0	1,327
2004	0	3	1,077	1,477	2,417	2,443	1,909	2,380	1,683	1,338	624	0	1,279
2005 <sup>1</sup>	0	3	1,045	1,434	2,346	2,372	1,853	2,310	1,634	1,299	606	0	1,242

<sup>1</sup> The halibut employment estimates for 2005 are preliminary.

Note: Individual species' totals may not exactly add to All Species' totals due to rounding.

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

Because most of the fish must be frozen or canned, they face different market conditions than kings and don't command the premium prices of the fresh market. It's these high-volume fisheries that continue to struggle with relatively low prices, and employment in the peak summer months remains far below 2000 levels (see Exhibit 5), despite gains in 2005 and a generally upward trend since 2002. (See Exhibits 2 and 3.)

While salmon prices, with the exception of pinks, have shown notable increases from their low points in 2001 and 2002, prices for sock-eye, pink and chum, which account for 98 percent of Alaska's total harvest, are still well

below their historical high-water marks of the late 1980s and early 1990s.

## Bristol Bay bounces back

Although the Gulf Coast salmon fisheries saw a healthy increase in their peak months' job count in 2005, most likely attributable to higher prices, the Southwest region's growth during those months was especially notable.

During June, July and August of 2005, the region averaged 6,800 jobs, nearly 600 more than the average for those same three months in 2004. A considerable amount of the over-the-year increase was the result of a legal ruling that ended

**Total Sablefish**

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Monthly Average
2000	0	0	146	753	1,020	749	422	487	944	604	309	0	453
2001	0	0	260	741	919	805	529	472	951	650	271	0	466
2002	0	3	309	729	912	810	480	481	899	422	194	0	437
2003	0	0	384	793	806	655	505	765	830	514	309	0	463
2004	0	4	391	717	912	614	549	674	730	582	229	0	450
2005	0	21	409	733	902	662	438	688	692	579	261	0	449

**Total Herring**

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Monthly Average
2000	0	0	271	92	2,339	566	107	0	0	0	0	33	284
2001	17	0	274	288	1,491	505	85	0	0	5	5	11	223
2002	6	11	270	761	1,324	88	100	0	0	8	0	17	215
2003	6	16	275	1,353	1,034	0	76	0	5	0	5	11	232
2004	0	0	253	1,023	1,089	3	46	0	5	5	0	6	202
2005	20	11	286	1,046	1,067	164	18	0	0	5	0	5	218

**Total Miscellaneous Shellfish**

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Monthly Average
2000	126	131	52	52	143	108	106	100	49	732	417	185	183
2001	62	82	33	48	146	132	81	97	54	780	380	122	168
2002	127	93	40	32	127	108	95	83	47	711	469	144	173
2003	126	120	27	46	110	97	82	81	44	712	427	191	172
2004	98	99	41	45	112	99	77	76	36	694	434	163	165
2005	95	90	57	59	98	79	74	58	30	644	396	182	155

**Total Salmon**

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Monthly Average
2000	70	128	203	329	1,047	16,119	19,268	10,156	3,584	335	177	127	4,295
2001	77	127	197	309	1,088	13,482	17,102	8,959	3,139	415	164	77	3,761
2002	96	138	219	282	1,152	11,301	13,536	7,076	2,484	427	96	65	3,073
2003	131	254	271	321	1,241	13,042	15,214	6,802	2,907	537	202	166	3,424
2004	123	268	350	405	1,189	12,734	15,508	7,426	3,509	427	187	184	3,526
2005	232	292	388	359	1,584	13,708	16,482	8,520	3,259	536	243	205	3,817

a Chignik cooperative allocation, altering the structure of the area's seine fishery.

The participants in the co-op, which was formed in 2002, had agreed to reduce the number of boats and permits fished in an effort to cut costs and operate more efficiently. Seventy-seven permit holders joined and paid 22 members to catch the allocation it had been granted by the Alaska Board of Fisheries. The catch value was then divided among all the members.

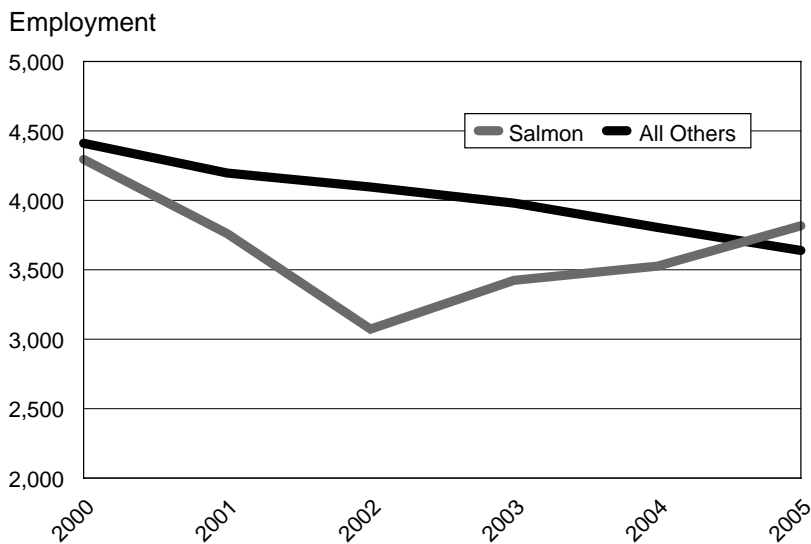
The effort to maximize efficiencies in a fishery struggling with low prices illustrates an important point about fish harvesting employment estimates and job counts in general. While the number of jobs in a given industry or the econ-

omy as a whole is often used as an indicator of economic health – job growth is considered healthy and declines are considered unhealthy – simple job counts give only an incomplete picture of an economy. There are a number of possible scenarios in which an affected population would actually prefer fewer jobs in exchange for some other economic benefit.

After the court ruling at least temporarily ended the co-op, the number of permits participating in the fishery tripled from 2004 to 2005, resulting in nearly 300 more monthly jobs during the seasonal peak.

But the Southwest region's salmon harvesting employment has also been growing as a result of stronger sockeye runs and slightly higher prices.

### 3 Fish Harvesting Employment Alaska, 2000 to 2005



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

From a low point of 11.2 million sockeye in 2002, the run strength increased to 27.2 million in 2004 and fell only slightly to 26 million in 2005. Total Southwest salmon harvesting employment increased correspondingly from 1,284 in 2002 to 1,739 in 2005.

#### Big changes for crab fishing

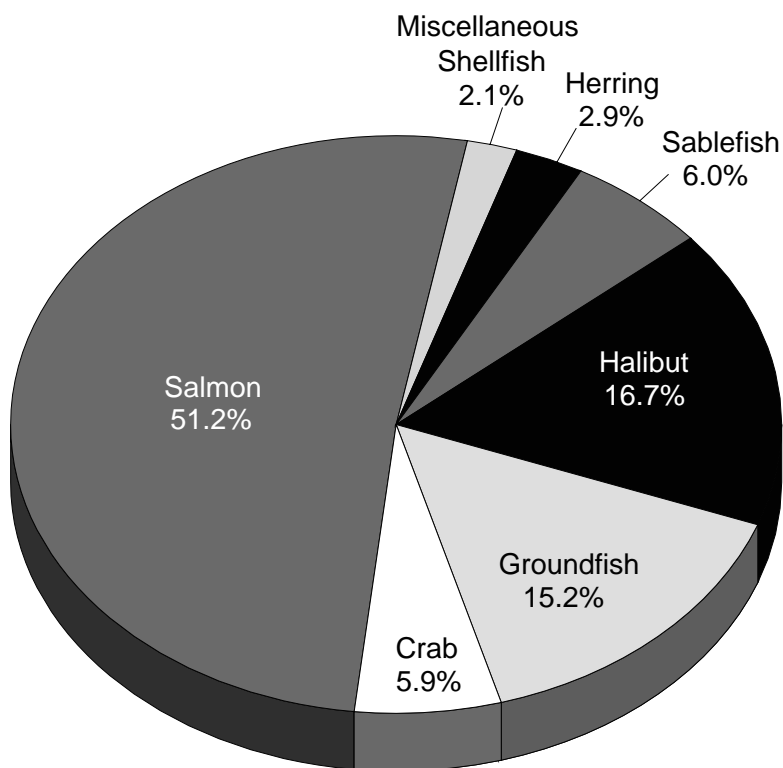
Employment in the crab harvest has followed a different pattern than most fisheries over the six years reported here. But the fact that the number of jobs increased from 2000 to 2002 then declined through 2004 may be mostly due to season timing, particularly in the Bering Sea and Aleutian Islands' early opilio season. The employment changes from 2004 to 2005 are considerably more complex.

The effects of the newly implemented Bering Sea and Aleutian Islands (BSAI) crab fisheries rationalization program, which created a quota-based fishery, and the associated vessel buyback, began to register in 2005. (See Exhibit 8.) The fishery shed 74 jobs in 2005, which amounted to a 14.3 percent over-the-year decline, but because the program was not implemented until Aug. 15 of that year, the preceding January's opilio crab harvesting employment was unaffected. The September 2005 through December 2005 employment numbers, which are largely based on the BSAI red king crab fisheries, serve as a better indicator of the changes taking place as a result of rationalization.

Predictably, rationalizing the crab fishery lowered 2005 employment dramatically in the peak month of October and raised employment levels in November and December of that year as harvesters with quota shares were no longer in a race to harvest the available catch and they took longer to harvest their quotas.

The net effect, however, was a significantly smaller average job count from September 2005 through December 2005. In the five years immediately preceding rationalization, the Southwest region's crab fishery averaged 479 jobs over those four months. The 2005 fishery, under rationalization, produced a monthly average of 303 jobs.

### 4 Harvesting Employment by Species Alaska, 2005



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

## Groundfish: big volume, big value

Salmon generates more harvesting jobs than any other fishery, but in terms of both volume and value, the state's largest fishery is groundfish, where a relatively small number of large boats catch huge quantities of fish, predominantly pollock, without requiring proportionate increases in manpower.

But the groundfish category is a rather eclectic collection of fisheries. While the BSAI pollock trawl fishery is by far Alaska's – and the nation's – largest fishery in terms of volume, there are many smaller boat fisheries included in this grouping. Longliner, jig and pot fishermen, who target everything from rockfish to Pacific cod, greatly outnumber the better-known trawlers.

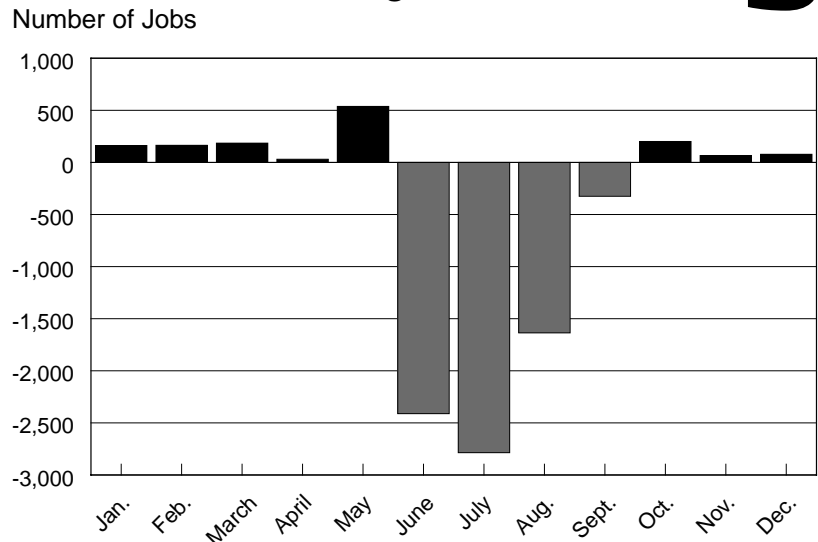
As a group, groundfish employment has been suffering a slow erosion. While the 59 jobs lost in 2005 seem insignificant in relation to that year's employment of 1,132, it represents a 5 percent decline and continues a five-year trend of job losses. Since 2000, the groundfish fisheries have shed a total of 443 jobs, a decline of 28 percent.

The losses in groundfish employment are not evenly divided among the three large fishing regions. While the BSAI trawl fisheries in the Southwest region have seen a small contraction, most of the groundfish employment declines since 2000 are attributable to a much-reduced effort among rockfish longliners. This has had some impact on all three regions, but the Gulf Coast region – Kodiak in particular – seems to have suffered the greatest losses over this period.

As a result, in 2005 the North Pacific Fishery Management Council began work on its Rockfish Pilot Program. The program is intended to address the problems associated with falling rockfish prices and decreased landings and will try to stabilize Kodiak's rockfish economy. The council envisions a short-term, two-year program that will provide some immediate relief to the community until a comprehensive Gulf of Alaska groundfish rationalization plan can be implemented.

## Monthly Salmon Harvesting Jobs Change from 2000 to 2005

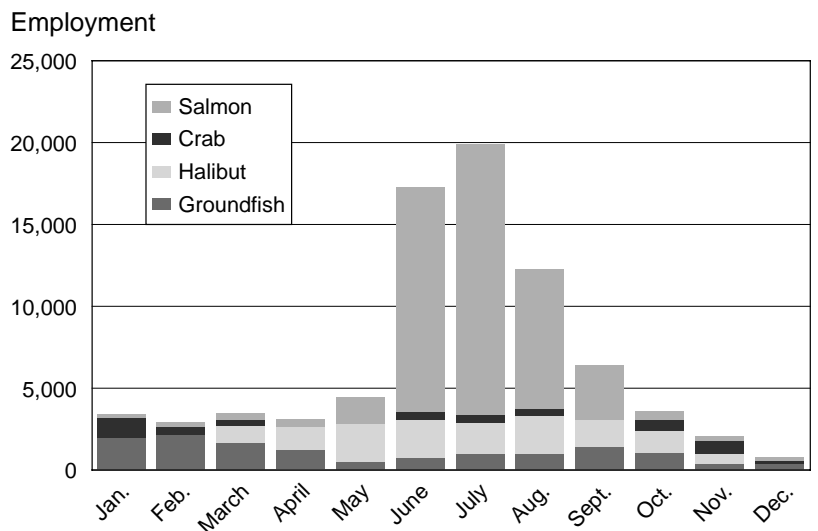
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Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section

## Only Salmon is Highly Seasonal Average monthly employment, Alaska 2005

# 6



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

## Halibut and sablefish

Alaska's halibut fishery shows an employment trend similar to groundfish: small losses in 2005 that continue a recent history of consistent, incremental job erosion. The 37 fewer jobs in 2005 represent a 2.9 percent decline, and the five consecutive years of losses from 2000 to 2005 add up to a total loss of 171 jobs and a 12 percent overall decline.

## 7 Statewide Salmon Prices In inflation-adjusted dollars,<sup>1</sup> 2000 to 2005

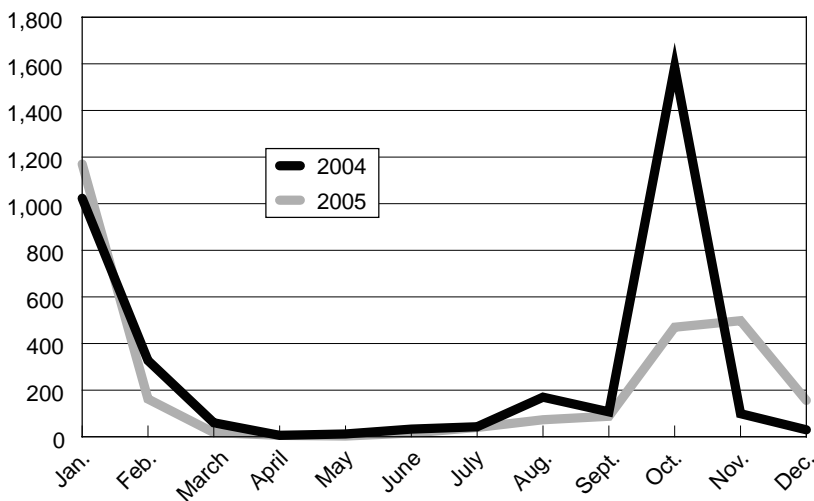
	King	Sockeye	Coho	Pink	Chum
2000	\$2.22	\$0.90	\$0.64	\$0.17	\$0.31
2001	\$1.86	\$0.63	\$0.54	\$0.14	\$0.38
2002	\$1.41	\$0.65	\$0.39	\$0.11	\$0.20
2003	\$1.51	\$0.67	\$0.51	\$0.10	\$0.19
2004	\$1.91	\$0.62	\$0.70	\$0.10	\$0.22
2005	\$2.23	\$0.74	\$0.75	\$0.12	\$0.26

<sup>1</sup> Using the Anchorage Consumer Price Index

Source: Alaska Department of Fish and Game

## 8 Crab Harvesting Employment The effects of rationalization

Employment



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

The continuing fall in employment contrasts with an ongoing trend of higher earnings.<sup>5</sup> In effect, fewer jobs are being generated by a fishery that has experienced significant economic gains over the 2000-2005 period. Once again, this demonstrates that employment numbers are but one piece of the puzzle in determining the economic health of a fishery.

Sablefish fishery employment remained virtually unchanged from 2004 levels, providing 449 jobs in 2005. Over the six seasons the fishery has been monitored, employment has varied within extremely narrow parameters. Averaging 453

<sup>5</sup> While 2005 earnings data aren't yet available, high ex-vessel prices make it likely that they will show continued growth.

annualized jobs, the fishery has ranged from a low of 437 in 2002, to a high of 466 in 2001. Ex-vessel values have also remained remarkably stable, with the 2001 low only 15 percent below the six-year mean, and the 2003 high only 12 percent above.

In large part, employment patterns in the halibut and sablefish fisheries are explained by the quota share system that was introduced in 1995 and the consolidation of production that has followed. At the time of original issuance, 4,830 individuals received halibut quota shares. By 2000, the number of halibut share holders had fallen to 3,541, and by 2005 this number had declined 33 percent from the original issuance to 3,239. The 12 percent decline in halibut fisheries employment from 2000 to 2005 roughly tracks the 8 percent decline in halibut quota share holders over that same period.

The concentration in the number of sablefish share holders occurred somewhat earlier, falling from 1,052 in 1995 to 875 by 2000, a 17 percent decline. Since that time, both the number of quota share holders and employment in the sablefish fisheries has remained remarkably stable.

### Herring and miscellaneous shellfish

Herring and miscellaneous shellfish produced a combined total of 373 annualized jobs in 2005, which amounted to just 5 percent of Alaska's fish harvesting employment. Both fisheries have been very stable over the past six years, and lacking unexpected biological or economic interventions, are expected to maintain these employment levels into the foreseeable future.

### Comparing employment numbers: a few caveats

One of the reasons for this project is because there was a conspicuous hole in the employment data regularly published in *Trends* and elsewhere. Fishing industry advocates and private consultants periodically estimated the number of fish harvesting jobs, but there was no consistently produced data that would allow comparisons of employment changes over time

in the fishing industry or comparisons with the employment numbers of other important industries in the state.

Although a consistently applied methodology makes the employment numbers comparable over time, it's a bigger challenge to make them comparable with other industry employment because of basic structural differences between a job as a fisherman and a job as a nurse or teacher.

The most important difference is in the basic relationship itself: compensation for wage and salary jobs is based on the amount of time worked, usually the number of hours or days on the job in a given pay period. Payroll records, which are the primary source of employment estimates and counts, can therefore be used to tie wage and salary employment to a specific month.<sup>6</sup>

Compensation for both permit holders and crew, in contrast, is based on earnings. Crew members are paid a percentage, or share, of the earnings that result from the fishing trips in which they were involved. As a result, there's no convenient measure for determining in what months a fish harvester worked or for how long.

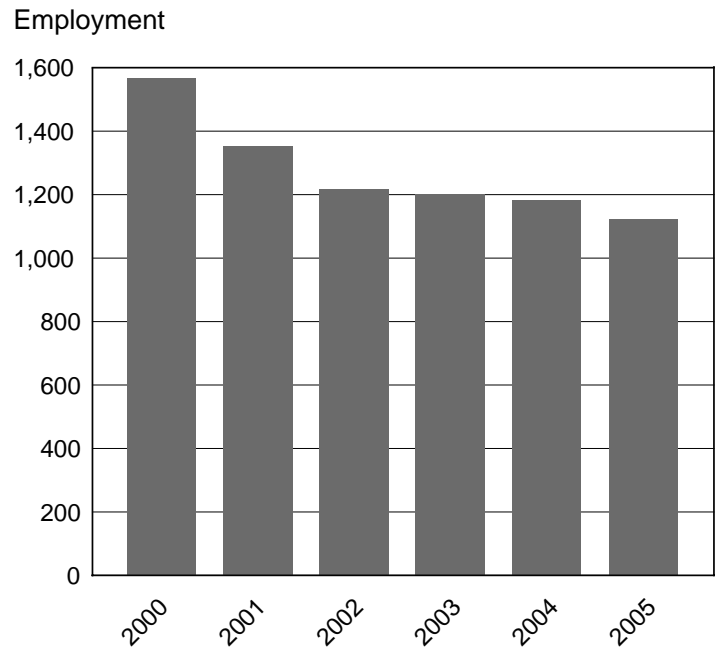
Another key difference is that fishing regulations and management regimes limit the pool of available employers in a way that restrains and ultimately caps job growth. To participate in one of the state's limited entry fisheries, such as salmon, a person must hold a permit. The permits can be bought and sold, but the total number of permits doesn't generally change in an established fishery.

When economic conditions are favorable, most permit holders will fish and in so doing generate jobs for themselves and their crew members. But when costs rise or the value of the catch falls – as happened in the 1990s when farmed salmon entered the market and depressed prices<sup>7</sup> – the percentage of permit holders who fish declines.

<sup>6</sup> The employment statistics regularly published in Alaska and nationally as part of the Current Employment Statistics program do not attempt to calculate full-time equivalency job counts.

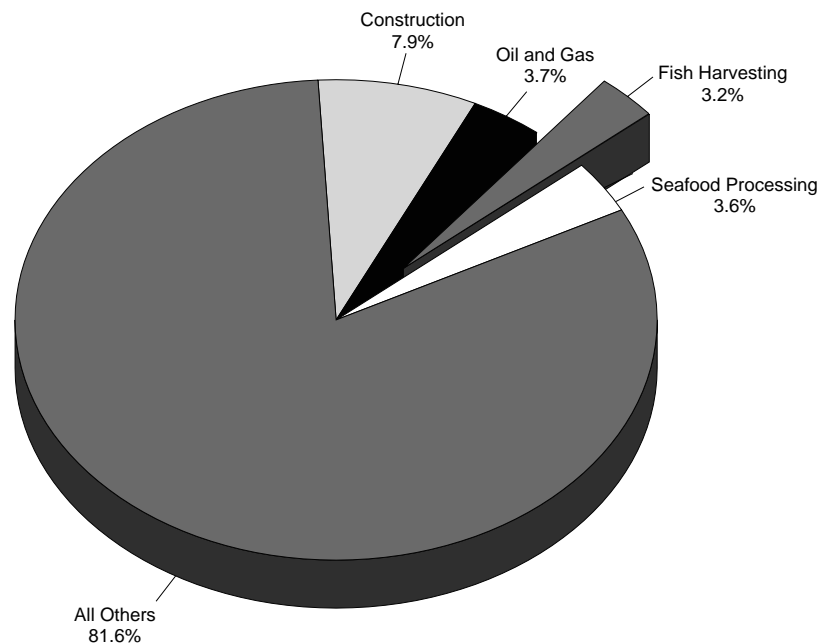
<sup>7</sup> The percentage of salmon permits fished declined from 85 percent in 1990 to 57 percent in 2002. It has since recovered some of the lost ground, increasing to 67 percent by 2005.

## Groundfish Harvesting Employment Alaska, 2000 to 2005 **9**



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

## Private-Sector Employment<sup>1</sup> Alaska, 2005 **10**



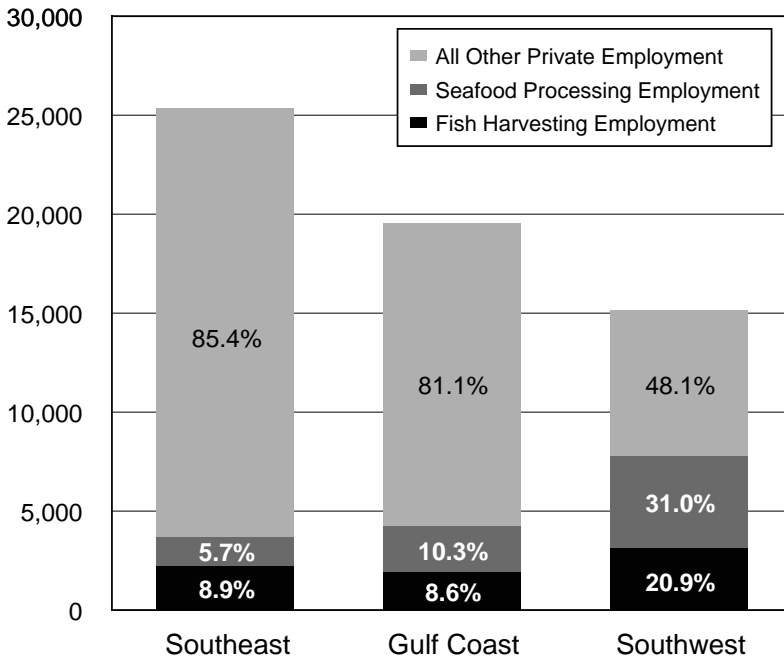
<sup>1</sup> "Private-sector employment" is defined here to mean all private wage and salary jobs combined with the fish harvesting employment discussed here. Self-employment, employment in industries not covered by state unemployment insurance laws and all other agricultural employment are excluded.

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



# 11 Private-Sector Employment By industry and region, Alaska 2005

Employment



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

What that means for employment numbers is that they will fluctuate up and down as higher and lower percentages of permits are fished, but that there can be no long-term expansion such as normally occurs in other industries in a growing economy. Under the most favorable economic conditions, there will be “full employment” in a fishery – meaning that all permits are being fished – but once that point is reached, no further growth is possible without structural or management changes.

In a different way, employment growth is also constrained in fisheries that are managed using a quota share system, such as halibut, sablefish and the BSAI crab fisheries. Unlike limited entry permits, quota shares guarantee the holder the right to harvest a certain percentage of the total allowable catch rather than just a right to participate in a competitive fishery. Quota shares can be bought and sold and are almost always fished since they represent a more tangible asset and

can be “stacked,” or fished in multiples from the same vessel for greater efficiency.

Often when a quota share management system is introduced, there’s an initial concentration of shares and employment as the more efficient producers acquire quota shares from the less efficient operations. As discussed earlier, this is the pattern the sablefish fishery followed and the halibut fishery seems to be following as well. Because the total percentage of the allowable catch isn’t free to grow, however – no more than 100 percent can ever be awarded – these fisheries don’t create additional harvesting jobs even when economic conditions are most favorable.

## An important slice of total private-sector jobs

Having said all that, the fish harvesting employment estimates published here can be considered at least roughly comparable to other industries’ job counts. (See the methodology section for more detail.) In 2005, seafood harvesting jobs accounted for 3.2 percent of all private-sector employment.<sup>8</sup> (See Exhibit 10.) When seafood processing’s 3.6 percent are added to harvesting, the combined fishing industry makes up 6.8 percent of Alaska’s private-sector employment.

For the Southeast, Gulf and Southwest regions, the fishing industry assumes an even greater economic importance. Seafood harvesting and processing employment combined accounted for 14.6 percent of all private-sector employment in Southeast, 18.9 percent in the Gulf Coast and fully 51.9 percent in the Southwest region in 2005. (See Exhibit 11.)

Overall, the fish harvesting employment estimates discussed in this article suggest a mildly improved picture in the salmon fisheries and, with a few important exceptions, general stability elsewhere.

<sup>8</sup> “Private-sector employment” is defined here to mean all private wage and salary jobs combined with the fish harvesting employment discussed here. Self-employment, employment in industries not covered by state unemployment insurance laws and all other agricultural employment are excluded.

## Methodology Notes

In other industries, the Alaska Department of Labor & Workforce Development can accurately count jobs because most employers are required to report the number of employees on their payrolls each month as part of their mandatory unemployment insurance coverage. But fish harvesting jobs are generally exempted from state unemployment insurance laws, and even if they weren't, they don't generate the payroll records used to calculate monthly employment in other industries.<sup>1</sup>

### Landings and crew factors

As a substitute for detailed payroll records, state and federal fish management agencies provide the Department of Labor with information on the specific "landings" made under each commercial fishing permit over the course of a year. A landing is the initial sale of harvested fish to a buyer. To create employment estimates from the landings, the Department of Labor uses "crew factors" developed from surveys and industry research in an attempt to quantify the labor needed to fish specific permits.

For example, the crew factor for a K91T permit – which is a permit to fish for king

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<sup>1</sup> Another reason why no employment data have been available for the fisheries is that the U.S. Bureau of Labor Statistics, which governs how employment is counted in the federal-state cooperative program called Current Employment Statistics, defines fishing as an agricultural activity and agricultural employment has traditionally been excluded from employment statistics under this program.

crab in Bristol Bay with pot gear on a vessel more than 60 feet long – is six, so if a landing is recorded under a K91T permit, six jobs are attributed to that permit. Each permit number is unique (the K91T permit used in this example is the type of permit rather than the permit number itself), which allows the Department of Labor to assign only one set of jobs to a specific permit in any given calendar month even if numerous landings are made during the month.<sup>2</sup>

The jobs are assigned by place of work rather than by the residence of the job holders. Most permits have a geographic designation as to where specific species can be harvested. In the above example using a K91T permit, the "T" stands for Bristol Bay. All landings made under that type of permit create employment assigned to Bristol Bay. Employment generated under permits that allow fishing anywhere in the state is assigned by a special harvest area code.

### The permit is the employer: a change in methodology

The fish harvesting employment numbers published in this article reflect a change in methodology from previous years' articles. The permit itself is being considered the employer, where in previous years the employer was considered to

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<sup>2</sup> The same approach to counting the number of monthly jobs is used for other industries in that a person who works 60 hours a week for a single employer is counted the same as a person who works 20 hours a week. Each is said to hold one job in that month.

be the permit holder. What this means is that a permit holder who makes landings under two different permits in the same month will generate two sets of jobs whereas before only one set would have been counted. The practical effect of this change in methodology is to increase the total employment count by roughly 10 percent.<sup>3</sup> Both approaches provide important information about fisheries employment, but counting the permit as the employer is believed to be a slightly better approximation of how jobs are counted in wage and salary employment numbers.

### Prep time not counted

The harvesting employment estimates are conservative in that they don't reflect any time spent by permit holders or their crew preparing to fish or winding up operations at the end of the season. Until a landing is made under a permit, no employment is tallied. So if the permit holder works for two weeks in May getting the boat ready to fish and then begins making landings in June, the efforts in May are not counted as employment despite their obvious importance to the enterprise. The Department of Labor is attempting to quantify preparation time in the various fisheries and hopes to include that information in future estimates.

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<sup>3</sup> All the data published here have been compiled using the permit as the employer so comparisons across time periods are still valid. What a user wouldn't want to do is compare the numbers published here for some years with the harvesting employment numbers published in previous articles for other years.