

Alaska's Commercial Fishing Employment

by Richard Kennedy

In 1991, the National Institute for Occupational Safety and Health (NIOSH) initiated a project to determine occupational injury rates in the Alaska commercial fishing industry. Accurate estimates of work force by major Alaska fisheries were needed by NIOSH to assess the magnitude of risk faced by fishers in order to compare rates to other Alaskan industries. The NIOSH project was completed in the fall of 1993. This article presents a summary of the findings of the NIOSH project.

Fisher workforce data scarce

Accurate estimates of the work force in the Alaska commercial fishing industry have always been unusually difficult to obtain. Unlike most other Alaska industries, the seafood industry's employment and payroll are not available on a regular basis through standard economic data systems and reports. The Alaska Department of Labor captures data on most of the Alaska's economy (including seafood processing) through a system of quarterly and monthly nonagricultural wage and salary estimates. One large segment of the industry which is not captured is seafood harvesting (commercial fishing) employment. The seafood harvesting sector is classified as agricultural, and the method of pay most often used (crew shares) does not fit the normal reporting system. A major consequence of this is a lack of regular employment estimates.

Published work force estimates for the Alaska commercial fishing industry for 1977 through 1984 were done by the Department of Labor in collaboration with the Alaska Commercial Fishing Entry Commission. The last fish harvesting employment estimates were done when the McDowell Corporation produced the *Alaska Seafood Industry Study* which presented an employment picture of the state's seafood industry for the year 1986.

Counting fishers is a difficult task

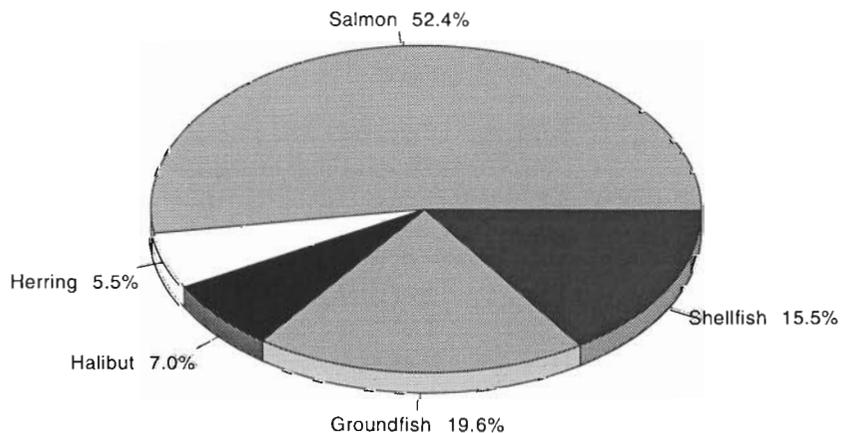
Research methods to obtain employment estimates have most often focused on a formula that includes the systematic counting of the number of fishing vessels, estimating the average vessel crew size by survey or expert opinion, and tallying the length of fishing season (months). To arrive at their estimations, the Alaska Department of Labor combined the number of permit holders who made landings at processors with an average crew size for each fishery and area.

The NIOSH project used a different methodology. The length of the fishing season included not only the actual time fishing, but time spent travelling to and from fishing grounds plus time expended in vessel prepara-

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Figure • 1

Most Alaska Fisher Employment is Generated by Salmon—1991



Source: National Institute for Occupational Safety and Health.

ration and offloading by skippers and crew. The resultant work force estimates were then expressed in terms of full-time equivalencies (FTEs). One fisher's FTE (independent of what position the person holds: vessel skipper or deckhand) is the equivalent of one fisher working one full year (52 weeks), or any permutation thereof (e.g., four fishers working 13 weeks each in the course of one calendar year).

Readers should note that these employment estimates cannot be readily compared to the Department of Labor's wage and salary figures because the department's figures are not FTE adjusted.

Fishers employment has grown

The recent NIOSH project estimated that for 1991 there were approximately 15,200 FTEs in the Alaska commercial fishing industry. (See Table 1.) This represents a 20% increase over the fisher employment reported by McDowell for 1986.

For 1991, the salmon fishery leads all Alaskan fisheries with 52.4% of the total harvesting employment. (See Figure 1.) The groundfish (primarily pollock and cod) fishery employed 19.5% of the fishers, with the shore-based harvester employment more than two and one-half times that of the offshore harvesters.

Employment totals in all major Alaskan fisheries increased between 1986 and 1991. (See Figure 2.) The most noticeable change in the Alaska commercial fishing industry occurred in the groundfish fishery. By 1991, all (legal) foreign off-shore fleet operations which had previously harvested most groundfish stocks in the North Pacific had been totally eliminated. Large-scale harvesting (primarily of groundfish, but in other species as well) has continued by a large, modern, and automated U.S. factory trawler fleet, predominately based out of Washington state. Still commonplace in the groundfish fishery is off-shore processing, with much of the product transferred to the buyer at sea or landed in ports outside Alaska. Some Alaska fisheries, such as salmon and herring, continue to have record harvests in one geographical region, while another region experiences very weak returns.

Factors contributing to an increase in the work force may be explained by changes in fisheries management and the diversification of undeveloped or market scarce target species. For example, the shellfish industry between 1986 and 1991 has seen a three-fold expansion in the harvesting of the tanner crab, while harvest statistics for king and dungeness crab were approximately level. Increases in the 1991 work force estimates for salmon and herring may be due, in part, to 1) a slight increase in the number of

T a b l e • 1

Employment in Commercial Fisheries Increased Between 1986 and 1991

Fishery/Gear	1986 Employment	1991 Employment	Percent Change
Salmon			
Purse Seine	1,690	1,712	1.3
Drift Gill Net	2,502	2,657	6.2
Set Gill Net	1,747	2,542	45.5
Power Troll	655	700	6.9
Hand Troll	198	268	35.4
Others	44	53	...
Total	6,836	7,932	16.0
Herring			
Purse Seine	233	284	21.9
Gill Net	338	386	14.2
Spawn	...	164	...
Other	...	6	...
Total	571	840	47.1
Halibut	1,012	1,057	4.4
Shellfish	1,857	2,351	26.6
Groundfish	2,345	2,958	26.1
Miscellaneous	...	62	..
Grand Total	12,621	15,200	20.4

Source: National Institute for Occupational Safety and Health and Alaska Seafood Industry Study, McDowell Corporation.

vessels licensed to catch salmon (2%) and herring (18%), and 2) the methodology used whereby more pre- and post-fishing time was awarded for the 1991 fishery. In spite of the decline of the length of fishing seasons for many fisheries, the commercial fishing workforce actually expanded over the five-year period.

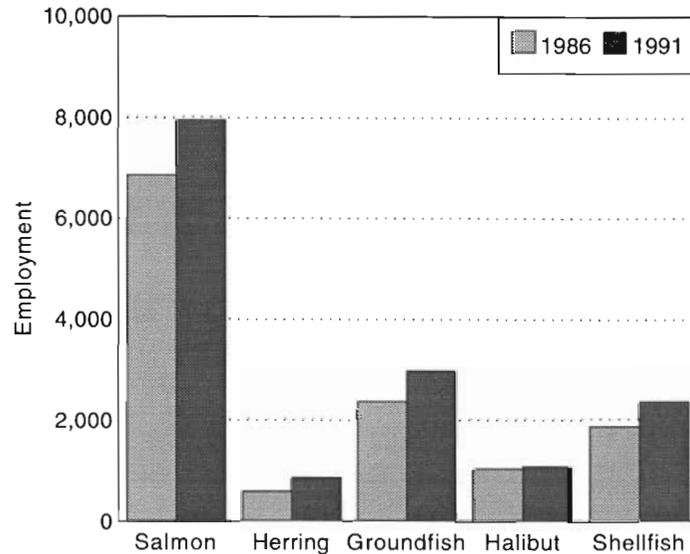
A more detailed comparison of the workforce in the state's salmon and herring fisheries between 1986 and 1991 may be made by examining differences in employment by gear type. Fishing vessel gear type is a general description for the fish harvest equipment used aboard fishing vessels. Common gear types in Alaska include long lines, pots, and nets.

The five-year annualized growth for the salmon fishery is approximately 3% per year, with nearly half (45%) occurring in the set gill net fishery. The FTEs for all gear types for the herring fishery increased from 1986 to 1991, probably reflecting the approximately 300 additional vessels and crew that entered the fishery since 1986.

There are data limitations

There are at least two major limitations to the results of the NIOSH study: 1) the definition and calculations of pre- and post-fishing time; 2) the reliability of participating crew and vessel-time-at-sea estimates for the offshore groundfish fishery. Researchers used survey and anecdotal information from a sample of vessel owners, skippers, former and current fishers, and industry officials to estimate the average number of days or weeks individual fishing vessels crews spent in work-related activities outside actual time spent fishing. Results from this sample (approximately 25% of the total fleet) survey

Fisher Employment Has Grown in All Fisheries



Source: National Institute for Occupational Safety and Health.

varied widely, depending on the home port of the vessel, the number of 'regular' crew, and size and gear of the vessel. The lack of detailed computerized information for the 1991 offshore groundfish fishery complicated the data analysis for this fishery.

Readers should exercise caution in drawing inference from these findings. Random error, as well as sampling error, in at least two variables (number of crew allotted per vessel and amount of pre- and post-fishing time) may substantially affect individual results.