STOCK ASSESSMENT AND FISHERY EVALUATION REPORT FOR THE GROUNDFISH FISHERIES OF THE GULF OF ALASKA AND BERING SEA/ALEUTIAN ISLAND AREA:

ECONOMIC STATUS OF THE GROUNDFISH FISHERIES OFF ALASKA, 2003

by

Terry Hiatt, Ron Felthoven, Chang Seung and Joe Terry

Economic and Social Sciences Research Program
Resource Ecology and Fisheries Management Division
Alaska Fisheries Science Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
7600 Sand Point Way N.E.
Seattle, Washington 98115-6349

November 19, 2004

This report will be available at:

http://www.afsc.noaa.gov/refm/docs/2004/economic.pdf

For additional information concerning this report contact:

Terry Hiatt
Resource Ecology and Fisheries Management Division
Alaska Fisheries Science Center
7600 Sand Point Way N.E.
Seattle, Washington 98115-6349
(206) 526-6414
terry.hiatt@noaa.gov

ABSTRACT

The domestic groundfish fishery off Alaska is an important segment of the U.S. fishing industry. This report contains figures and tables which summarize various aspects of the economic performance of the fishery. Generally, data are presented for the domestic groundfish fishery for 1999 through 2003. Limited catch and ex-vessel value data are reported for earlier years in order to depict the rapid development of the domestic groundfish fishery in the 1980s and to provide a more complete historical perspective on catch. Pacific halibut (*Hippoglossus stenolepis*) is not included in data for the groundfish fishery in this report because for management purposes halibut is not part of the groundfish complex.

The report provides estimates of total groundfish catch, groundfish discards and discard rates, prohibited species bycatch and bycatch rates, the ex-vessel value of the groundfish catch, the ex-vessel value of the catch in other Alaska fisheries, the gross product value (F.O.B. Alaska) of the resulting groundfish seafood products, the number and sizes of vessels that participated in the Alaska groundfish fisheries, vessel activity, and employment on at-sea processors.

In addition, this report contains data on some of the external factors which, in part, determine the economic status of the fisheries. Such factors include foreign exchange rates, the prices and price indexes of products that compete with products from these fisheries, domestic per capita consumption of seafood products, and fishery imports. This report contains regional economic analysis.

The estimates in this report are intended both to provide information that can be used to describe the Alaska groundfish fisheries and to provide industry and others an opportunity to comment on the validity of these estimates.

INTENTIONALLY LEFT BLANK

CONTENTS

INTENTIONALLY LEFT BLANK

List of Figures

List of Tables

INTRODUCTION

The domestic groundfish fishery off Alaska is an important segment of the U.S. fishing industry. With a total catch of 2.2 million metric tons (t), a retained catch of 2.0 million t, and an ex-vessel value of $608 million in 2003, it accounted for 51% of the weight and 18% of the ex-vessel value of total U.S. domestic landings as reported in Fisheries of the United States, 2003. The value of the 2003 catch after primary processing was approximately $1.5 billion (F.O.B. Alaska).

All but a small part of the commercial groundfish catch off Alaska occurs in the groundfish fisheries managed under the Fishery Management Plans (FMP) for the Gulf of Alaska (GOA) and the Bering Sea/Aleutian Islands area (BSAI) groundfish fisheries. In 2003, other fisheries accounted for only about 3,000 t of the catch reported above. The footnotes for each table indicate if the estimates provided in that table are only for the fisheries with catch that is counted against federal TACs or if they also include other Alaska groundfish fisheries.

The fishery management and development policies for the BSAI and GOA groundfish fisheries have resulted in high levels of catch, ex-vessel value (i.e., revenue), processed product value (i.e., revenue), exports, employment, and other measures of economic activity. The cost data required to estimate the success of these policies with respect to net benefits to either the participants in these fisheries or the Nation are not available. However, the use of the race for fish as a principal mechanism for allocating the groundfish quotas and prohibited species catch (PSC) limits among competing fishing operations has adversely affected at least some aspects of the economic performance of the fisheries. The individual fishing quota (IFQ) program for the fixed gear sablefish fishery, the Western Alaska Community Development Quota (CDQ) program for BSAI groundfish, and the American Fisheries Act (AFA) cooperatives for the BSAI pollock fishery have demonstrated that eliminating the race for fish as the allocation mechanism and replacing it with a market-based allocation mechanism can decrease harvesting and processing costs, increase the value of the groundfish catch, and, in some cases, decrease the cost of providing more protection for target species, non-target species, marine mammals, and seabirds. It is anticipated that the current plan to rationalize the BSAI crab fisheries will generate many of the same benefits. However, the distribution of net benefits and the magnitude of net benefits to the Nation resulting from such programs are difficult to measure. As with most management measures, there are winners and losers.

This report presents the economic status of groundfish fisheries off Alaska in terms of economic activity and outputs using estimates of catch, bycatch, ex-vessel prices and value (i.e., revenue), the size and level of activity of the groundfish fleet, and the weight and gross value of (i.e., F.O.B. Alaska revenue from) processed products. The catch, ex-vessel value, and fleet size and activity data are for the fishing industry activities that are reflected in Weekly Production Reports, Observer Reports, fish tickets, and the Commercial Operators' Annual Reports. All catch data reported for 1991-2002 are based on the blend estimates of total catch, which were

used by the National Marine Fisheries Service (NMFS) to monitor groundfish and PSC quotas in those years. Year 2003 catch data come from NMFS's new catch accounting system, which replaces the blend as the primary tool for monitoring groundfish and PSC quotas.

A variety of external factors influence the economic status of the fisheries. Therefore, information concerning the following external factors are included in this report: foreign exchange rates, the prices and price indexes of products that compete with products from these fisheries, gross domestic product implicit price deflators, and fishery imports. This report updates last year's report (Hiatt et al. 2003) and is intended to serve as a reference document for those involved in making decisions with respect to conservation, management, and use of GOA and BSAI fishery resources.

In addition, this report provides information concerning the importance of seafood processing in Alaska to regional economic activity in Alaska in terms of the following: (1) the percentage of total employment in a region accounted for by seafood processing employment, (2) labor earnings in seafood processing as a percentage of total regional labor earnings, (3) multipliers for an example Alaska region, Kodiak Island Borough, and (4) economic base analysis for eleven selected fishery-dependent areas using employment and labor income multipliers. Subsequent analyses will address the importance of other sectors of the fishing industry to regional economic activity in Alaska and in other states.

In the past two reports we included annual estimates of groundfish fishing capacity, capacity utilization, and fishery utilization for the vessels that participated in federally managed commercial fisheries off Alaska. However, we decided not to construct these measures for 2003 given concerns we had over the way we had been delineating vessel subgroups (or "fleets"), and determining the number of weeks each vessel spent in particular fisheries. During the following year we plan to overhaul our methods so that we can provide a coherent, consistent and well-defined set of annual estimates for future reports. This will allow us to track changes in fishing capacity and utilization over time so that changes in these measures represent true changes in these values, and not changes in makeup of the subgroups or the way records are handled. It is our intent to make these estimates a permanent part of this report, but due to time constraints we could not refine our methods and re-estimate the measures for every year using the modified approach. We will undertake this task during the following year.

The qualifications made in both the overview of the fisheries and the footnotes to the tables are critical to understanding the information contained in this report.

The estimates in this report are intended both to provide information that can be used to describe the Alaska groundfish fisheries and to provide the industry and others an opportunity to comment on the validity of these estimates. It is hoped that the industry and others will identify estimates in this report that can be improved and provide the information and methods necessary to improve them for both past and future years. There are two reasons why it is important that such improvements be made. First, with better estimates, the report will be more successful in

monitoring the economic performance of the fisheries and in identifying changes in economic performance that should be addressed through regulatory actions. Second, the estimates in this report often will be used as the basis for estimating the effects of proposed fishery management actions. Therefore, improved estimates in this report will allow more informed decisions by those involved in managing and conducting the Alaska groundfish fisheries. The industry and other stakeholders in these fisheries can further improve the usefulness of this report by suggesting other measures of economic performance that should be included in the report or other ways of summarizing the data that are the basis for this report.

OVERVIEW

The commercial groundfish catch off Alaska totaled 2.2 million t in 2003, compared to 2.1 million t in 2002 (Fig. 1 and Table 1). The real ex-vessel value of the catch, excluding the value added by at-sea processing, decreased from $630 million in 2002 to $608 million in 2003 (Fig. 3 and Table 2.1). The gross value of the 2003 catch after primary processing was approximately $1.5 billion (F.O.B. Alaska). The groundfish fisheries accounted for the largest share (54%) of the ex-vessel value of all commercial fisheries off Alaska in 2003 (Fig. 4, Tables 2.1 and 2.2), while the shellfish fishery was second with $175 million or 16% of the total Alaska ex-vessel value. The value of the Pacific salmon (Oncorhynchus spp.) catch amounted to $168 million or 15% of the total for Alaska and exceeded the ex-vessel value of Pacific halibut (Hippoglossus stenolepis) by just $2.2 million. The decline in the ex-vessel value of the salmon catch in the last several years is the result of low prices paid to salmon fishers due largely to competition from farmed salmon.

During the last 15 years, estimated total catch in the commercial groundfish fisheries off Alaska (including foreign and joint venture fisheries as well as the domestic fishery) varied between 1.7 and 2.4 million t (Fig. 1 and Table 1). The rapid displacement of the foreign and joint-venture fisheries by the domestic fishery between 1984 and 1991 can be seen by comparing Figures 1 and 2. By 1991, the domestic fishery accounted for all of the commercial groundfish catch off Alaska.

The peak catch occurred in 1991, in part, because blend estimates of catch and bycatch were not yet used to monitor most quotas. If they had been, several fisheries would have been closed earlier in the year. There are three reasons why the catch estimates for 1988 through 1990 have a significant downward bias compared to the estimates for the other years. First, the domestic fishery accounted for a large part of total catch in 1988 through 1990. Second, discards were not included in the reported estimates of domestic catch prior to 1991, but they were included in the catch estimates for the foreign and joint venture fisheries. Based on estimates of the discard rates for 1992 through 1995, discards would have been about 16% of total catch. Finally, the blend estimates of catch, excluding at-sea discards, tend to exceed the estimates based solely on industry reports and, prior to 1991, only industry reports were used to estimate retained catch in the domestic fishery. Variations in the catch estimates also reflect changes in the total allowable

catch (TAC), area closures or restrictions, and bycatch restrictions.

The information provided by the Observer Program has had a key role in the success of the groundfish management regime. For example, it would not be possible to monitor total allowable catches (TACs) in terms of total catch without Observer Program data. Similarly, the PSC limits, which have been a key factor in controlling the bycatch of prohibited species, could not be used without the Observer Program. In recent years, the reliance on observer data for individual vessel accounting is of particular importance in the management of the CDQ program and AFA fisheries. In addition, much of the information that is used to assess the status of groundfish stocks, to monitor the interactions between the groundfish fishery and marine mammals and sea birds, and to analyze fishery management actions is provided by the Observer Program. Estimates of the numbers of vessels and plants with observers, observer-deployment days, and estimated observer costs by year and type of operation for 2001-2002 are presented in Table 3 (not updated for 2003).

Walleye (Alaska) pollock (*Theragra chalcogramma*) has been the dominant species in the commercial groundfish catch off Alaska. The 2003 pollock catch of 1.54 million t accounted for 71% of the total groundfish catch of 2.2 million t (Table 1). The pollock catch was up approximately 0.5% from 2002. The next major species, Pacific cod (*Gadus macrocephalus*), accounted for 261,600 t or 12.1% of the total 2003 groundfish catch. The Pacific cod catch was up about 9.4% from a year earlier. The 2003 catch of flatfish, which includes yellowfin sole (*Pleuronectes asper*), rock sole (*Pleuronectes bilineatus*), and arrowtooth flounder (*Atheresthes stomias*) was 201,300 t, up about 2.4% from 2002. Pollock, Pacific cod, and flatfish comprised almost 93% of the total 2003 catch. Other important species are sablefish (*Anoplopoma fimbria*), rockfish (*Sebastes* and *Sebastolobus spp.*), and Atka mackerel (*Pleurogrammus monopterygius*). The contributions of the major groundfish species or species groups to the total catch in the domestic groundfish fisheries off Alaska are depicted in Fig. 2.

Trawl, hook and line (including longline and jigs), and pot gear account for virtually all the catch in the BSAI and GOA groundfish fisheries. There are catcher vessels and catcher/processor vessels for each of these three gear groups. Table 4 presents catch data by area, gear, vessel type, and species. The catch data in Table 4 and the catch, ex-vessel value, and vessel information in the tables of the rest of this report are for the BSAI and GOA FMP fisheries, unless otherwise indicated.

In the last five years, the trawl catch averaged about 90% of the total catch, while the catch with hook and line gear accounted for 8.1%. Most species are harvested predominately by one type of gear, which typically accounts for 90% or more of the catch. The one exception is Pacific cod, where in 2003, 37% (98,000 t) was taken by trawls, 46% (121,000 t) by hook and line gear, and 16% (43,000 t) by pots. In each of the years since 1999, catcher vessels took about 47% of the total catch and catcher/processors took the other 53%. That increase from years prior to 1999 (not shown in Table 4) is explained in part by the AFA, which among other things increased the share of the BSAI pollock TAC allocated to catcher vessels delivering to shoreside processors.

The distribution of catch between catcher vessels and catcher/processor vessels differed substantially by species and area.

The discards of groundfish in the groundfish fishery have received increased attention in recent years by NMFS, the Council, Congress, and the public at large. Table 5 presents the blend (1999-2002) and catch accounting system (2003) estimates of the discarded groundfish catch and discard rates by gear, area, and species. The discard rate is the percent of total catch that is discarded.

Although these are the best available estimates of discards and are used for several management purposes, these estimates are not necessarily accurate. The groundfish TACs are established and monitored in terms of total catch, not retained catch; this means that both retained catch and discarded catch are counted against the TACs. Therefore, the estimation methods used by at-sea observers focus on providing good estimates of total catch by species, not on the disposition of that catch. Observers on vessels sample randomly chosen catches for species composition. For each sampled haul, they also make a rough visual approximation of the weight of the non-prohibited species in their samples that are being retained by the vessel. This is expressed as the percent of that species that is retained. Approximating this percentage is difficult because discards occur in a variety of places on fishing vessels. Discards include fish falling off of processing conveyor belts, dumping of large portions of nets before bringing them on-board the vessel, dumping fish from the decks, size sorting by crewmen, quality control discard, etc. Because observers can only be in one place at a time, they can provide only this rough approximation based on their visual observations rather than data from direct sampling. The discard estimate derived by expanding these approximations from sampled hauls to the remainder of the catch may be inaccurate because the approximation may be inaccurate. The numbers derived from the observer discard approximation can provide users with some information as to the disposition of the catch, but the discard numbers should not be treated as sound estimates. At best, they should be considered a rough gauge of the quantity of discard occurring.

For the BSAI and GOA fisheries as a whole, the annual discard rate for groundfish decreased from 9.4% in 1999 to 6.2% in 2001, increased slightly to 6.8% in 2002, and then decreased again to 6.7% in 2003. The overall discard rate in 1999 represents a 35% reduction from the 1997 rate (not shown in Table 5), a result of prohibiting pollock and Pacific cod discards in all BSAI and GOA groundfish fisheries beginning in 1998. Total discards decreased by about 48% from 1997 to 1999 due to the reduction in the discard rate and a 19.8% reduction in total catch. The prohibition was so effective in decreasing the overall discard rate because the discards of these two species had accounted for 43% of the overall discards in 1997. The benefits and costs of the reduction in discards since 1997 have not been determined. In 2003, the overall discard rates were 15.6% and 5.8%, respectively, for the GOA and the BSAI compared to 16.2% and 14.3% in 1997.

Although the fixed gear fisheries accounted for a small part of either total catch or total discards,

in 1998 and later years, the overall discard rates were substantially higher for fixed gear (10.1% in 2003) than for trawl gear (6.3% in 2003). Prior to 1998, the overall discard rates had been similar for these two gear groups. This change occurred because the prohibition on pollock and Pacific cod discards had a much larger effect on trawl discards than on fixed gear discards. In the BSAI, the 2003 discard rates were 11.4% and 5.3% for fixed and trawl gear, respectively. In the GOA, however, the corresponding discard rates were 6.0% and 19.2%. One explanation for the relatively low discard rates for the BSAI trawl fishery is the dominance of the pollock fishery with very low discard rates. The mortality rates of groundfish that are discarded are thought to differ by gear or species; however, estimates of groundfish discard mortality are not available.

Target fisheries are defined by area, gear and target species. The target designations are used to estimate prohibited species catch (PSC), to apportion PSC limits by fishery (i.e., establish PSC allowances by fishery) and to monitor those PSC allowances. The target fishery designations can also be used to provide estimates of catch and bycatch data by fishery. The blend catch data are assigned to a target fishery by processor, week, area, and gear. The new catch accounting system, which replaced the blend as the primary source of catch data in 2003, assigns the target at the trip level rather than weekly, except for the approximately 4% of total catch that comes from NMFS Weekly Production Reports (WPR). CDQ fishing activity is targeted separately from non-CDQ fishing. Generally, the species or species group that accounts for the largest proportion of the retained catch of the TAC species is considered the target species. One exception to the dominant retained catch rule is that the target for the pelagic pollock fishery is assigned if 95 percent or more of the total catch is pollock.

Tables 6 and 7, 8 and 9, and 10 and 11, respectively, provide estimates of total catch, discarded catch, and discard rates by species, area, gear, and target fishery. Within each area or gear type, there are substantial differences in discard rates among target fisheries. Similarly, within a target fishery, there are often substantial differences in discard rates by species. Typically, in each target fishery the discard rates are very high except for the target species. The regulatory exceptions to the prohibition on pollock and Pacific cod discards explain, in part, why there are still high discard rates for these two species in some fisheries.

The bycatch of Pacific halibut, crab, Pacific salmon, and Pacific herring (*Clupea pallasi*) has been an important management issue for more than twenty years. The retention of these species was prohibited first in the foreign groundfish fisheries. This was done to ensure that groundfish fishermen had no incentive to target these species. Estimates of the bycatch of these prohibited species for 2000-03 are summarized by area and gear in Table 12. More detailed estimates of prohibited species bycatch and of bycatch rates for 2002 and 2003 are in Tables 13 - 16. The estimates for halibut are in terms of bycatch mortality because the bycatch limits for halibut are set and monitored using estimated discard mortality rates. The estimates for the other prohibited species are of total bycatch, this is in part due to the lack of well established discard mortality rates for these species. The discard mortality rates probably approach 100% for salmon and herring in the groundfish fishery as a whole; the discard mortality rates for crab, however, may be substantially lower.

An extensive at-sea observer program was developed for the foreign fleets and then extended to the domestic fishery once it had all but replaced participation by foreign fishing and processing vessels. The observer program resulted in fundamental changes in the nature of the bycatch problem. First, by providing good estimates of total groundfish catch and non-groundfish bycatch by species, it eliminated much of the concern that total fishing mortality was being underestimated due to fish that were discarded at sea. Second, it made it possible to establish, monitor and enforce the groundfish quotas in terms of total catch as opposed to only retained catch. Third, it made it possible to implement and enforce bycatch quotas for the non-groundfish species that by regulation had to be discarded at sea. Finally, it provided extensive information that managers and the industry could use to assess methods to reduce bycatch and bycatch mortality. In summary, the observer program provided fishery managers with the information and tools necessary to prevent bycatch from adversely affecting the stocks of the bycatch species. Therefore, the bycatch in the groundfish fishery is principally not a conservation problem but it can be an allocation problem. Although this does not make it less controversial, it does help identify the types of information and management measures that are required to reduce bycatch to the extent practicable, as is required by the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

Residents of Alaska and of other states, particularly Washington and Oregon, are active participants in the BSAI and GOA groundfish fisheries. Catch data by residency of vessel owners are presented in Table 17. These data were extracted from the NMFS blend and catch accounting system catch databases and from the State of Alaska groundfish fish ticket database and vessel-registration file which includes the stated residency of each vessel owner. For the domestic groundfish fishery as a whole, 95% of the 2003 catch was made by vessels with owners who indicated that they were not residents of Alaska. The catches of the two vessel-residence groups were much closer to being equal in the Gulf where Alaskan vessels accounted for the majority of the Pacific cod catch.

Table 18 contains the estimated ex-vessel prices that were used with estimates of retained catch to calculate ex-vessel values. The estimates of ex-vessel value by area, gear, type of vessel, and species are in Table 19. The ex-vessel value of the domestic landings in the FMP fisheries, excluding the value added by at-sea processing, increased from $462 million in 1999 to $597 million in 2000, decreased in 2001 to $585 million, increased to $618 million in 2002, and decreased again to $608 million in 2003. The distribution of ex-vessel value by type of vessel differed by area, gear and species. In 2003, catcher vessels accounted for 54% of the ex-vessel value of the groundfish landings compared to 47% of the total catch because catcher vessels take larger percentages of higher-priced species such as sablefish, which was $2.37 per pound in 2003. Similarly, trawl gear accounted for only 70% of the total ex-vessel value compared to 90% of the catch because much of the trawl catch is of low-priced species such as pollock, which was about $0.11 per pound in 2003.

Tables 20 and 20.1 summarize the ex-vessel value of catch delivered to shoreside processors by vessel-size class, gear, and area. Table 20 gives the total ex-vessel value in each category and

Table 20.1 gives the ex-vessel value per vessel. The relative dominance of each of the three vessel size classes differs by area and by gear.

Table 21 provides estimates of ex-vessel value by residency of vessel owners, area, and species. For the BSAI and GOA combined, 86.9% of the 2003 ex-vessel value was accounted for by vessels with owners who indicated that they were not residents of Alaska. Vessels with owners who indicated that they were residents of Alaska accounted for 13% of the total and the remainder was taken by vessels for which the residence of the owner was not known. The vessels owned by residents of Alaska accounted for a much larger share of the ex-vessel value than of catch (13% compared to 5.3%) because these vessels accounted for relatively large shares of the higher-priced species such as sablefish.

Table 22 presents estimates of ex-vessel value of catch delivered to shoreside processors, and Table 22.1 gives the ex-vessel value of groundfish as a percentage of the ex-vessel value of all species delivered to shoreside processors. The data in both tables, which include both state and federally managed groundfish, are reported by processor group, which is a classification of shoreside processors based primarily on their geographical locations. The processor groups are described in the footnote to the tables.

Gross product value (F.O.B. Alaska) data, through primary processing, are summarized by category of processor and by area in Table 23, and by catcher/processor size class, gear, and area in Table 24. Table 24.1 reports gross product value per vessel, categorized in the same way as Table 24. Tables 25 and 25.1 present gross product value of groundfish processed by shoreside processors and the groundfish gross product value as a percentage of all-species gross product value, with both tables broken down by processor group. The processor groups are the same as in Tables 22 and 22.1 and no distinction is made between groundfish catch from the state and federally managed groundfish fisheries.

Although at-sea processors were required to complete the Alaska Department of Fish and Game (ADF&G) Commercial Operators' Annual Report (COAR) beginning last year, the estimates of gross product value (i.e., revenue) for at-sea processors in 2002 and 2003 are calculated the same as in previous years in order to provide a comparison of the estimates from year to year. These estimates are based on COAR product price data (submitted voluntarily by at-sea processors for activity through 2001) and on product quantity data in the WPR. Beginning with the 2001 report (Hiatt et al. 2001), the estimates of gross product value for shoreside processors were based on COAR product price and quantity data. Prior to that, the estimates for all processors were based on COAR price data and WPR product quantity data.

Estimates of the numbers and net registered tonnage of vessels in the groundfish fisheries are presented by area and gear in Table 26 and estimates of the numbers of vessels that landed groundfish are depicted in Fig. 6 by gear type. More detailed information on the BSAI and GOA groundfish vessels by type of vessel, vessel size class, catch amount classes, and residency of vessel owners is in Tables 27 - 31. In particular, Table 28.1 gives detailed estimates of the

numbers of smaller (less than 60 feet) hook-and-line catcher vessels. Estimates of the number of vessels by month, gear, and area are in Table 32. Table 33 provides estimates of the number of catcher vessel weeks by size class, area, gear, and target fishery. Table 34 contains similar information for catcher/processor vessels.

For the purposes of Regulatory Flexibility Act analyses, a business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of $3.5 million for all its affiliated operations worldwide. The information necessary to determine if a vessel is independently owned and operated and had gross earnings of less than $3.5 million, is not available. However, by using estimates of Alaska groundfish revenue by vessel, it is possible to identify vessels that clearly are not small entities. Estimates of both the numbers of fishing vessels that clearly are not small entities and the numbers of fishing vessels that could be small entities are presented in Tables 26.1 and 26.2, respectively. With more complete revenue, ownership and affiliation information, some of the vessels included in Table 26.2 would be determined to be large entities. Estimates of the average revenue per vessel for the vessels in Tables 26.1 and 26.2, respectively, are presented in Tables 26.3 and 26.4.

The Weekly Production Reports include employment data for at-sea processors but not inshore processors. Those data are summarized in Table 35 by month and area. The data indicate that in 2003, the crew weeks totaled 107,365 with the majority of them (101,775) occurring in the BSAI groundfish fishery. In 2003, the maximum monthly employment (18,751) occurred in March. Much of this was accounted for by the BSAI pollock fishery.

Estimates of weight and value of the processed products made with BSAI and GOA groundfish catch are presented by species, product form, area, and type of processor in Tables 36, 37 and 38. Product price-per-pound estimates are presented in Table 36.1, and estimates of total product value per round metric ton of retained catch (first wholesale prices) are reported in Table 36.2 .

There are a variety of at least partially external factors that affect the economic performance of the BSAI and GOA groundfish fisheries. They include landing market prices in Japan, wholesale prices in Japan, U.S. imports of groundfish products, U.S. per capita consumption of seafood, U.S. consumer and producer price indexes and foreign exchange rates. Such data are included in Tables 39 - 47. U.S. cold-storage holdings data, which were published in Tables 48 and 49 of this report in previous years, have not been collected by NMFS since the end of 2002. The availability of cold-storage holdings data depends on the cooperation of industry in the form of voluntary reporting, which has declined to the extent that reports compiled from the data are no longer accurate or useful. Consequently, Tables 48 and 49 have been omitted from this report, but the pre-2003 levels may be found in earlier reports.

Exchange rates and world supplies of fishery products play a major role in international trade. Exchange rates change rapidly and can significantly affect the economic status of the groundfish fisheries. There is also considerable uncertainty concerning the future conditions of stocks, the

resulting quotas, and future changes to the fishery management regimes for the BSAI and GOA groundfish fisheries. The management actions taken to allocate the catch between various user groups can significantly affect the economic health of either the domestic fishery as a whole or segments of the fishery. Changes in fishery management measures are expected as the result of continued concerns with: 1) the bycatch of prohibited species; 2) the discard and utilization of groundfish catch; 3) the effects of the groundfish fisheries on marine mammals and sea birds; 4) other effects of the groundfish fisheries on the ecosystem and habitat; 5) excess harvesting and processing capacity; and 6) the allocations of groundfish quotas among user groups.

CITATIONS

Hiatt, Terry, Ron Felthoven, Chang Seung and Joe Terry. Stock assessment and fishery evaluation report for the groundfish fisheries of the Gulf of Alaska and Bering Sea/Aleutian Island area: economic status of the groundfish fisheries off Alaska, NPFMC, November 2003. http://www.afsc.noaa.gov/refm/docs/2003/economic.pdf

National Marine Fisheries Service. 2004. Fisheries of the United States, 2003. www.st.nmfs.gov/st1/fus/fus03/index.html

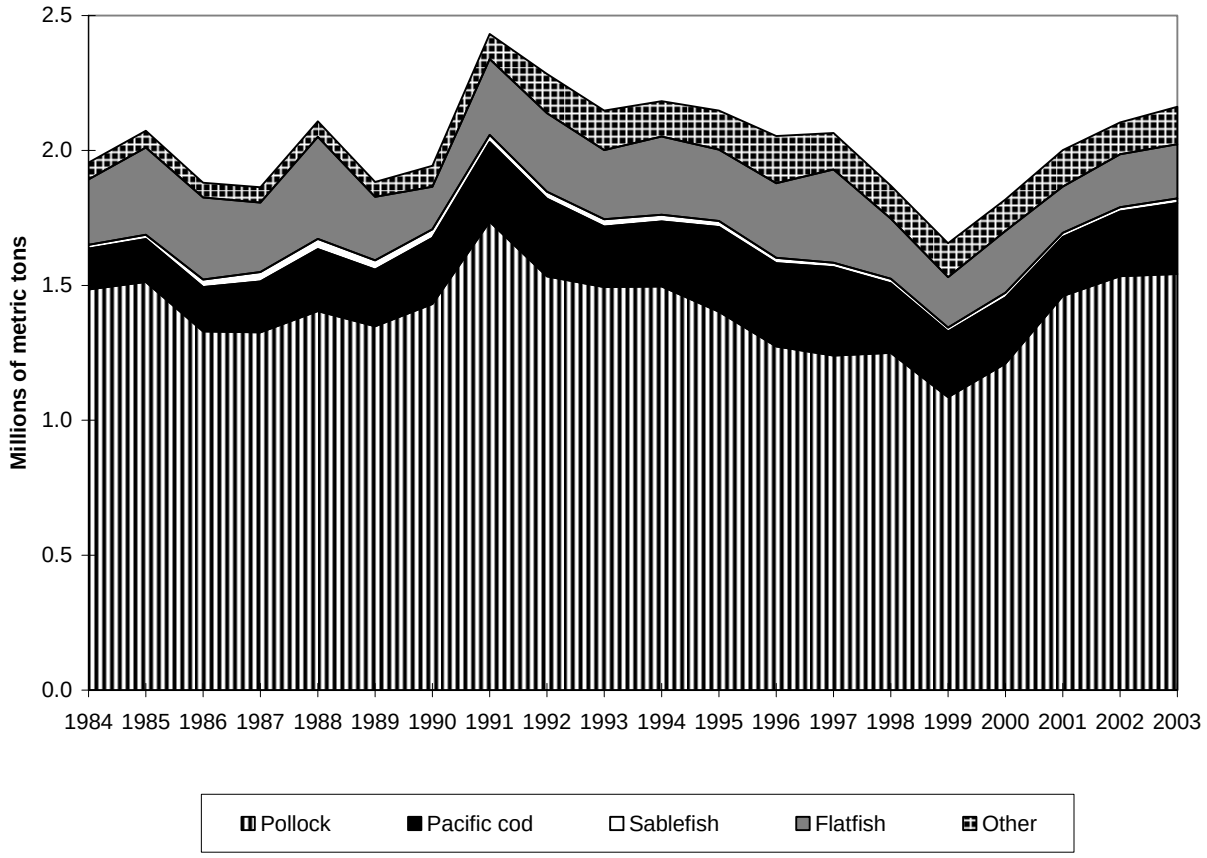


Figure 1. Groundfish catch in the commercial fisheries off Alaska by species, 1984-2003.

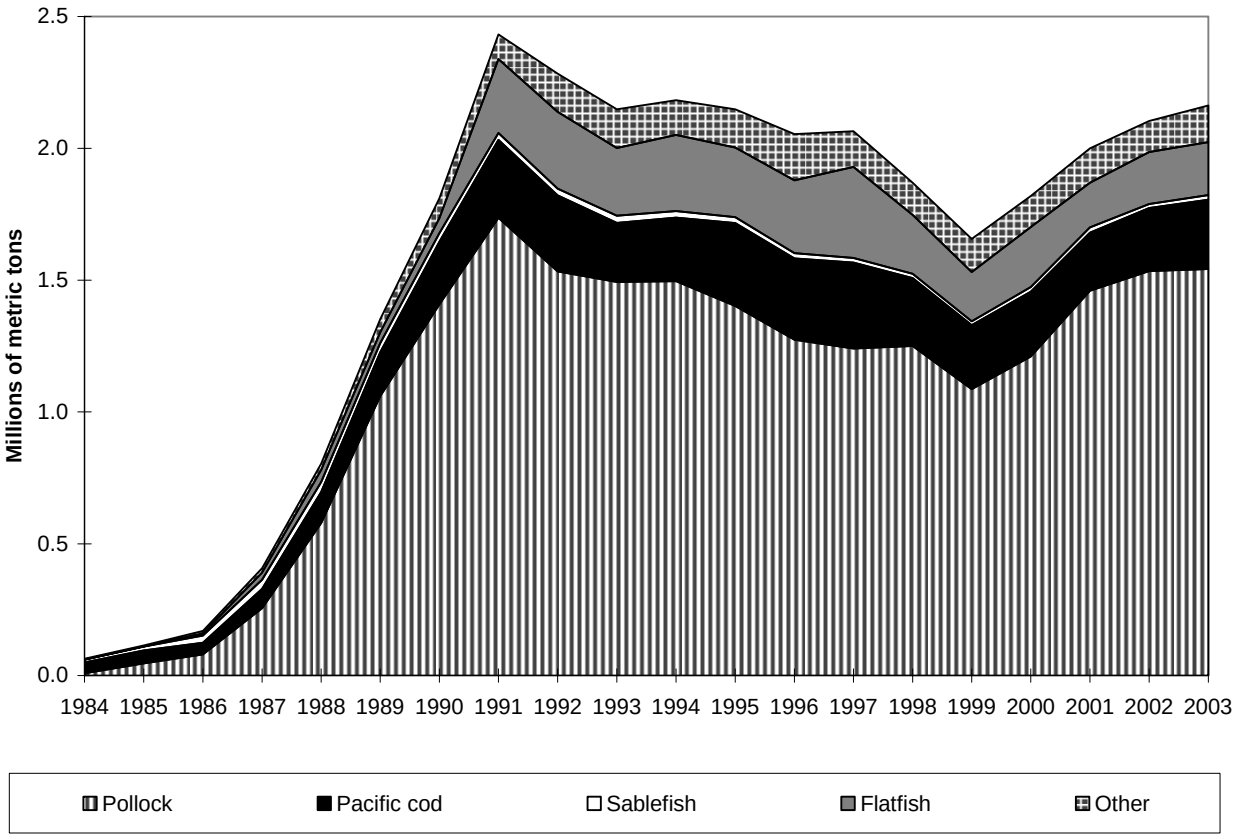


Figure 2. Groundfish catch in the domestic commercial fisheries off Alaska by species, 1984-2003.

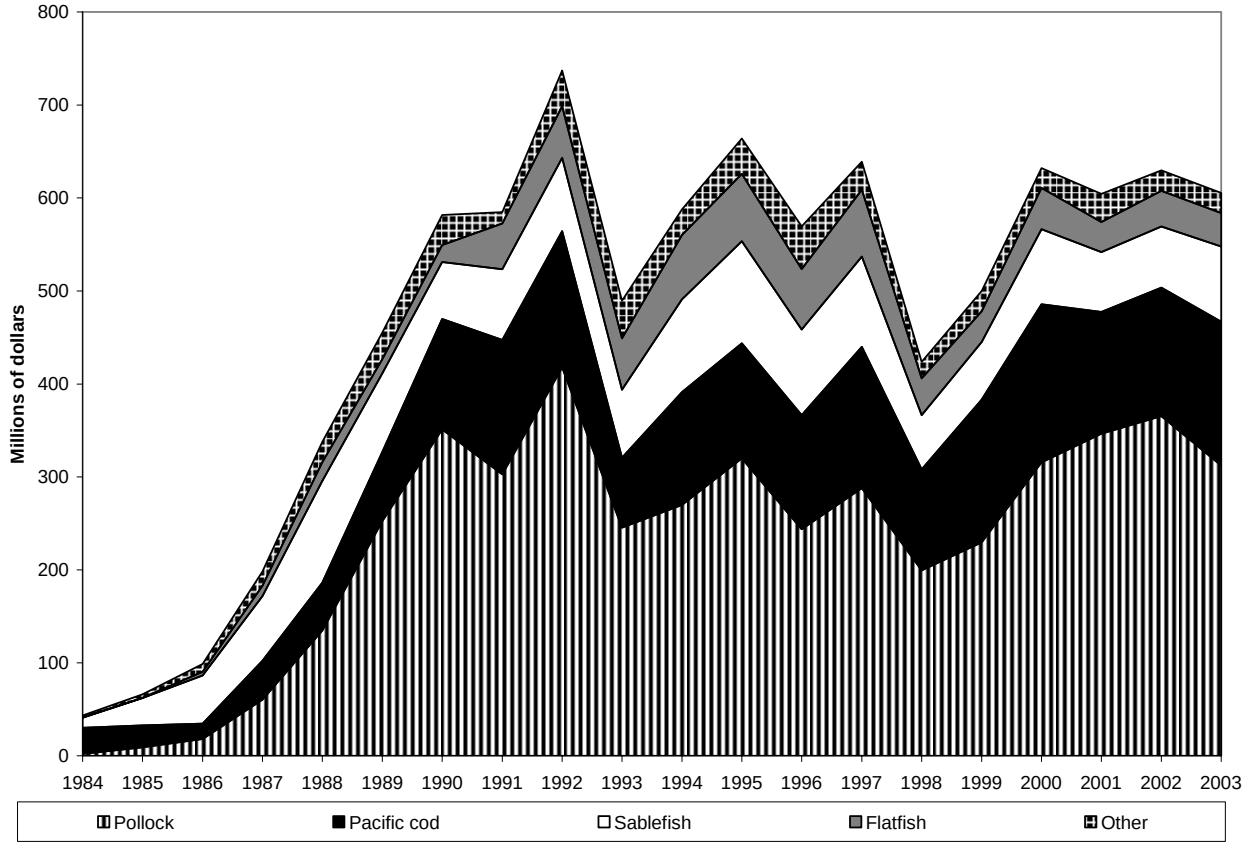


Figure 3. Real ex-vessel value of the groundfish catch in the domestic commercial fisheries off Alaska by species, 1984-2003 (base year = 2003).

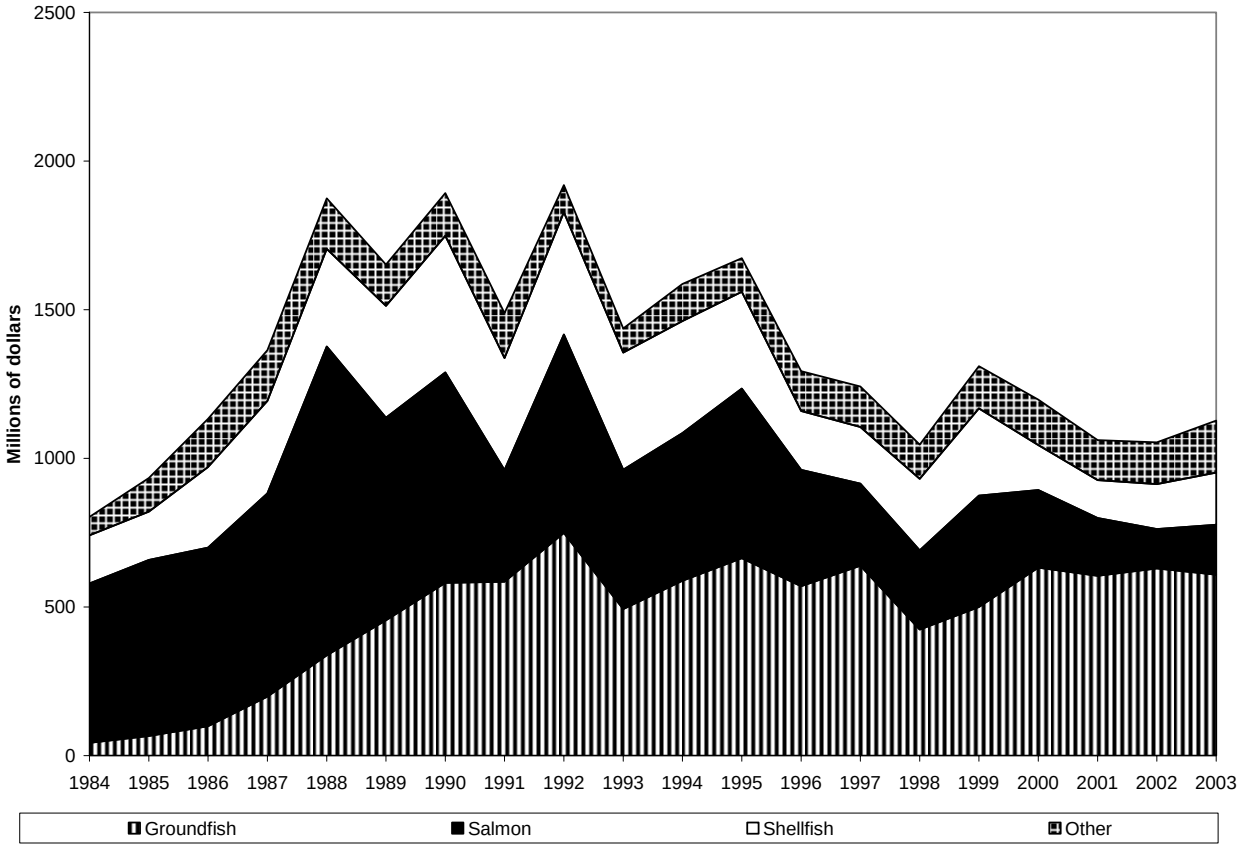


Figure 4. Real ex-vessel value of the domestic fish and shellfish catch off Alaska, 1984-2003 (base year = 2003).

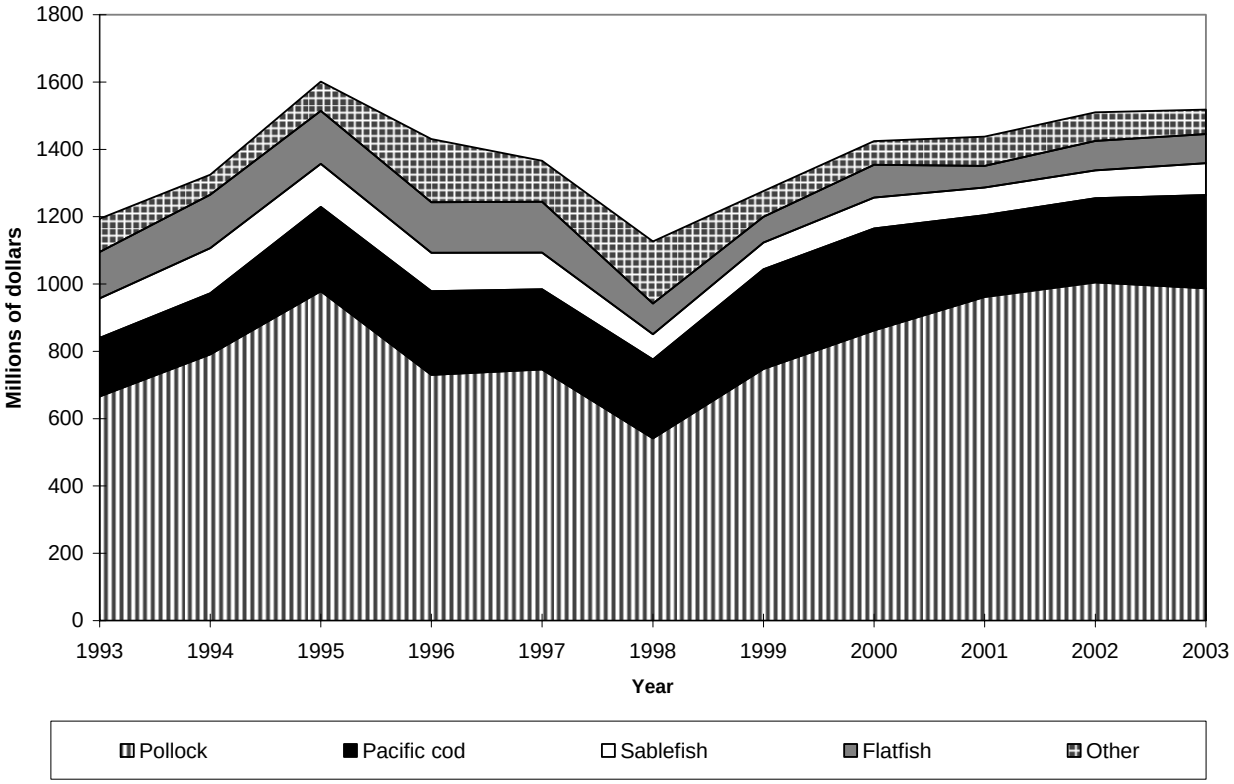
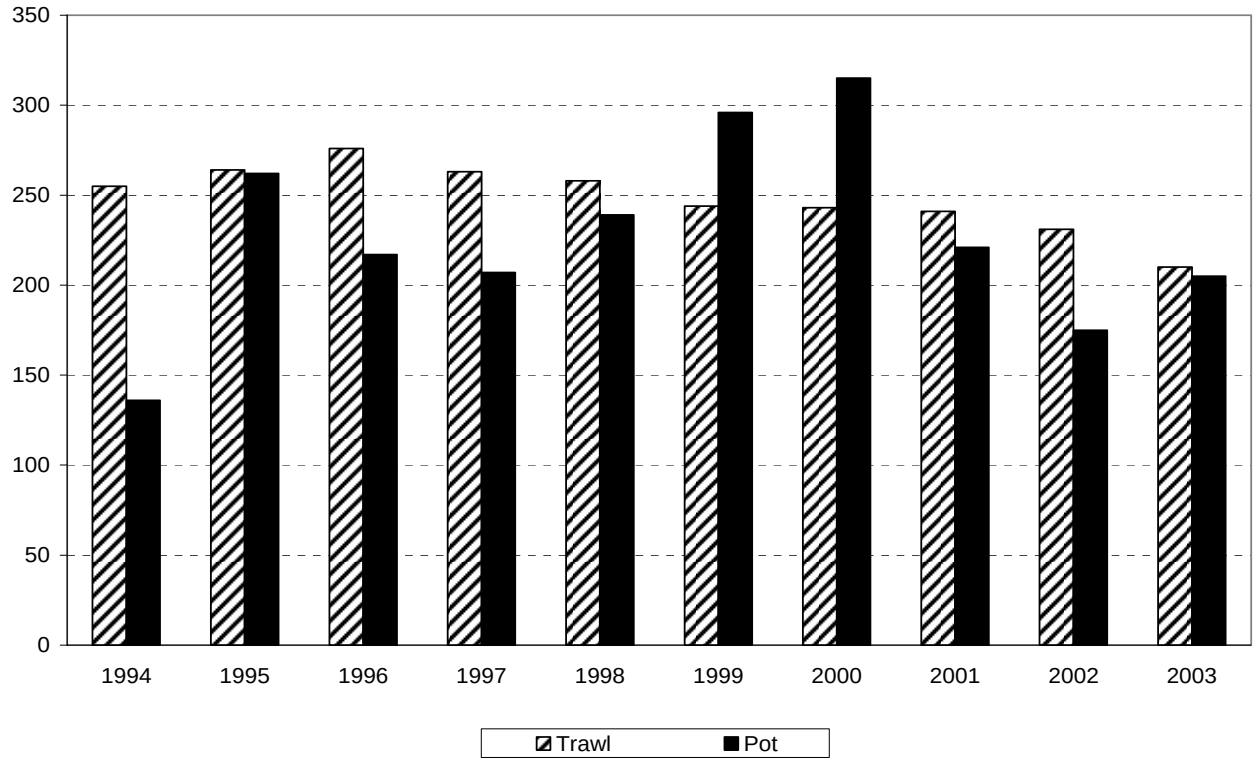


Figure 5. Real gross product value of the groundfish catch off Alaska, 1993-2003 (base year = 2003).



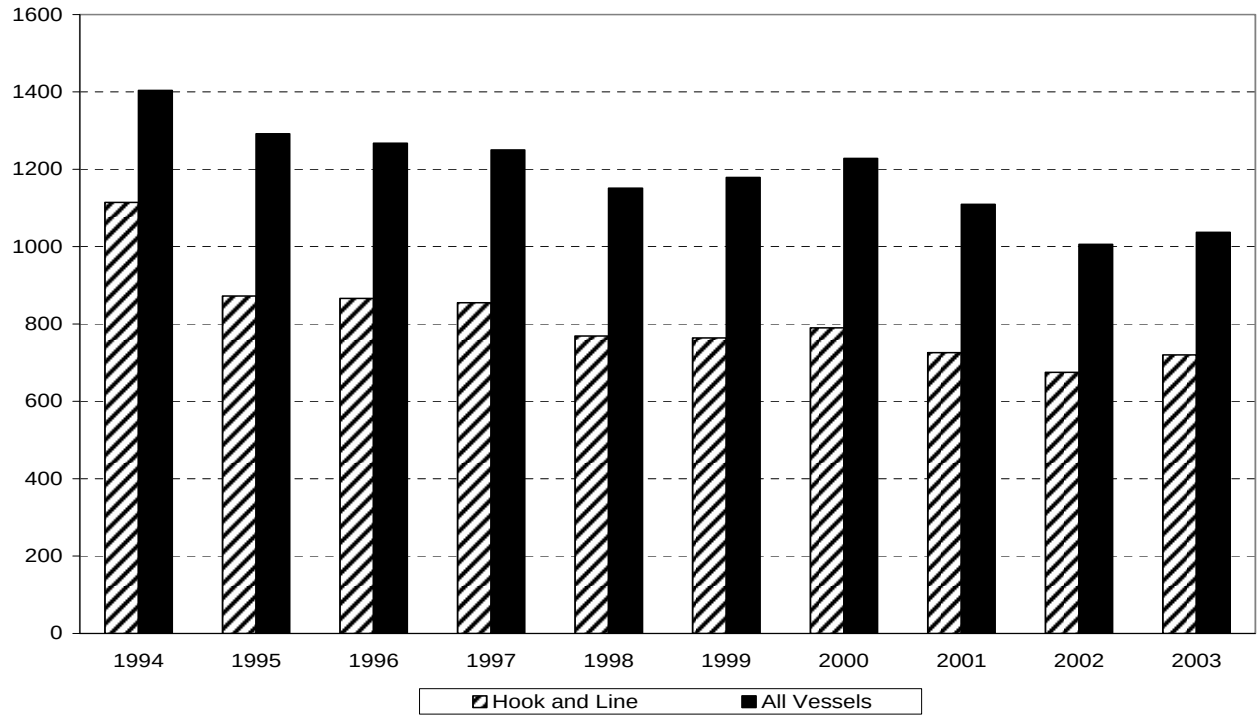


Figure 6. Number of vessels in the domestic groundfish fishery off Alaska by gear type, 1994-2003.

Table 1. Groundfish catch in the commercial fisheries off Alaska by area and species, 1989-2003 (1,000 metric tons, round weight).

	Pollock	Sablefish	Pacific cod	Flatfish	Rockfish	Atka mackerel	Total
Gulf of Alaska							
1989	66.6	29.8	41.7	5.2	23.4	.2	167.4
1990	77.8	27.3	74.6	15.4	21.1	.1	219.8
1991	107.5	23.1	77.0	40.1	21.2	1.4	276.1
1992	90.9	23.6	80.7	41.9	24.9	6.4	280.7
1993	108.9	24.8	56.5	39.5	19.7	5.1	261.4
1994	107.3	22.5	47.5	36.0	16.1	3.5	235.8
1995	72.6	20.8	69.0	32.3	19.3	.7	218.1
1996	51.3	18.2	68.3	43.1	18.2	1.6	205.2
1997	90.1	15.7	68.5	33.6	19.8	.3	233.5
1998	125.1	15.2	62.1	23.3	19.5	.3	249.3
1999	95.6	13.9	68.6	24.9	24.5	.3	231.6
2000	76.4	15.7	54.5	37.3	21.5	.2	211.1
2001	72.6	13.2	41.6	31.8	21.5	.1	185.6
2002	51.9	13.5	42.4	34.1	22.2	.1	168.3
2003	50.7	15.4	52.5	41.5	23.5	.6	190.5
Bering Sea and Aleutian Islands							
1989	1,281.5	4.5	168.4	230.8	7.3	18.3	1,715.9
1990	1,352.9	4.5	171.0	141.8	25.2	22.2	1,723.9
1991	1,629.1	3.4	218.1	240.3	10.6	26.7	2,155.8
1992	1,442.9	2.2	207.3	248.9	17.9	48.5	2,003.0
1993	1,384.6	2.7	167.4	216.9	24.7	66.0	1,887.2
1994	1,388.6	2.4	193.8	253.4	18.7	65.4	1,947.2
1995	1,329.5	2.0	245.0	232.2	16.8	81.6	1,929.8
1996	1,222.3	1.4	240.7	233.7	24.0	103.9	1,848.6
1997	1,150.5	1.3	257.8	311.9	17.0	65.8	1,831.1
1998	1,125.1	1.2	195.8	199.8	15.5	57.1	1,620.9
1999	990.9	1.4	173.9	161.6	19.9	56.2	1,424.9
2000	1,134.0	1.8	191.1	190.9	16.4	47.2	1,607.9
2001	1,388.3	1.9	176.7	140.2	17.6	61.6	1,815.2
2002	1,482.4	2.3	196.7	162.4	16.8	45.3	1,935.7
2003	1,491.7	2.1	209.2	159.8	20.8	58.3	1,970.8
All Alaska							
1989	1,348.1	34.3	210.1	236.0	30.7	18.5	1,883.3
1990	1,430.7	31.8	245.6	157.2	46.3	22.3	1,943.7
1991	1,736.6	26.6	295.1	280.4	31.8	28.1	2,431.9
1992	1,533.8	25.7	288.0	290.8	42.8	54.9	2,283.7
1993	1,493.5	27.5	223.9	256.4	44.4	71.2	2,148.6
1994	1,495.9	24.9	241.3	289.4	34.8	68.9	2,183.0
1995	1,402.1	22.9	314.0	264.4	36.1	82.3	2,147.9
1996	1,273.6	19.6	309.0	276.8	42.2	105.5	2,053.8
1997	1,240.7	17.1	326.2	345.6	36.9	66.2	2,064.6
1998	1,250.2	16.4	257.9	223.1	34.9	57.4	1,870.2
1999	1,086.4	15.3	242.5	186.4	44.4	56.5	1,656.5
2000	1,210.3	17.5	245.6	228.2	37.9	47.4	1,819.0
2001	1,460.9	15.1	218.4	172.0	39.1	61.6	2,000.8
2002	1,534.3	15.8	239.1	196.5	39.0	45.4	2,104.0
2003	1,542.4	17.5	261.6	201.3	44.3	58.9	2,161.3

Notes: These estimates include catch from federal and state of Alaska fisheries. Totals may include additional categories.

Source: Blend estimates for 1991-2002. Catch Accounting System estimates for 2003. Processor reports and fish tickets for 1989-90. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 2.1. Real ex-vessel value of the catch in the domestic commercial fisheries off Alaska by species group, 1984-2003 ($ millions, base year = 2003)

Year	Shellfish	Salmon	Herring	Halibut	Groundfish	Total
1984	161.5	535.8	31.9	30.6	43.6	803.4
1985	162.5	592.2	56.1	57.0	66.0	933.7
1986	272.0	600.6	57.1	104.2	99.0	1,132.7
1987	311.1	683.8	60.3	110.3	198.2	1,363.7
1988	328.5	1,038.5	78.1	92.2	337.7	1,874.8
1989	375.7	681.9	25.2	113.6	455.3	1,651.6
1990	459.5	707.4	31.1	112.5	581.7	1,892.1
1991	377.1	375.8	35.8	114.7	584.8	1,488.3
1992	410.8	667.6	33.1	58.8	748.9	1,919.2
1993	393.7	468.7	16.9	64.2	493.1	1,436.6
1994	376.6	497.6	25.3	99.3	587.8	1,586.7
1995	325.4	570.4	45.0	68.4	664.2	1,673.4
1996	197.9	391.5	50.6	83.8	569.8	1,293.7
1997	191.2	275.3	17.7	118.3	639.3	1,241.9
1998	240.3	266.7	11.9	103.4	424.1	1,046.3
1999	293.7	374.4	15.4	126.6	500.1	1,310.2
2000	151.0	261.1	10.2	142.7	632.5	1,197.5
2001	127.7	194.9	10.8	123.3	604.7	1,061.3
2002	151.5	132.3	9.3	131.3	629.9	1,054.2
2003	175.4	168.1	8.9	165.9	608.4	1,126.7

Note: The value added by at-sea processing is not included in these estimates of ex-vessel value. The data have been adjusted to 2003 dollars by applying the GDP implicit price deflators presented in Table 44.

Source: Blend estimates (1992-2002), Catch Accounting System (2003), ADFG fishtickets, Commercial Operators Annual Reports (COAR), weekly processor reports, Fisheries of the United States (FUS). National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 2.2. Percentage distribution of ex-vessel value of the catch in the domestic commercial fisheries off Alaska by species group, 1984-2003.

	Shellfish	Salmon	Herring	Halibut	Groundfish
Year					
1984	20.1%	66.7%	4.0%	3.8%	5.4%
1985	17.4%	63.4%	6.0%	6.1%	7.1%
1986	24.0%	53.0%	5.0%	9.2%	8.7%
1987	22.8%	50.1%	4.4%	8.1%	14.5%
1988	17.5%	55.4%	4.2%	4.9%	18.0%
1989	22.7%	41.3%	1.5%	6.9%	27.6%
1990	24.3%	37.4%	1.6%	5.9%	30.7%
1991	25.3%	25.3%	2.4%	7.7%	39.3%
1992	21.4%	34.8%	1.7%	3.1%	39.0%
1993	27.4%	32.6%	1.2%	4.5%	34.3%
1994	23.7%	31.4%	1.6%	6.3%	37.0%
1995	19.4%	34.1%	2.7%	4.1%	39.7%
1996	15.3%	30.3%	3.9%	6.5%	44.0%
1997	15.4%	22.2%	1.4%	9.5%	51.5%
1998	23.0%	25.5%	1.1%	9.9%	40.5%
1999	22.4%	28.6%	1.2%	9.7%	38.2%
2000	12.6%	21.8%	.8%	11.9%	52.8%
2001	12.0%	18.4%	1.0%	11.6%	57.0%
2002	14.4%	12.5%	.9%	12.5%	59.8%
2003	15.6%	14.9%	.8%	14.7%	54.0%

Source: Blend estimates (1992-2002), Catch Accounting System (2003), ADFG fishtickets, Commercial Operators Annual Reports (COAR), weekly processor reports, Fisheries of the United States (FUS). National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 3. Numbers of vessels and plants with observers, observer-deployment days, and estimated observer costs ($1,000) by year and type of operation, 2001-2002.

	2001			2002		
	Count	Obs. Days	Cost	Count	Obs. Days	Cost
Catcher vessels						
Hook and line						
60-125	54	939	329	42	709	248
H&L total	54	939	329	42	709	248
Pot						
60-125	46	723	253	41	796	279
>=125	12	117	41	11	124	43
Pot total	58	840	294	52	920	322
Trawl						
60-125	108	4,605	1,612	104	4,400	1,540
>=125	26	3,701	1,295	25	3,604	1,261
Trawl total	134	8,306	2,907	129	8,004	2,801
Catcher-vessel total	246	10,085	3,530	223	9,633	3,372
Catcher/processors						
Hook and line						
60-125	11	1,724	603	10	1,752	613
>=125	26	6,695	2,343	27	6,269	2,194
H&L total	37	8,419	2,947	37	8,021	2,807
Pot						
>60	8	767	268	7	661	231
Pot total	8	767	268	7	661	231
Fillet trawler						
>=125	4	1,357	475	4	1,202	421
H&G trawler						
60-125	8	751	263	7	803	281
>=125	15	4,110	1,439	15	4,541	1,589
Surimi trawler						
>=125	12	4,489	1,571	13	4,034	1,412
Trawl total	39	10,707	3,747	39	10,580	3,703
Catcher/processor total	84	19,893	6,963	83	19,262	6,742
Motherships	4	1,100	385	4	1,091	382
Other vessels	1	135	47	4	97	34
All vessels	335	31,213	10,925	314	30,083	10,529
Shore plants	26	5,055	1,769	22	4,700	1,645
Grand totals	357	36,268	12,694	332	34,783	12,174

Note: The cost estimates are based on an estimated average cost per day of $350. This includes the payment to observer providers and the cost of transportation and board. This table has not been updated for 2003.

Source: NMFS observer-program, CFEC fish tickets, weekly production reports, Alaska state and federal vessel-registration files. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 4. Groundfish catch off Alaska by area, vessel type, gear and species, 1999-2003, (1,000 metric tons, round weight).

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total
All gear									
All groundfish									
1999	183	43	226	615	810	1,425	798	853	1,651
2000	162	45	207	686	922	1,608	848	967	1,815
2001	144	38	182	791	1,024	1,815	935	1,062	1,997
2002	119	47	165	864	1,072	1,936	983	1,118	2,101
2003	135	53	188	883	1,088	1,971	1,018	1,140	2,158
Hook and line									
Sablefish									
1999	9	1	11	0	1	1	9	2	12
2000	11	1	12	1	1	1	11	2	13
2001	9	1	11	1	0	1	10	2	12
2002	9	2	11	1	1	1	10	2	12
2003	11	2	13	1	1	1	12	2	14
Pacific cod									
1999	7	5	12	0	89	89	7	94	101
2000	7	5	12	1	97	98	8	102	109
2001	6	4	10	1	108	108	7	112	118
2002	7	8	15	1	103	103	7	111	118
2003	7	6	13	1	107	108	8	113	121
Flatfish									
1999	1	0	1	1	6	6	2	6	8
2000	1	0	1	0	7	8	2	8	9
2001	1	0	1	1	5	6	1	5	7
2002	0	0	1	0	5	5	1	5	6
2003	0	0	0	1	5	5	1	5	6
Rockfish									
1999	1	0	1	0	0	0	1	1	2
2000	1	0	1	0	1	1	1	1	2
2001	2	0	2	0	1	1	2	1	2
2002	1	0	1	0	0	1	1	1	2
2003	1	0	1	0	0	0	1	1	2
All groundfish									
1999	19	8	27	2	110	112	20	118	138
2000	22	7	29	3	124	126	25	131	156
2001	19	6	25	2	135	138	21	141	163
2002	18	11	29	2	130	132	20	140	161
2003	21	9	30	2	137	140	24	146	169
Pot									
Pacific cod									
1999	14	4	19	13	3	16	27	7	35
2000	16	1	17	16	3	19	33	4	36
2001	6	2	7	14	3	17	19	5	24
2002	7	1	8	13	2	15	20	3	23
2003	21	-	21	20	2	22	41	-	43

Table 4. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total
Trawl									
Pollock									
1999	93	0	93	553	434	987	646	435	1,080
2000	74	0	75	615	514	1,129	689	515	1,204
2001	71	0	71	746	636	1,382	817	636	1,453
2002	50	0	51	799	677	1,476	849	677	1,526
2003	49	1	49	807	678	1,485	856	678	1,534
Sablefish									
1999	1	1	2	0	0	0	1	1	2
2000	1	1	2	0	0	0	1	1	2
2001	1	1	1	0	0	0	1	1	2
2002	1	1	2	0	0	0	1	2	2
2003	1	1	2	0	0	0	1	1	2
Pacific cod									
1999	35	2	37	36	32	68	71	35	105
2000	23	2	25	42	33	74	65	35	100
2001	21	3	24	21	30	51	43	33	76
2002	18	1	20	41	37	79	60	39	98
2003	17	2	19	42	37	79	58	39	98
Flatfish									
1999	11	12	23	9	147	155	20	159	179
2000	15	21	36	8	175	183	22	197	219
2001	17	14	31	3	131	134	20	145	165
2002	14	20	33	4	153	157	18	172	191
2003	14	27	41	5	149	154	20	176	195
Rockfish									
1999	8	14	23	0	19	19	8	34	42
2000	9	10	19	0	16	16	9	26	35
2001	7	11	19	0	17	17	7	28	35
2002	9	12	20	0	16	16	9	28	37
2003	10	11	22	0	20	20	11	31	42
Atka mackerel									
1999	0	0	0	0	56	56	0	56	56
2000	0	0	0	0	47	47	0	47	47
2001	0	0	0	0	61	61	0	61	61
2002	0	0	0	0	45	45	0	45	45
2003	0	1	1	2	56	58	2	57	59
All groundfish									
1999	150	31	180	599	697	1,296	749	728	1,477
2000	124	36	160	665	796	1,461	789	832	1,621
2001	119	30	149	774	886	1,659	893	916	1,809
2002	94	35	129	847	940	1,788	941	975	1,916
2003	93	44	137	859	949	1,808	952	993	1,944

Note: The estimates are of total catch (i.e., retained and discarded catch). All groundfish include additional species categories. These estimates include only catch counted against federal TACs. A dash (-) indicates that data are not available, either because there was no activity or to preserve confidentiality.

Source: Blend (1999-2002) and Catch Accounting System (2003) estimates, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 5. Discards and discard rates for groundfish catch off Alaska by area, gear, and species, 1999-2003 (1,000 metric tons, round weight).

	Fixed		Trawl		All gear	
	Total Discards	Discard Rate	Total Discards	Discard Rate	Total Discards	Discard Rate
Area/Species/Year						
Gulf of Alaska						
All groundfish						
1999	4.2	9.0%	20.6	11.4%	24.8	10.9%
2000	5.5	11.5%	22.0	13.7%	27.5	13.2%
2001	3.7	11.0%	20.7	13.8%	24.3	13.3%
2002	2.7	7.4%	20.3	15.8%	23.1	13.9%
2003	3.2	6.0%	26.5	19.2%	29.6	15.6%
Pollock						
1999	.1	68.5%	1.8	1.9%	1.9	2.0%
2000	.3	78.1%	1.9	2.6%	2.2	2.9%
2001	.0	9.3%	.7	1.0%	.7	1.0%
2002	.0	16.7%	1.1	2.2%	1.1	2.2%
2003	.0	15.6%	1.1	2.1%	1.1	2.1%
Sablefish						
1999	.3	2.6%	.7	42.2%	1.0	8.0%
2000	.5	4.2%	.6	35.9%	1.1	8.2%
2001	.3	2.6%	.5	35.3%	.8	6.4%
2002	.3	2.9%	.7	36.1%	1.0	8.0%
2003	.5	3.4%	.7	37.9%	1.2	7.5%
Pacific cod						
1999	.6	1.9%	1.0	2.8%	1.6	2.4%
2000	.1	.5%	1.2	4.9%	1.4	2.5%
2001	.3	1.9%	1.6	6.5%	1.9	4.6%
2002	.2	.9%	3.5	17.7%	3.7	8.8%
2003	.5	1.4%	2.0	10.4%	2.4	4.6%
Flatfish						
1999	1.4	97.9%	11.9	50.7%	13.3	53.5%
2000	1.4	95.2%	14.0	39.0%	15.3	41.1%
2001	.9	94.4%	13.7	44.3%	14.5	45.7%
2002	.7	96.0%	11.3	33.7%	11.9	35.0%
2003	.3	86.8%	18.2	44.2%	18.5	44.6%
Rockfish						
1999	.2	16.1%	3.4	15.1%	3.7	15.1%
2000	.4	21.8%	2.1	11.1%	2.5	12.1%
2001	.6	23.0%	2.0	10.6%	2.6	12.1%
2002	.3	19.8%	1.9	9.4%	2.2	10.1%
2003	.4	22.4%	3.1	14.3%	3.5	14.9%
Atka mackerel						
1999	.0	21.2%	.0	13.0%	.0	13.0%
2000	.0	100.0%	.0	5.0%	.0	6.1%
2001	.0	93.2%	.0	22.6%	.0	23.5%
2002	.0	87.1%	.0	60.3%	.1	61.1%
2003	.0	98.8%	.2	42.1%	.2	43.0%

Table 5. Continued.

	Fixed		Trawl		All gear	
	Total Discards	Discard Rate	Total Discards	Discard Rate	Total Discards	Discard Rate
Area/Species/Year						
Bering Sea and Aleutian Islands						
All groundfish						
1999	15.1	11.7%	114.9	8.9%	130.0	9.1%
2000	20.4	13.9%	107.7	7.4%	128.1	8.0%
2001	20.5	13.2%	78.9	4.8%	99.4	5.5%
2002	18.8	12.7%	100.1	5.6%	118.9	6.1%
2003	18.6	11.4%	96.4	5.3%	115.0	5.8%
Pollock						
1999	.6	15.0%	28.9	2.9%	29.5	3.0%
2000	1.0	21.1%	21.4	1.9%	22.4	2.0%
2001	1.0	16.7%	16.7	1.2%	17.7	1.3%
2002	.9	13.3%	20.6	1.4%	21.4	1.4%
2003	.8	11.2%	16.0	1.1%	16.8	1.1%
Sablefish						
1999	.1	10.3%	.0	15.9%	.2	11.6%
2000	.1	7.5%	.1	17.1%	.2	9.2%
2001	.1	6.9%	.0	7.1%	.1	6.9%
2002	.2	8.0%	.0	14.7%	.2	9.0%
2003	.1	7.2%	.1	37.8%	.2	10.8%
Pacific cod						
1999	1.6	1.5%	2.0	2.9%	3.6	2.1%
2000	2.9	2.5%	1.1	1.4%	4.0	2.1%
2001	1.8	1.5%	1.1	2.1%	2.9	1.7%
2002	2.4	2.0%	1.9	2.4%	4.3	2.2%
2003	2.3	1.8%	1.1	1.3%	3.3	1.6%
Flatfish						
1999	2.5	38.9%	62.9	40.6%	65.4	40.5%
2000	3.2	40.7%	66.0	36.1%	69.2	36.3%
2001	3.1	51.2%	37.8	28.2%	40.8	29.1%
2002	2.8	53.2%	52.6	33.5%	55.4	34.1%
2003	3.3	58.4%	49.8	32.3%	53.1	33.3%
Rockfish						
1999	.3	56.5%	6.9	35.6%	7.2	36.1%
2000	.4	60.9%	5.7	36.0%	6.1	37.1%
2001	.4	58.7%	8.1	47.9%	8.5	48.4%
2002	.4	58.9%	5.5	34.1%	5.9	35.0%
2003	.2	46.8%	7.5	36.8%	7.7	37.0%
Atka mackerel						
1999	.1	94.8%	5.0	8.8%	5.0	8.9%
2000	.2	97.2%	2.6	5.6%	2.8	5.9%
2001	.2	53.6%	4.4	7.1%	4.5	7.3%
2002	.1	98.6%	7.5	16.5%	7.6	16.7%
2003	.2	96.3%	13.5	23.3%	13.8	23.6%

Table 5. Continued.

	Fixed		Trawl		All gear	
	Total Discards	Discard Rate	Total Discards	Discard Rate	Total Discards	Discard Rate
All Alaska						
All groundfish						
1999	19.3	11.0%	135.4	9.2%	154.8	9.4%
2000	25.9	13.3%	129.6	8.0%	155.6	8.6%
2001	24.2	12.8%	99.6	5.5%	123.7	6.2%
2002	21.5	11.6%	120.4	6.3%	141.9	6.8%
2003	21.8	10.1%	122.8	6.3%	144.6	6.7%
Pollock						
1999	.7	17.0%	30.7	2.8%	31.4	2.9%
2000	1.3	24.9%	23.3	1.9%	24.6	2.0%
2001	1.0	16.6%	17.4	1.2%	18.5	1.3%
2002	.9	13.4%	21.7	1.4%	22.6	1.5%
2003	.8	11.2%	17.0	1.1%	17.8	1.2%
Sablefish						
1999	.4	3.3%	.8	38.2%	1.1	8.4%
2000	.6	4.6%	.7	32.9%	1.3	8.3%
2001	.4	3.2%	.5	29.1%	.9	6.4%
2002	.5	3.7%	.7	32.9%	1.2	8.2%
2003	.6	3.9%	.8	37.9%	1.4	7.9%
Pacific cod						
1999	2.2	1.6%	3.0	2.9%	5.2	2.2%
2000	3.0	2.1%	2.3	2.3%	5.3	2.2%
2001	2.2	1.5%	2.7	3.5%	4.8	2.2%
2002	2.6	1.8%	5.4	5.5%	8.0	3.3%
2003	2.7	1.7%	3.0	3.1%	5.8	2.2%
Flatfish						
1999	3.9	49.9%	74.8	41.9%	78.7	42.2%
2000	4.6	49.1%	80.0	36.5%	84.5	37.1%
2001	3.9	57.0%	51.5	31.2%	55.4	32.2%
2002	3.5	58.3%	63.9	33.5%	67.4	34.3%
2003	3.6	60.3%	68.0	34.8%	71.6	35.6%
Rockfish						
1999	.5	25.5%	10.4	24.6%	10.9	24.6%
2000	.8	32.5%	7.8	22.3%	8.6	23.0%
2001	1.0	30.8%	10.1	28.4%	11.1	28.6%
2002	.7	31.0%	7.4	20.3%	8.1	20.9%
2003	.6	27.2%	10.6	25.2%	11.2	25.3%
Atka mackerel						
1999	.1	93.7%	5.0	8.8%	5.1	9.0%
2000	.2	97.2%	2.6	5.6%	2.8	5.9%
2001	.2	53.8%	4.4	7.1%	4.5	7.4%
2002	.1	98.3%	7.5	16.6%	7.6	16.8%
2003	.2	96.3%	13.8	23.5%	14.0	23.8%

Notes: All groundfish and all gear may include additional categories. These estimates include only catch counted against federal TACs. Although these are the best available estimates of discards and are used for several management purposes, these estimates are not necessarily accurate. The reasons for this are as follows: 1) they are wholly or partially derived from observer estimates; 2) discards occur at many different places on vessels; 3) observers record only a rough approximation of what they see; 4) the estimation methods used by at-sea observers focus on providing good estimates of total catch by species, not on the disposition of that catch.

Source: Blend estimates (1999-2002) and Catch Accounting System estimates(2003) National Marine Fisheries Service, P.O. Box 15700, Seattle, WA, 98115-0070.

Table 6. Gulf of Alaska groundfish catch by species, gear, and target fishery, 2002-03 (1,000 metric tons, round weight).

	Species											
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rex sole	Flat deep	Flat shallow	Rock-fish	Atka mack.	Other	Total
Year/Gear/Target												
2002												
Hook and line												
Sablefish	.0	10.4	.1	.5	.0	-	.0	.0	1.2	-	.5	12.7
Pacific cod	.1	.1	14.7	.1	.0	.0	.0	.0	.0	.0	.4	15.5
Rockfish	-	.0	.0	.0	-	-	.0	-	.3	.0	.0	.4
Total	.1	10.5	14.9	.6	.0	.0	.0	.1	1.5	.0	1.2	28.9
Pot												
Pacific cod	.0	.0	7.7	.0	.0	-	-	.0	.0	.0	.2	7.9
Total	.0	.0	7.7	.0	.0	-	.0	.0	.0	.0	.3	8.0
Trawl												
Pollock												
bottom	7.9	.0	.3	.4	.1	.0	.0	.0	.0	-	.2	9.0
pelagic	41.3	.0	.1	.3	.1	.0	.0	.0	.1	.0	.1	41.9
Pacific cod	.7	.0	13.0	.5	.2	.1	.0	.6	.1	.0	.1	15.3
Arrowtooth	.2	.2	.7	11.2	.4	.5	.0	.2	.6	.0	.1	14.1
Flathd. sole	.1	.0	.4	1.0	.6	.1	.1	.2	.1	.0	.1	2.6
Rex sole	.0	.2	.3	3.4	.3	2.0	.1	.0	.4	.0	.1	6.9
Flat deep	.0	.0	.0	.1	.0	.0	.2	.0	.1	-	.0	.5
Flat shallow	.4	.0	3.4	2.4	.4	.1	.1	6.0	.3	.0	.6	13.6
Rockfish	.1	1.4	1.6	1.4	.0	.2	.1	.1	18.7	.0	.2	23.8
Total	50.6	1.9	19.8	20.6	2.1	3.0	.5	7.1	20.4	.1	2.5	128.7
All gear												
Total	50.7	12.4	42.4	21.2	2.1	3.0	.6	7.2	21.9	.1	4.0	165.6

Table 6. Continued.

	Species											
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rex sole	Flat deep	Flat shallow	Rock-fish	Atka mack.	Other	Total
Year/Gear/Target												
2003												
Hook and line												
Sablefish	.0	13.1	.1	.3	.0	.0	.0	.0	.9	.0	.2	14.6
Pacific cod	.0	.0	12.4	.0	.0	-	.0	.0	.0	.0	.8	13.3
Rockfish	-	.0	.0	-	-	-	-	-	.4	-	.0	.5
Halibut	-	.5	.4	.1	.0	.0	.0	.0	.4	-	.4	1.7
Total	.1	13.6	13.0	.3	.0	.0	.0	.0	1.8	.0	2.8	31.5
Pot												
Pacific cod	.0	-	20.7	.0	.0	-	-	.0	.0	.0	.4	21.2
Total	.0	-	20.7	.0	.0	-	-	.0	.0	.0	.4	21.2
Trawl												
Pollock												
bottom	3.2	.0	.1	.4	.1	.0	.0	.0	.0	-	.0	3.8
pelagic	46.1	.0	.2	.3	.1	.0	-	.0	.2	.0	.2	47.0
Pacific cod	.3	.0	13.3	1.1	.2	.1	.0	.6	.1	.0	.3	16.0
Arrowtooth	.3	.3	.8	15.1	.4	1.0	.2	.1	1.0	.0	.3	19.6
Flathd. sole	.1	.0	.3	2.0	.8	.1	.0	.1	.1	.0	.3	3.9
Rex sole	.1	.1	.6	5.8	.4	2.1	.2	.0	.5	.0	.5	10.4
Flat deep	.0	.1	.0	.2	.0	.0	.3	.0	.1	-	.0	.8
Flat shallow	.1	.0	1.6	2.2	.4	.0	.0	3.4	.0	.0	.7	8.5
Rockfish	.3	1.2	1.7	1.4	.1	.2	.1	.1	19.7	.4	.2	25.4
Total	50.6	1.8	18.8	29.7	2.4	3.5	.9	4.6	21.7	.6	3.2	137.7
All gear												
Total	50.7	15.4	52.5	30.0	2.4	3.5	.9	4.6	23.5	.6	6.4	190.5

Notes: Totals may include additional categories. The target, determined by AFSC staff, is based on processor, week, processing mode, NMFS area, and gear. These estimates include only catch counted against federal TACs.

Source: Blend estimates, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 7. Bering Sea and Aleutian Islands groundfish catch by species, gear, and target fishery, 2002-03 (1,000 metric tons, round weight).

	Species												
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rock sole	Turbot	Yellow fin	Flat other	Rock-fish	Atka mack.	Other	Total
Year/Gear/Target													
2002													
Hook and line													
Sablefish	.0	1.2	.2	.1	.0	.0	.3	-	.0	.4	.0	.4	2.5
Pacific cod	6.5	.1	103.0	1.0	.4	.0	.2	.6	.1	.2	.0	12.5	124.6
Turbot	.0	.1	.1	.2	.0	.0	1.9	-	.0	.0	-	.1	2.5
Total	6.5	1.4	103.3	1.3	.4	.0	2.5	.6	.1	.6	.0	15.2	132.0
Pot													
Sablefish	.0	.4	.0	.0	.0	-	.0	-	.0	.0	.0	.0	.5
Pacific cod	.0	.1	14.9	.2	.0	.0	.1	.0	.0	.0	.0	.4	15.7
Total	.0	.5	14.9	.2	.0	.0	.1	.0	.0	.0	.1	.4	16.2
Trawl													
Pollock													
bottom	13.4	.0	.6	.2	.2	.6	.0	.7	.1	.0	.0	.3	16.1
pelagic	1,426.7	.0	5.8	.5	1.7	1.6	.0	.2	.2	.6	.2	1.3	1,438.8
Pacific cod	8.5	.0	57.7	3.0	1.5	6.1	.0	1.4	.9	.3	.5	1.3	81.2
Arrowtooth	.3	.1	.2	2.0	.3	.0	.3	.0	.2	.1	.1	.1	3.6
Flathd. sole	1.9	.0	2.1	1.6	8.4	1.7	.1	2.1	.8	.1	.0	1.0	19.9
Rock sole	10.7	.0	5.1	.4	.8	23.1	.0	7.7	1.8	.0	.0	.9	50.4
Turbot	.0	.1	.0	.2	.1	.0	.2	-	.0	.0	.0	.0	.6
Yellowfin	13.8	-	5.7	1.0	2.1	8.3	.0	62.2	10.5	.0	.0	2.5	106.1
Flat, other	.1	.0	.1	.7	.1	.2	.1	.0	.3	.0	.0	.1	1.7
Rockfish	.2	.0	.1	.5	.0	.0	.2	.0	.0	9.4	1.1	.1	11.6
Atka mack.	.2	.0	1.3	.2	.0	.1	.1	.0	.0	5.6	43.3	.7	51.5
Total	1,475.8	.3	78.5	10.2	15.2	41.7	1.0	74.3	14.7	16.2	45.2	14.3	1,787.5
All gear													
Total	1,482.4	2.3	196.7	11.7	15.5	41.8	3.6	75.0	14.8	16.8	45.3	29.9	1,935.7

Table 7. Continued.

	Species												
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rock sole	Turbot	Yellow fin	Flat other	Rock-fish	Atka mack.	Other	Total
Year/Gear/Target													
2003													
Hook and line													
Sablefish	.0	.7	.0	.1	.0	-	.6	-	.0	.1	.0	.1	1.6
Pacific cod	7.1	.1	107.9	1.3	.4	.0	.2	.6	.1	.1	.0	16.7	134.6
Turbot	.0	.1	.0	.2	.0	.0	1.6	-	.0	.1	.0	.2	2.2
Halibut	.0	.2	.1	.1	.0	.0	.2	.0	.0	.1	.0	.3	1.1
Total	7.1	1.2	108.1	1.6	.4	.0	2.5	.6	.1	.4	.0	17.4	139.6
Pot													
Sablefish	.0	.7	.0	.1	.0	.0	.1	-	.0	.0	.0	.0	.9
Pacific cod	.0	.0	21.9	.0	.0	.0	.0	.1	.0	.0	.2	.4	22.7
Total	.0	.7	21.9	.1	.0	.0	.1	.1	.0	.0	.2	.4	23.6
Trawl													
Pollock													
bottom	14.1	.0	.2	.1	.1	.1	.0	.1	.0	.3	.4	.4	15.7
pelagic	1,440.3	.0	5.8	.6	1.6	1.3	.0	.1	.2	.8	.4	1.8	1,453.0
Pacific cod	9.7	.1	61.1	4.8	1.5	6.1	.1	1.1	1.3	.5	4.8	3.0	93.9
Arrowtooth	.2	.0	.1	1.2	.1	.0	.2	.0	.2	.1	.0	.1	2.4
Flathd. sole	3.0	.0	1.8	2.1	6.5	1.2	.1	2.5	.7	.1	.0	1.0	18.9
Rock sole	4.6	.0	3.2	.4	.7	18.7	.0	6.5	1.2	.0	.0	1.0	36.4
Turbot	.1	.0	.0	.2	.1	.0	.2	.0	.0	.0	-	.0	.7
Yellowfin	11.4	-	4.6	1.1	2.9	8.4	.0	69.0	8.9	.0	.0	3.1	109.5
Flat, other	.1	.0	.1	.4	.0	.0	.0	.0	.2	.0	.1	.0	.9
Rockfish	.5	.0	.3	.4	.0	.0	.2	-	.0	11.1	.7	.1	13.5
Atka mack.	.5	.0	1.9	.3	.0	.2	.1	.0	.0	7.4	51.6	.5	62.6
Total	1,484.6	.2	79.1	11.5	13.8	36.0	.9	79.3	12.7	20.4	58.1	11.1	1,807.6
All gear													
Total	1,491.7	2.1	209.2	13.3	14.2	36.0	3.5	80.0	12.8	20.8	58.3	28.9	1,970.8

Notes: Totals may include additional categories. The target, determined by AFSC staff, is based on processor, week, processing mode, NMFS area, and gear. These estimates include only catch counted against federal TACs.

Source: Blend estimates, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 8. Gulf of Alaska groundfish discards by species, gear, and target fishery, 2002-03 (1,000 metric tons, round weight).

	Species											
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rex sole	Flat deep	Flat shallow	Rock-fish	Atka mack.	Other	Total
Year/Gear/Target												
2002												
Hook and line												
Sablefish	.0	.2	.0	.4	.0	-	.0	.0	.3	-	.5	1.6
Pacific cod	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.3	.7
Rockfish	-	.0	.0	.0	-	-	.0	-	.0	.0	.0	.1
Total	.0	.3	.1	.6	.0	.0	.0	.0	.3	.0	1.0	2.4
Pot												
Pacific cod	.0	.0	.1	.0	.0	-	-	.0	.0	.0	.2	.3
Total	.0	.0	.1	.0	.0	-	.0	.0	.0	.0	.2	.3
Trawl												
Pollock												
bottom	.0	.0	.0	.0	.0	.0	.0	.0	.0	-	.2	.3
pelagic	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4
Pacific cod	.5	.0	.4	.4	.1	.0	.0	.1	.1	.0	.1	1.8
Arrowtooth	.0	.1	.2	2.4	.0	.0	.0	.0	.3	.0	.1	3.3
Flathd. sole	.0	.0	.3	.9	.0	.0	.0	.0	.0	.0	.1	1.3
Rex sole	.0	.1	.0	3.1	.0	.0	.1	.0	.3	.0	.1	3.8
Flat deep	.0	.0	.0	.1	.0	.0	.0	.0	.0	-	.0	.2
Flat shallow	.2	.0	2.3	2.1	.1	.0	.0	.3	.0	.0	.6	5.7
Rockfish	.1	.5	.3	1.0	.0	.1	.1	.0	1.1	.0	.2	3.2
Total	1.1	.7	3.5	10.1	.3	.1	.2	.6	1.9	.0	1.8	20.3
All gear												
Total	1.1	1.0	3.7	10.7	.3	.1	.2	.6	2.2	.1	3.0	23.1

Table 8. Continued.

	Species											
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rex sole	Flat deep	Flat shallow	Rock-fish	Atka mack.	Other	Total
2003												
Hook and line												
Sablefish	.0	.4	.1	.2	.0	.0	.0	.0	.2	.0	.2	1.2
Pacific cod	.0	.0	.2	.0	.0	-	.0	.0	.0	.0	.5	.8
Rockfish	-	.0	.0	-	-	-	-	-	.1	-	.0	.1
Halibut	-	.1	.2	.0	.0	.0	.0	.0	.0	-	.3	.7
Total	.0	.5	.4	.3	.0	.0	.0	.0	.4	.0	1.1	2.8
Pot												
Pacific cod	.0	-	.0	.0	.0	-	-	.0	.0	.0	.4	.4
Total	.0	-	.0	.0	.0	-	-	.0	.0	.0	.4	.4
Trawl												
Pollock												
bottom	.0	.0	.0	.2	.0	.0	.0	.0	.0	-	.0	.2
pelagic	.7	.0	.0	.1	.0	.0	-	.0	.1	.0	.1	1.0
Pacific cod	.0	.0	.2	.8	.0	.0	.0	.2	.0	.0	.2	1.5
Arrowtooth	.1	.3	.3	4.1	.1	.1	.1	.0	.8	.0	.2	6.0
Flathd. sole	.0	.0	.1	1.9	.1	.0	.0	.0	.1	.0	.1	2.3
Rex sole	.0	.1	.1	5.6	.0	.0	.2	.0	.4	.0	.2	6.8
Flat deep	.0	.1	.0	.2	.0	.0	.0	.0	.1	-	.0	.3
Flat shallow	.1	.0	1.0	1.9	.0	.0	.0	.1	.0	.0	.2	3.2
Rockfish	.1	.3	.2	1.0	.0	.1	.1	.1	1.7	.2	.1	3.9
Total	1.1	.7	2.0	16.8	.3	.2	.5	.4	3.1	.2	1.2	26.5
All gear												
Total	1.1	1.2	2.4	17.1	.3	.2	.5	.4	3.5	.2	2.8	29.6

Notes: Totals may include additional categories. The target, determined by AFSC staff, is based on processor, week, processing mode, NMFS area, and gear. These estimates include only catch counted against federal TACs. Although these are the best available estimates of discards and are used for several management purposes, these estimates are not necessarily accurate. The reasons for this are as follows: 1) they are wholly or partially derived from observer estimates; 2) discards occur at many different places on vessels; 3) observers record only a rough approximation of what they see; and 4) the estimation methods used by at-sea observers focus on providing good estimates of total catch by species, not on the disposition of that catch.

Source: Blend estimates, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 9. Bering Sea and Aleutian Islands groundfish discards by species, gear, and target fishery, 2002-03 (1,000 metric tons, round weight).

	Species												
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rock sole	Turbot	Yellow fin	Flat other	Rock-fish	Atka mack.	Other	Total
Year/Gear/Target													
2002													
Hook and line													
Sablefish	.0	.0	.1	.1	.0	.0	.2	-	.0	.2	.0	.4	1.0
Pacific cod	.9	.0	2.1	.8	.4	.0	.0	.6	.1	.1	.0	9.9	15.0
Turbot	.0	.1	.0	.1	.0	.0	.0	-	.0	.0	-	.1	.4
Total	.9	.2	2.3	1.1	.4	.0	.3	.6	.1	.3	.0	11.7	17.9
Pot													
Sablefish	.0	.0	.0	.0	.0	-	.0	-	.0	.0	.0	.0	.0
Pacific cod	.0	.0	.1	.2	.0	.0	.1	.0	.0	.0	.0	.4	.8
Total	.0	.0	.1	.2	.0	.0	.1	.0	.0	.0	.1	.4	.9
Trawl													
Pollock													
bottom	.5	.0	.0	.1	.1	.2	.0	.3	.0	.0	.0	.2	1.5
pelagic	.9	.0	.0	.2	.7	.8	.0	.1	.1	.4	.0	.6	3.8
Pacific cod	5.9	.0	1.0	2.6	.9	4.4	.0	1.0	.7	.2	.1	1.1	18.1
Arrowtooth	.1	.0	.0	.5	.0	.0	.1	.0	.0	.0	.0	.1	.9
Flathd. sole	.7	.0	.1	1.1	1.3	1.1	.0	.4	.7	.0	.0	.9	6.1
Rock sole	6.5	.0	.3	.3	.3	7.2	.0	1.4	1.7	.0	.0	.9	18.6
Turbot	.0	.0	.0	.1	.0	.0	.0	-	.0	.0	.0	.0	.1
Yellowfin	5.8	-	.4	.6	.5	4.1	.0	7.6	10.2	.0	.0	2.2	31.3
Flat, other	.0	.0	.0	.5	.0	.1	.0	.0	.0	.0	.0	.1	.9
Rockfish	.0	.0	.0	.4	.0	.0	.0	.0	.0	.4	.2	.1	1.1
Atka mack.	.1	.0	.1	.1	.0	.0	.0	.0	.0	4.5	7.1	.7	12.6
Total	20.6	.0	1.9	6.4	3.9	17.9	.3	10.7	13.4	5.5	7.5	12.0	100.1
All gear													
Total	21.4	.2	4.3	7.6	4.2	18.0	.7	11.3	13.5	5.9	7.6	24.1	118.9

Table 9. Continued.

	Species												
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rock sole	Turbot	Yellow fin	Flat other	Rock-fish	Atka mack.	Other	Total
2003													
Hook and line													
Sablefish	.0	.0	.0	.0	.0	-	.5	-	.0	.0	.0	.1	.7
Pacific cod	.8	.1	2.0	1.0	.4	.0	.1	.6	.1	.1	.0	10.8	15.9
Turbot	.0	.0	.0	.1	.0	.0	.0	-	.0	.0	.0	.2	.4
Halibut	.0	.0	.1	.1	.0	.0	.2	.0	.0	.1	.0	.3	.6
Total	.8	.1	2.1	1.2	.4	.0	.7	.6	.1	.2	.0	11.4	17.6
Pot													
Sablefish	.0	.0	.0	.1	.0	.0	.1	-	.0	.0	.0	.0	.2
Pacific cod	.0	.0	.2	.0	.0	.0	.0	.1	.0	.0	.2	.3	.8
Total	.0	.0	.2	.1	.0	.0	.1	.1	.0	.0	.2	.4	1.0
Trawl													
Pollock													
bottom	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.2	.5
pelagic	.5	.0	.0	.2	.6	.6	.0	.1	.1	.5	.2	.9	3.8
Pacific cod	6.8	.0	.5	4.0	.9	4.7	.0	.7	.8	.4	3.6	2.5	25.0
Arrowtooth	.1	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0	.1	.6
Flathd. sole	1.6	.0	.0	1.1	.9	.4	.0	.4	.7	.0	.0	.7	5.8
Rock sole	2.1	.0	.2	.4	.3	6.5	.0	1.6	1.1	.0	.0	.8	13.0
Turbot	.1	.0	.0	.1	.0	.0	.0	.0	.0	.0	-	.0	.2
Yellowfin	4.4	-	.3	.8	.8	3.8	.0	7.9	8.5	.0	.0	2.5	29.1
Flat, other	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.1	.0	.4
Rockfish	.1	.0	.0	.3	.0	.0	.0	-	.0	.2	.1	.1	.9
Atka mack.	.2	.0	.1	.2	.0	.1	.0	.0	.0	6.2	9.4	.5	16.7
Total	16.0	.1	1.1	7.8	3.7	16.1	.2	10.8	11.2	7.5	13.6	8.3	96.4
All gear													
Total	16.8	.2	3.4	9.1	4.1	16.2	1.0	11.5	11.3	7.7	13.8	20.0	115.0

Notes: Totals may include additional categories. The target, determined by AFSC staff, is based on processor, week, processing mode, NMFS area, and gear. These estimates include only catch counted against federal TACs. Although these are the best available estimates of discards and are used for several management purposes, these estimates are not necessarily accurate. The reasons for this are discussed in the Notes for Table 8.

Source: Blend estimates, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 10. Gulf of Alaska groundfish discard rates by species, gear, and target fishery, 2002-03 (percent).

	Species											
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rex sole	Flat deep	Flat shallow	Rock-fish	Atka mack.	Other	Total
Year/Gear/Target												
2002												
Hook and line												
Sablefish	98.7	2.4	22.9	96.3	100.0	-	94.4	100.0	23.8	-	100.0	12.4
Pacific cod	3.2	42.0	.6	97.9	100.0	100.0	72.2	99.9	41.1	73.8	88.4	4.3
Rockfish	-	54.3	.0	100.0	-	-	100.0	-	.3	.0	99.4	20.5
Total	15.0	2.9	.8	96.8	100.0	100.0	83.5	93.7	19.7	73.8	85.4	8.4
Pot												
Pacific cod	63.2	100.0	1.1	98.1	98.0	-	-	99.6	98.5	100.0	98.9	3.5
Total	63.2	8.3	1.1	83.8	98.0	-	.0	98.0	88.7	100.0	67.9	3.6
Trawl												
Pollock												
bottom	.6	.0	.1	4.9	41.1	.0	.0	3.7	3.3	-	95.4	3.9
pelagic	.6	.0	.2	7.0	6.9	.0	.0	15.6	8.2	.0	90.8	1.0
Pacific cod	74.6	94.8	3.1	83.3	38.8	7.5	91.1	22.6	87.0	77.3	99.7	11.7
Arrowtooth	29.1	58.8	23.2	21.6	12.5	4.2	96.6	21.3	52.4	21.1	82.3	23.6
Flathd. sole	53.1	.9	65.2	90.8	1.5	2.7	5.1	6.6	31.7	56.2	100.0	51.0
Rex sole	7.6	33.5	5.4	92.4	12.4	1.6	95.0	71.3	65.6	7.1	84.8	54.6
Flat deep	30.1	56.5	29.2	72.1	.0	.0	.0	25.6	65.4	-	99.9	31.6
Flat shallow	50.7	46.3	68.3	86.7	12.4	13.8	5.9	5.6	12.8	21.9	99.8	41.5
Rockfish	50.7	33.2	18.9	73.1	64.8	29.6	71.8	12.1	5.7	63.2	96.7	13.6
Total	2.2	36.1	17.7	48.9	13.0	4.8	34.2	8.1	9.4	60.3	71.5	15.8
All gear												
Total	2.2	8.0	8.8	50.3	13.3	4.8	36.3	8.8	10.1	61.1	75.4	13.9

Table 10. Continued.

	Species											
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rex sole	Flat deep	Flat shallow	Rock-fish	Atka mack.	Other	Total
2003												
Hook and line												
Sablefish	7.4	3.1	65.4	86.1	73.1	100.0	92.4	97.8	25.7	100.0	97.7	7.9
Pacific cod	2.6	39.6	1.3	99.1	58.4	-	.0	80.5	45.8	100.0	70.5	5.7
Rockfish	-	.0	.1	-	-	-	-	-	22.3	-	.0	21.0
Halibut	-	10.9	60.9	86.5	100.0	100.0	72.2	98.7	10.1	-	82.1	41.2
Total	2.8	3.4	3.4	86.7	59.7	100.0	87.2	84.7	22.0	100.0	40.7	8.7
Pot												
Pacific cod	90.2	-	.1	99.1	.0	-	-	99.7	99.0	98.6	90.0	2.1
Total	90.2	-	.1	99.1	.0	-	-	99.7	99.0	98.6	90.0	2.1
Trawl												
Pollock												
bottom	.4	22.2	.5	40.6	6.6	24.9	5.3	1.1	4.9	-	36.2	4.9
pelagic	1.6	52.9	7.2	24.4	31.3	17.0	-	47.8	34.1	.0	74.9	2.2
Pacific cod	16.7	80.7	1.2	72.6	22.7	7.0	66.9	29.2	68.2	10.5	53.1	9.3
Arrowtooth	18.9	77.8	39.8	27.1	24.1	6.0	64.7	19.1	77.0	7.4	65.9	30.7
Flathd. sole	46.0	29.5	24.4	93.5	8.3	2.6	46.7	25.9	57.1	38.4	40.1	59.4
Rex sole	19.2	51.5	22.5	96.7	12.0	2.4	98.0	1.2	73.0	29.4	45.0	65.2
Flat deep	.0	68.0	1.4	85.6	.0	.0	.0	.0	68.7	-	78.9	40.9
Flat shallow	44.1	55.1	60.6	84.9	2.5	.8	39.0	2.9	83.3	41.2	27.0	38.1
Rockfish	22.2	23.2	13.6	72.6	25.3	36.0	71.1	58.8	8.5	50.1	83.3	15.2
Total	2.1	37.9	10.4	56.7	12.2	5.0	49.2	8.9	14.3	42.1	39.4	19.2
All gear												
Total	2.1	7.5	4.6	57.0	12.3	5.1	49.9	9.4	14.9	43.0	43.3	15.6

Notes: Totals may include additional categories. The target, determined by AFSC staff, is based on processor, week, processing mode, NMFS area, and gear. These estimates include only catch counted against federal TACs. Although these are the best available estimates of discards and are used for several management purposes, these estimates are not necessarily accurate. The reasons for this are as follows: 1) they are wholly or partially derived from observer estimates; 2) discards occur at many different places on vessels; 3) observers record only a rough approximation of what they see; and 4) the estimation methods used by at-sea observers focus on providing good estimates of total catch by species, not on the disposition of that catch.

Source: Blend estimates, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 11. Bering Sea and Aleutian Islands groundfish discard rates by species, gear, and target fishery, 2002-03 (percent).

	Species												
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rock sole	Turbot	Yellow fin	Flat other	Rock-fish	Atka mack.	Other	Total
Year/Gear/Target													
2002													
Hook and line													
Sablefish	86.7	2.5	80.7	92.3	100.0	100.0	65.7	-	100.0	54.8	100.0	99.3	41.6
Pacific cod	13.1	33.0	2.1	85.7	95.5	99.2	21.0	98.0	96.1	78.4	97.1	79.1	12.1
Turbot	54.8	61.6	19.0	71.1	99.7	100.0	2.5	-	100.0	37.9	-	96.4	16.9
Total	13.1	10.5	2.2	83.8	95.6	99.2	13.4	98.0	96.3	58.7	97.1	77.2	13.6
Pot													
Sablefish	34.9	.4	19.4	40.8	2.4	-	19.6	-	84.7	34.9	99.4	72.9	7.4
Pacific cod	61.8	.6	.6	99.8	29.1	99.0	97.9	100.0	100.0	99.3	99.9	99.4	5.2
Total	61.5	.5	.7	88.2	10.6	99.0	70.5	100.0	99.2	80.2	99.9	98.5	5.3
Trawl													
Pollock													
bottom	3.5	48.5	6.4	49.4	33.7	37.2	80.3	44.5	44.9	84.0	90.8	77.4	9.5
pelagic	.1	12.1	.4	37.1	43.2	47.8	26.4	36.7	34.6	60.1	11.1	51.7	.3
Pacific cod	70.1	55.7	1.8	85.7	64.7	72.6	45.4	69.8	77.9	81.8	24.5	86.7	22.3
Arrowtooth	43.9	16.3	.4	26.4	4.6	31.6	45.2	2.3	9.4	15.8	.1	54.1	24.9
Flathd. sole	35.8	2.5	2.7	68.4	14.8	61.3	19.6	19.0	89.4	6.2	3.5	84.6	30.8
Rock sole	60.8	47.8	5.6	87.4	37.4	31.3	100.0	17.8	97.5	41.4	100.0	94.7	36.9
Turbot	7.8	3.5	.0	36.5	.0	71.4	11.7	-	1.5	.2	100.0	100.0	18.2
Yellowfin	42.3	-	6.8	56.0	25.0	48.7	81.4	12.2	96.9	25.1	79.2	88.4	29.5
Flat, other	30.6	23.2	1.0	78.7	20.9	82.5	59.9	3.7	5.2	36.2	.0	93.8	50.9
Rockfish	5.3	.8	.0	70.5	9.1	98.9	9.0	5.6	55.6	4.5	15.0	98.1	9.2
Atka mack.	33.3	.6	4.6	47.2	87.1	62.8	9.4	100.0	25.7	80.0	16.5	99.6	24.5
Total	1.4	14.7	2.4	62.7	25.5	43.0	28.7	14.4	91.3	34.1	16.5	83.9	5.6
All gear													
Total	1.4	9.0	2.2	65.4	27.2	43.1	19.3	15.1	91.3	35.0	16.7	80.7	6.1

Table 11. Continued.

	Species												
	Pollock	Sable-fish	Pacific cod	Arrow-tooth	Flathd. sole	Rock sole	Turbot	Yellow fin	Flat other	Rock-fish	Atka mack.	Other	Total
2003													
Hook and line													
Sablefish	33.6	1.3	25.1	64.9	100.0	-	82.5	-	96.1	32.3	100.0	98.7	41.1
Pacific cod	11.0	81.4	1.9	75.7	92.3	98.3	28.9	97.8	92.9	82.1	70.6	64.3	11.8
Turbot	23.2	29.2	12.9	46.5	98.0	100.0	2.9	-	99.6	23.0	100.0	96.9	18.6
Halibut	14.6	3.8	48.5	70.8	43.1	100.0	77.5	.0	95.8	55.0	96.0	84.2	58.3
Total	11.1	10.8	2.0	72.1	92.3	98.3	28.7	97.8	93.3	45.3	72.0	65.2	12.6
Pot													
Sablefish	79.5	.8	96.0	82.1	96.2	100.0	80.7	-	81.5	86.6	67.0	95.8	22.0
Pacific cod	48.6	75.8	.8	99.6	49.7	99.4	100.0	99.8	99.8	99.8	98.8	86.8	3.7
Total	49.6	.9	.8	82.7	55.5	99.7	80.8	99.8	99.2	94.0	98.7	86.9	4.4
Trawl													
Pollock													
bottom	.5	22.1	.0	61.7	26.7	17.0	4.9	.1	20.3	27.0	26.4	51.2	3.3
pelagic	.0	77.0	.5	36.8	36.7	43.1	30.5	68.4	39.3	61.6	61.7	53.9	.3
Pacific cod	70.1	63.2	.8	83.2	61.8	77.4	67.7	71.1	67.4	83.9	74.3	83.4	26.7
Arrowtooth	50.9	15.8	.0	28.1	13.8	51.1	29.5	12.5	1.8	10.1	57.5	74.4	26.9
Flathd. sole	51.9	14.3	.1	55.4	13.6	37.1	16.9	14.6	97.5	36.7	1.3	71.6	30.8
Rock sole	46.2	3.2	7.8	84.1	42.6	34.5	20.5	25.2	93.3	23.9	88.4	80.0	35.8
Turbot	77.3	.0	.0	48.4	11.0	6.9	.0	2.9	4.3	3.4	-	78.3	28.3
Yellowfin	38.4	-	5.6	74.7	28.2	45.6	33.3	11.5	95.9	99.4	50.4	79.8	26.6
Flat, other	34.2	47.3	.0	80.1	26.3	69.4	100.0	100.0	2.4	30.1	69.9	80.7	50.2
Rockfish	23.2	.0	.2	72.1	26.4	20.9	2.3	-	29.0	2.0	14.0	96.8	6.5
Atka mack.	39.0	36.6	3.2	71.7	57.4	60.1	35.9	44.2	29.2	83.8	18.2	95.0	26.7
Total	1.1	37.8	1.3	68.0	26.7	44.9	19.2	13.6	88.4	36.8	23.3	75.5	5.3
All gear													
Total	1.1	10.8	1.6	68.6	28.7	44.9	27.4	14.4	88.4	37.0	23.6	69.4	5.8

Notes: Totals may include additional categories. The target, determined by AFSC staff, is based on processor, week, processing mode, NMFS area, and gear. These estimates include only catch counted against federal TACs. Although these are the best available estimates of discards and are used for several management purposes, these estimates are not necessarily accurate. The reasons for this are discussed in the Notes for Table 10.

Source: Blend estimates, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 12. Prohibited species bycatch by species, area and gear, 2000-03 (metric tons (t) or number in 1,000s)

	Halibut mort.	Herring	Chinook	Other salmon	Red king crab	Other k.crab	Bairdi	Other tanner
	t	t	1,000s	1,000s	1,000s	1,000s	1,000s	1,000s
BSAI Hook and line								
2000	893	0	0	0	5	7	8	109
2001	882	0	0	0	18	9	15	88
2002	698	0	0	0	26	18	17	76
2003	573	0	0	0	13	2	12	64
BSAI Pot								
2000	4	0	-	0	35	12	133	162
2001	5	0	-	0	1	12	65	127
2002	8	-	-	0	1	27	80	280
2003	5	-	-	-	0	143	88	26
BSAI Trawl								
2000	3,235	512	8	58	77	18	1,002	3,019
2001	3,275	270	40	60	62	17	1,001	1,853
2002	3,399	130	40	81	105	16	1,110	1,131
2003	3,391	1,099	55	195	94	6	996	703
BSAI All gear								
2000	4,132	512	8	58	116	36	1,143	3,289
2001	4,163	270	40	60	81	39	1,081	2,068
2002	4,106	130	40	81	133	61	1,207	1,487
2003	3,969	1,099	55	195	107	151	1,095	793
GOA Pot								
2000	7	-	0	-	0	0	66	30
2001	4	-	-	-	0	-	69	0
2002	2	-	-	-	0	-	93	3
2003	14	-	-	-	-	-	10	-
GOA Trawl								
2000	1,934	5	27	11	0	1	49	3
2001	2,259	7	15	6	0	1	127	4
2002	2,005	2	13	4	0	1	88	3
2003	2,080	13	16	10	0	1	137	1
GOA All gear								
2000	1,941	5	27	11	0	1	115	34
2001	2,263	7	15	6	0	1	196	4
2002	2,007	2	13	4	0	1	182	5
2003	2,094	13	16	11	0	1	147	1
BSAI and GOA, All gear								
2000	6,072	517	34	69	116	37	1,257	3,323
2001	6,427	277	56	66	81	39	1,277	2,073
2002	6,113	133	53	84	133	62	1,389	1,492
2003	6,063	1,112	71	205	107	152	1,242	794

Notes: These estimates include only catches counted against federal TACs. Totals may include additional categories. The estimates of halibut bycatch mortality are based on the International Pacific Halibut Commission discard mortality rates that were used for in-season management. The halibut Individual Fishing Quota program allows retention of halibut in the hook-and-line groundfish fisheries, making true halibut bycatch numbers unavailable. This is particularly a problem in the Gulf of Alaska for all hook-and-line fisheries and in the Bering Sea and Aleutian Islands for the sablefish hook-and-line fishery. Therefore, estimates of halibut bycatch mortality are not included in this table for those fisheries.

Source: Blend estimates (2000-02) Catch Accounting System (2003), National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 13. Prohibited species bycatch in the Gulf of Alaska by species, gear, and groundfish target fishery, 2002-03 (Metric tons (t) or number in 1,000s).

	Halibut mort.	Herring	Red king crab	Other k.crab	Bairdi	Other tanner	Chinook	Other salmon
	t	t	1,000s	1,000s	1,000s	1,000s	1,000s	1,000s
Year/Gear/Target								
2002								
Hook and line								
Sablefish	n.a.	.0	.0	.0	.0	.0	.0	.0
Pacific cod	n.a.	.0	.0	.0	.0	.0	.0	.0
Arrowtooth	n.a.	.0	.0	.0	.0	.0	.0	.0
Flat deep	n.a.	.0	.0	.0	.0	.0	.0	.0
Flat shallow	n.a.	.0	.0	.0	.0	.0	.0	.0
Rockfish	n.a.	.0	.0	.0	.0	.0	.0	.0
Total	n.a.	.0	.0	.0	.0	.0	.0	.0
Pot								
Pacific cod	2.5	.0	.0	.0	93.1	2.7	.0	.0
Total	2.5	.0	.0	.0	93.1	2.7	.0	.0
Trawl								
Pollock								
bottom	2.0	1.3	.0	.0	.8	.4	1.1	.4
pelagic	.6	.8	.0	.0	.0	.0	3.9	.4
Pacific cod	195.2	.0	.0	.0	4.9	.5	4.1	.0
Arrowtooth	352.2	.0	.0	.0	14.8	.1	.6	.8
Flathd. sole	50.2	.0	.0	.0	25.5	1.1	.0	.1
Rex sole	272.2	.0	.0	.1	6.8	.3	1.3	.1
Flat deep	24.0	.0	.0	.0	.2	.1	.0	.0
Flat shallow	826.2	.1	.0	.3	34.1	.1	.4	.6
Rockfish	282.1	.0	.0	.4	1.0	.0	1.5	1.2
Total	2,004.7	2.2	.0	.9	88.0	2.6	13.0	3.6
All gear								
Total	2,007.2	2.2	.0	.9	182.4	5.3	13.0	3.6

Table 13. Continued.

Year/Gear/Target	Halibut mort.	Herring	Red king crab	Other k.crab	Bairdi	Other tanner	Chinook	Other salmon
	t	t	1,000s	1,000s	1,000s	1,000s	1,000s	1,000s
2003								
Hook and line								
Sablefish	n.a.	.0	.0	.2	.0	.0	.0	.2
Total	n.a.	.0	.0	.2	.0	.0	.0	.2
Pot								
Pacific cod	13.7	.0	.0	.0	10.1	.0	.0	.0
Total	13.7	.0	.0	.0	10.1	.0	.0	.0
Trawl								
Pollock								
bottom	9.6	.1	.0	.0	.0	.0	.9	.0
pelagic	.4	13.0	.0	.0	.0	.0	3.7	6.3
Sablefish	.1	.0	.0	.0	.0	.0	.0	.0
Pacific cod	452.9	.0	.0	.0	2.5	.9	3.2	.0
Arrowtooth	413.4	.0	.0	.1	28.3	.0	3.5	.9
Flathd. sole	118.2	.1	.0	.5	17.3	.2	.6	.0
Rex sole	240.0	.0	.0	.0	28.8	.0	2.9	.5
Flat deep	20.7	.0	.0	.0	.0	.0	.0	.0
Flat shallow	539.1	.0	.0	.0	59.6	.4	.1	.0
Rockfish	262.4	.0	.1	.0	.2	.0	.9	2.5
Total	2,080.3	13.3	.1	.7	136.8	1.4	15.8	10.3
All gear								
Total	2,094.0	13.3	.1	.9	146.9	1.5	15.8	10.5

Notes: These estimates include only catches counted against federal TACs. Totals may include additional categories. The estimates of halibut bycatch mortality are based on the International Pacific Halibut Commission discard mortality rates that were used for in-season management. The halibut Individual Fishing Quota program allows retention of halibut in the hook-and-line groundfish fisheries, making true halibut bycatch numbers unavailable. Therefore, estimates of halibut bycatch mortality are not included in this table for those fisheries.

Source: Blend estimates (2002), Catch Accounting System (2003), National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 14. Prohibited species bycatch in the Bering Sea and Aleutian Islands by species, gear, and groundfish target fishery, 2002-03 (Metric tons (t) or number in 1,000s).

	Halibut mort.	Herring	Red king crab	Other k.crab	Bairdi	Other tanner	Chinook	Other salmon
	t	t	1,000s	1,000s	1,000s	1,000s	1,000s	1,000s
Year/Gear/Target								
2002								
Hook and line								
Sablefish	n.a.	.0	.0	1.2	.0	.1	.0	.0
Pacific cod	643.0	.0	26.1	16.6	17.0	75.2	.0	.1
Arrowtooth	.1	.0	.0	.0	.0	.0	.0	.0
Turbot	48.8	.0	.0	.1	.1	.6	.0	.0
Rockfish	.3	.0	.0	.0	.0	.0	.0	.0
Total	698.1	.0	26.1	18.0	17.1	76.0	.0	.1
Pot								
Sablefish	3.1	.0	.0	16.3	.1	.7	.0	.0
Pacific cod	5.2	.0	1.0	9.9	79.9	279.2	.0	.0
Total	8.4	.0	1.0	26.9	80.0	279.9	.0	.0
Trawl								
Pollock								
bottom	50.4	1.5	2.1	.3	21.8	7.3	.2	.4
pelagic	149.6	104.0	.0	.1	.1	.7	34.2	78.6
Pacific cod	1,009.5	1.3	19.7	.9	223.4	128.2	3.2	.9
Arrowtooth	67.9	.0	.0	3.4	8.3	35.0	.1	.0
Flathd. sole	214.6	4.2	.6	.9	217.9	159.1	.0	.1
Rock sole	852.2	2.4	67.2	.5	381.7	134.9	.7	.1
Turbot	4.4	.0	.0	.2	.7	8.8	.0	.0
Yellowfin	888.9	16.2	15.5	1.6	252.9	641.4	.3	.4
Flat, other	33.0	.7	.0	.8	2.9	13.3	.0	.0
Rockfish	67.5	.0	.0	6.0	.2	2.2	.0	.0
Atka mack.	61.1	.0	.2	1.8	.0	.0	.9	.0
Total	3,399.1	130.5	105.5	16.5	1,109.8	1,131.0	39.6	80.7
All gear								
Total	4,105.7	130.5	132.6	61.3	1,206.9	1,486.9	39.6	80.8

Table 14. Continued.

	Halibut mort.	Herring	Red king crab	Other k.crab	Bairdi	Other tanner	Chinook	Other salmon
	t	t	1,000s	1,000s	1,000s	1,000s	1,000s	1,000s
Year/Gear/Target								
2003								
Hook and line								
Sablefish	n.a.	.0	.0	.4	.0	.0	.0	.0
Pacific cod	551.5	.0	13.5	1.8	11.6	63.6	.0	.0
Turbot	20.4	.0	.0	.1	.1	.0	.0	.0
Total	573.5	.0	13.5	2.4	11.6	63.7	.0	.0
Pot								
Sablefish	2.8	.0	.0	142.4	.2	.0	.0	.0
Pacific cod	2.2	.0	.1	.5	87.5	26.1	.0	.0
Total	4.9	.0	.1	142.8	87.7	26.2	.0	.0
Trawl								
Pollock								
bottom	1.9	18.2	.0	.0	.0	.0	1.0	1.8
pelagic	96.6	1,028.5	.1	.0	.8	.8	46.3	190.9
Pacific cod	1,233.6	13.8	9.7	1.4	181.9	80.6	4.2	1.0
Arrowtooth	46.1	.1	.0	.5	5.1	.5	1.6	.0
Flathd. sole	151.7	2.5	.1	.2	321.2	231.9	.1	.2
Rock sole	903.9	2.9	53.7	.4	239.4	39.5	.6	.0
Turbot	7.8	.0	.0	.1	2.8	1.8	.0	.0
Yellowfin	764.7	33.0	28.1	.3	240.1	346.3	.3	.5
Flat, other	21.0	.0	.0	.0	.5	.0	.2	.0
Rockfish	66.8	.0	1.7	2.5	.3	.0	.0	.0
Atka mack.	88.6	.0	.4	.2	.0	.0	.8	.3
Total	3,390.7	1,099.0	93.8	5.6	995.9	703.1	55.0	194.7
All gear								
Total	3,969.1	1,099.0	107.3	150.8	1,095.2	792.9	55.0	194.7

Notes: These estimates include only catches counted against federal TACs. Totals may include additional categories. The estimates of halibut bycatch mortality are based on the International Pacific Halibut Commission discard mortality rates that were used for in-season management. The halibut Individual Fishing Quota program allows retention of halibut in the hook-and-line groundfish fisheries, making true halibut bycatch numbers unavailable. This is particularly a problem in the Bering Sea and Aleutian Islands sablefish hook-and-line fishery. Therefore, estimates of halibut bycatch mortality are not included in this table for that fishery.

Source: Blend estimates (2002), Catch Accounting System (2003), National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 15. Prohibited species bycatch rates in the Gulf of Alaska by species, gear, and groundfish target fishery, 2002-03 (Metric tons (t)).

	Halibut mort.	Herring	Red king crab	Other k.crab	Bairdi	Other tanner	Chinook	Other salmon
	t/t	t/t	No./t	No./t	No./t	No./t	No./t	No./t
Year/Gear/Target								
2002								
Hook and line								
Sablefish	n.a.	.000	.000	.000	.000	.000	.000	.000
Pacific cod	n.a.	.000	.001	.000	.001	.003	.000	.000
Arrowtooth	n.a.	.000	.000	.000	.000	.078	.000	.000
Flat deep	n.a.	.000	.000	.000	.000	.000	.000	.000
Flat shallow	n.a.	.000	.000	.000	.000	.000	.000	.000
Rockfish	n.a.	.000	.000	.024	.001	.003	.000	.000
Total	n.a.	.000	.001	.000	.001	.002	.000	.000
Pot								
Pacific cod	.000	.000	.001	.000	11.802	.336	.000	.000
Total	.000	.000	.001	.000	11.624	.331	.000	.000
Trawl								
Pollock								
bottom	.000	.000	.000	.000	.085	.041	.127	.043
pelagic	.000	.000	.000	.000	.000	.000	.094	.010
Pacific cod	.013	.000	.000	.001	.323	.032	.267	.002
Arrowtooth	.025	.000	.000	.004	1.051	.005	.045	.057
Flathd. sole	.019	.000	.000	.000	9.782	.425	.000	.027
Rex sole	.039	.000	.000	.012	.981	.038	.187	.009
Flat deep	.044	.000	.000	.085	.341	.264	.000	.000
Flat shallow	.061	.000	.001	.024	2.500	.008	.033	.041
Rockfish	.012	.000	.000	.017	.040	.000	.062	.052
Total	.016	.000	.000	.007	.684	.020	.101	.028
All gear								
Total	.012	.000	.000	.006	1.103	.032	.079	.022

Table 15. Continued.

Year/Gear/Target	Halibut mort. t/t	Herring t/t	Red king crab No./t	Other k.crab No./t	Bairdi No./t	Other tanner No./t	Chinook No./t	Other salmon No./t
2003								
Hook and line								
Sablefish	n.a.	.000	.006	.044	.005	.008	.000	.034
Total	n.a.	.000	.006	.044	.005	.008	.000	.034
Pot								
Pacific cod	.001	.000	.000	.000	.477	.000	.000	.000
Total	.001	.000	.000	.000	.477	.000	.000	.000
Trawl								
Pollock								
bottom	.003	.000	.000	.000	.000	.000	.239	.012
pelagic	.000	.000	.000	.000	.000	.000	.080	.138
Sablefish	.010	.000	.000	.000	.000	.000	.000	.000
Pacific cod	.029	.000	.000	.000	.159	.055	.199	.000
Arrowtooth	.021	.000	.000	.006	1.456	.000	.180	.047
Flathd. sole	.030	.000	.000	.138	4.463	.045	.157	.005
Rex sole	.023	.000	.000	.000	2.779	.000	.280	.050
Flat deep	.025	.000	.000	.000	.000	.000	.000	.000
Flat shallow	.063	.000	.000	.000	7.013	.045	.014	.000
Rockfish	.011	.000	.002	.000	.007	.000	.037	.102
Total	.015	.000	.000	.005	1.010	.011	.117	.076
All gear								
Total	.013	.000	.001	.005	.911	.009	.098	.065

Notes: Totals may include additional categories. The target, determined by AFSC staff, is based on processor, week, processing mode, NMFS area and gear. These estimates include only catch counted against federal TACs. International Pacific Halibut Commission discard mortality rates are used to estimate halibut mortality. The halibut Individual Fishing Quota program allows retention of halibut in the hook- and-line groundfish fisheries making true halibut bycatch numbers unavailable. No prohibited species bycatch numbers were available for the sablefish fishery.

Source: Blend estimates (2002), Catch Accounting System (2003), National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 16. Prohibited species bycatch rates in the Bering Sea and Aleutian Islands by species, gear, and groundfish target fishery, 2002-03 (Metric tons (t)).

	Halibut mort.	Herring	Red king crab	Other k.crab	Bairdi	Other tanner	Chinook	Other salmon
	t/t	t/t	No./t	No./t	No./t	No./t	No./t	No./t
Year/Gear/Target								
2002								
Hook and line								
Sablefish	n.a.	.000	.000	.494	.002	.048	.000	.002
Pacific cod	.005	.000	.186	.119	.121	.537	.000	.000
Arrowtooth	.002	.000	.000	.000	.000	.000	.000	.000
Turbot	.019	.000	.002	.037	.025	.255	.001	.018
Rockfish	.009	.000	.003	.378	.000	.007	.000	.000
Total	.005	.000	.177	.122	.116	.515	.000	.001
Pot								
Sablefish	.004	.000	.000	21.248	.123	.930	.000	.008
Pacific cod	.000	.000	.062	.630	5.094	17.802	.000	.000
Total	.001	.000	.059	1.632	4.856	16.993	.000	.000
Trawl								
Pollock								
bottom	.003	.000	.125	.019	1.274	.426	.012	.025
pelagic	.000	.000	.000	.000	.000	.000	.022	.050
Pacific cod	.012	.000	.243	.011	2.751	1.579	.040	.011
Arrowtooth	.019	.000	.000	.945	2.283	9.641	.023	.007
Flathd. sole	.010	.000	.029	.043	10.542	7.696	.000	.006
Rock sole	.017	.000	1.330	.010	7.548	2.668	.013	.003
Turbot	.007	.000	.000	.294	1.099	13.749	.000	.000
Yellowfin	.008	.000	.144	.015	2.349	5.958	.003	.004
Flat, other	.019	.000	.000	.487	1.693	7.832	.000	.009
Rockfish	.005	.000	.000	.480	.012	.176	.000	.000
Atka mack.	.001	.000	.004	.032	.000	.000	.016	.000
Total	.002	.000	.054	.008	.571	.582	.020	.041
All gear								
Total	.002	.000	.063	.029	.572	.705	.019	.038

Table 16. Continued.

Year/Gear/Target	Halibut mort. t/t	Herring t/t	Red king crab No./t	Other k.crab No./t	Bairdi No./t	Other tanner No./t	Chinook No./t	Other salmon No./t
2003								
Hook and line								
Sablefish	n.a.	.000	.000	.290	.000	.000	.000	.011
Pacific cod	.004	.000	.101	.014	.086	.476	.000	.000
Turbot	.010	.000	.000	.069	.032	.016	.005	.009
Total	.004	.000	.098	.017	.085	.464	.000	.000
Pot								
Sablefish	.003	.000	.037	165.53	.203	.054	.000	.000
Pacific cod	.000	.000	.003	.022	4.235	1.263	.000	.000
Total	.000	.000	.004	6.634	4.074	1.215	.000	.000
Trawl								
Pollock								
bottom	.000	.001	.000	.000	.001	.000	.063	.113
pelagic	.000	.001	.000	.000	.001	.001	.032	.131
Pacific cod	.013	.000	.105	.015	1.969	.872	.046	.011
Arrowtooth	.020	.000	.000	.208	2.235	.238	.717	.004
Flathd. sole	.008	.000	.004	.008	17.045	12.308	.003	.009
Rock sole	.025	.000	1.482	.011	6.602	1.089	.016	.000
Turbot	.011	.000	.000	.142	4.016	2.582	.000	.000
Yellowfin	.007	.000	.257	.002	2.199	3.171	.002	.005
Flat, other	.024	.000	.000	.052	.594	.000	.189	.000
Rockfish	.005	.000	.136	.197	.023	.000	.000	.000
Atka mack.	.001	.000	.007	.004	.000	.000	.013	.006
Total	.002	.001	.052	.003	.552	.390	.030	.108
All gear								
Total	.002	.001	.055	.077	.558	.404	.028	.099

Notes: These estimates include only catches counted against federal TACs. Totals may include additional categories. The estimates of halibut bycatch mortality are based on the International Pacific Halibut Commission discard mortality rates that were used for in-season management. The halibut Individual Fishing Quota program allows retention of halibut in the hook-and-line groundfish fisheries, making true halibut bycatch numbers unavailable. This is particularly a problem in the Bering Sea and Aleutian Islands sablefish hook-and-line fishery. Therefore, estimates of halibut bycatch mortality are not included in this table for that fishery.

Source: Blend estimates (2002), Catch Accounting System (2003), National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 17. Groundfish catch off Alaska by area, residency, and species, 1999-2003, (1,000 metric tons, round weight).

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Alaska	Other	Unknown	Alaska	Other	Unknown	Alaska	Other	Unknown
Species/Year									
All groundfish									
1999	90	136	0	43	1,382	0	133	1,518	1
2000	90	116	1	52	1,556	0	142	1,672	1
2001	70	111	0	46	1,766	3	116	1,877	3
2002	67	98	0	45	1,889	2	112	1,987	2
2003	72	116	0	42	1,928	0	114	2,044	0
Pollock									
1999	31	62	0	7	983	0	39	1,045	1
2000	31	44	0	11	1,123	0	42	1,167	0
2001	29	42	0	16	1,370	2	45	1,412	2
2002	19	31	0	17	1,464	1	36	1,496	1
2003	18	31	0	14	1,478	0	32	1,509	0
Sablefish									
1999	6	6	0	0	1	0	6	7	0
2000	7	7	0	1	1	0	7	8	0
2001	6	7	0	1	1	0	6	8	0
2002	6	7	0	1	1	0	7	8	0
2003	7	8	0	1	1	0	7	9	0
Pacific cod									
1999	40	28	0	24	149	0	64	177	0
2000	33	21	0	24	167	0	57	188	0
2001	22	20	0	17	159	1	39	179	1
2002	25	17	0	19	178	0	44	195	0
2003	30	22	0	18	191	0	48	213	0
Flatfish									
1999	7	18	0	7	154	0	14	172	0
2000	11	26	0	8	182	0	19	209	0
2001	8	23	0	3	137	0	12	160	0
2002	10	24	0	7	156	0	17	180	0
2003	8	34	0	6	154	0	14	187	0
Rockfish									
1999	5	19	0	0	20	0	5	39	0
2000	6	15	0	2	15	0	8	29	0
2001	4	17	0	3	15	0	6	31	0
2002	5	16	0	0	17	0	6	33	0
2003	6	18	0	0	21	0	6	38	0
Atka mackerel									
1999	0	0	0	0	56	0	0	56	0
2000	0	0	0	3	45	0	3	45	0
2001	0	0	0	5	57	0	5	57	0
2002	0	0	0	0	45	0	0	45	0
2003	0	0	0	2	57	0	2	57	0

Notes: These estimates include only catch counted against federal TACS. Catch delivered to motherships is classified by the residence of the owner of the mothership. All other catch is classified by the residence of the owner of the fishing vessel. All groundfish include additional species categories.

Source: Blend estimates (1999-2002), Catch Accounting System estimates (2003), fish tickets, CFEC vessel data, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 18. Ex-vessel prices* in the groundfish fisheries off Alaska by area, gear, and species, 1999-2003 ($/lb, round weight).

	Gulf of Alaska		Bering Sea and Aleutian		All Alaska
	Fixed	Trawl	Fixed	Trawl	All gear***
Pollock					
1999	.099	.099	-	.096	.097
2000	.148	.135	-	.118	.120
2001	.081	.127	.038	.109	.111
2002	.068	.107	-	.116	.115
2003	.081	.095	.049	.107	.106
Sablefish					
1999	2.014	1.873	1.945	.884 **	1.975
2000	2.659	1.764	2.037	1.016 **	2.558
2001	2.248	1.769	1.842	.890 **	2.148
2002	2.148	1.682	2.177	.934 **	2.112
2003	2.435	1.748	2.229	.920 **	2.371
Pacific cod					
1999	.312	.234	.270	.238	.261
2000	.338	.326	.302	.293	.314
2001	.299	.258	.244	.235	.260
2002	.287	.234	.213	.193	.245
2003	.307	.283	.290	.268	.283
Flatfish					
1999	.190	.141	.309	.129 **	.130
2000	.157	.151	.234	.133 **	.134
2001	-	.161	.240	.124 **	.126
2002	-	.124	.157	.143 **	.142
2003	-	.116	.188	.137 **	.136
Rockfish					
1999	.487	.117 **	.613	.105 **	.132
2000	.464	.140 **	.607	.122 **	.160
2001	.642	.092 **	.577	.126 **	.133
2002	.714	.127 **	.609	.122 **	.152
2003	.707	.147 **	.614	.128 **	.157
Atka mackerel					
1999	-	.135 **	-	.086 **	.087
2000	-	.104 **	-	.096 **	.096
2001	-	.174 **	-	.167 **	.167
2002	-	.217 **	-	.134 **	.134
2003	-	.163 **	-	.099 **	.100

* Prices do not include the value added by at-sea processing; therefore they reflect prices prior to processing. Prices do reflect the value added by dressing fish at sea, where the fish have not been frozen. Except where noted unfrozen landings price is calculated as landed value divided by estimated or actual round weight.

** Since this category is not well represented by on-shore landings, a price was calculated from product-report prices. The price in this case is the value of the product divided by the calculated round weight and multiplied by a constant .4 to correct for value added by processing.

*** This column is the weighted average of the other columns.

Source: Blend estimates (1999-2002) Catch Accounting System (2003), ADFG fish tickets, Commercial Operators Annual Report (COAR), weekly processor reports, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 19. Ex-vessel value of the groundfish catch off Alaska by area, catcher category, gear, and species, 1999-2003, ($ millions).

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total
All gear									
All species									
1999	106.4	20.4	126.8	132.2	202.6	334.8	238.6	223.0	461.5
2000	125.8	20.1	145.8	192.1	259.0	451.1	317.9	279.1	597.0
2001	97.4	16.5	113.9	200.0	270.6	470.6	297.5	287.1	584.5
2002	106.3	19.4	125.7	223.0	269.7	492.7	329.3	289.1	618.4
2003	106.5	20.6	127.1	222.5	258.8	481.3	329.0	279.4	608.4
Pollock									
1999	22.3	.0	22.4	103.2	86.4	189.5	125.5	86.4	211.9
2000	20.2	.1	20.2	155.0	122.8	277.8	175.2	122.8	298.0
2001	19.1	.0	19.1	177.0	138.9	315.9	196.1	138.9	335.0
2002	11.9	.0	12.0	197.5	149.4	346.9	209.5	149.4	358.9
2003	10.3	.1	10.4	181.2	120.6	301.9	191.5	120.7	312.2
Sablefish									
1999	44.5	7.7	52.2	2.0	2.7	4.7	46.6	10.4	57.0
2000	60.3	9.0	69.2	3.0	3.6	6.6	63.2	12.6	75.8
2001	47.9	7.4	55.2	4.5	2.2	6.7	52.3	9.6	61.9
2002	48.6	8.9	57.5	4.5	2.4	6.9	53.0	11.3	64.4
2003	62.0	10.0	72.0	6.4	2.6	9.0	68.3	12.6	80.9
Pacific cod									
1999	35.2	7.9	43.1	25.9	72.8	98.7	61.1	80.7	141.8
2000	37.5	6.6	44.1	32.8	83.9	116.6	70.3	90.4	160.7
2001	24.9	5.6	30.4	17.7	78.7	96.4	42.6	84.2	126.8
2002	39.3	5.8	45.2	20.2	70.2	90.4	59.6	76.0	135.6
2003	26.8	4.8	31.6	34.0	89.0	123.0	60.8	93.8	154.6
Flatfish									
1999	.8	1.2	2.0	.9	27.7	28.6	1.7	28.9	30.6
2000	2.8	1.6	4.4	1.3	36.2	37.4	4.1	37.8	41.9
2001	2.3	1.4	3.6	.6	27.0	27.6	2.9	28.4	31.3
2002	2.0	1.5	3.5	.5	33.5	34.0	2.5	35.0	37.5
2003	1.4	2.2	3.6	.6	31.7	32.3	2.0	34.0	35.9
Rockfish									
1999	3.5	3.5	7.0	.1	3.1	3.2	3.5	6.6	10.2
2000	4.9	2.8	7.7	.1	3.0	3.1	5.0	5.8	10.8
2001	3.3	2.1	5.4	.2	2.7	2.9	3.5	4.8	8.3
2002	4.3	3.0	7.3	.2	3.0	3.2	4.5	6.0	10.5
2003	4.7	3.1	7.8	.2	3.8	4.0	4.8	6.9	11.7
Atka mackerel									
1999	.0	.0	.1	.0	9.7	9.8	.0	9.8	9.8
2000	.0	.0	.0	.0	9.4	9.4	.0	9.5	9.5
2001	-	.0	.0	.0	21.0	21.0	.0	21.1	21.1
2002	.0	.0	.0	.1	11.1	11.1	.1	11.1	11.2
2003	.0	.1	.1	.1	9.7	9.8	.1	9.8	9.9

Table 19. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total
Trawl									
All species									
1999	42.2	7.5	49.7	121.5	138.0	259.5	163.7	145.6	309.3
2000	41.4	7.7	49.1	177.9	184.5	362.4	219.4	192.2	411.6
2001	35.1	6.5	41.6	187.5	201.7	389.2	222.6	208.1	430.7
2002	24.9	7.3	32.2	209.4	210.0	419.4	234.3	217.3	451.6
2003	31.7	8.0	39.7	203.8	184.2	388.0	235.4	192.2	427.7
Pollock									
1999	20.8	.0	20.8	103.2	85.7	188.8	124.0	85.7	209.7
2000	18.5	.1	18.5	155.0	121.8	276.8	173.5	121.9	295.4
2001	19.1	.0	19.1	177.0	137.8	314.8	196.1	137.8	333.9
2002	11.9	.0	12.0	197.5	148.1	345.6	209.5	148.1	357.6
2003	10.3	.1	10.3	181.2	119.5	300.7	191.5	119.6	311.1
Sablefish									
1999	3.0	1.6	4.6	.0	.5	.5	3.0	2.1	5.1
2000	1.2	1.9	3.0	.0	.6	.6	1.2	2.5	3.6
2001	1.0	1.4	2.4	.0	.7	.7	1.0	2.1	3.1
2002	1.0	2.4	3.3	.0	.5	.6	1.0	2.9	3.9
2003	1.9	1.8	3.7	.0	.3	.3	1.9	2.1	4.0
Pacific cod									
1999	15.9	1.4	17.3	17.4	13.8	31.3	33.4	15.2	48.5
2000	16.8	1.4	18.2	21.7	16.8	38.6	38.5	18.3	56.8
2001	11.3	1.7	13.0	9.9	14.0	23.8	21.2	15.7	36.9
2002	7.6	.5	8.1	11.3	14.9	26.2	18.9	15.4	34.3
2003	14.6	.8	15.4	21.8	20.1	41.9	36.4	20.9	57.3
Flatfish									
1999	.8	1.2	2.0	.8	25.4	26.2	1.6	26.6	28.2
2000	2.4	1.6	4.0	1.2	33.1	34.3	3.6	34.7	38.2
2001	2.3	1.4	3.6	.5	25.8	26.3	2.8	27.2	30.0
2002	2.0	1.5	3.5	.4	32.6	33.0	2.5	34.1	36.5
2003	1.4	2.2	3.6	.6	30.9	31.5	2.0	33.1	35.0
Rockfish									
1999	1.7	3.3	5.0	.0	2.9	2.9	1.7	6.2	7.9
2000	2.6	2.7	5.3	.0	2.7	2.7	2.6	5.4	8.0
2001	1.4	2.0	3.4	.0	2.4	2.4	1.4	4.4	5.8
2002	2.3	2.8	5.2	.1	2.8	2.9	2.4	5.7	8.1
2003	3.2	2.8	6.0	.0	3.6	3.6	3.3	6.4	9.7
Atka mackerel									
1999	.0	.0	.1	.0	9.7	9.8	.0	9.8	9.8
2000	.0	.0	.0	.0	9.4	9.4	.0	9.5	9.5
2001	-	.0	.0	.0	21.0	21.0	.0	21.0	21.0
2002	.0	.0	.0	.1	11.1	11.1	.1	11.1	11.2
2003	.0	.1	.1	.1	9.7	9.8	.1	9.8	9.9

Table 19. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total
Hook and line									
All species									
1999	52.5	10.0	62.5	2.5	62.6	65.0	55.0	72.6	127.6
2000	69.4	11.6	81.0	3.7	72.8	76.5	73.2	84.3	157.5
2001	53.9	9.0	62.9	5.6	67.2	72.7	59.4	76.2	135.6
2002	71.7	11.8	83.5	7.7	58.7	66.4	79.4	70.5	149.9
2003	66.6	12.5	79.1	3.9	73.6	77.5	70.5	86.1	156.6
Sablefish									
1999	41.6	6.1	47.6	2.0	2.2	4.2	43.6	8.3	51.8
2000	59.1	7.1	66.2	3.0	3.1	6.0	62.1	10.1	72.2
2001	46.9	6.0	52.9	4.4	1.5	6.0	51.3	7.5	58.8
2002	47.6	6.6	54.2	4.4	1.8	6.3	52.0	8.4	60.5
2003	60.1	8.2	68.3	3.4	2.3	5.7	63.4	10.5	73.9
Pacific cod									
1999	7.6	3.8	11.4	.2	57.1	57.3	7.8	60.8	68.7
2000	5.9	4.3	10.2	.6	65.3	65.9	6.5	69.6	76.1
2001	5.1	2.9	8.0	.9	63.0	63.8	5.9	65.8	71.8
2002	22.1	5.0	27.1	3.0	54.4	57.4	25.2	59.3	84.5
2003	4.7	3.9	8.6	.4	67.9	68.3	5.1	71.8	76.9
Flatfish									
1999	.0	.0	.0	.1	2.3	2.4	.1	2.3	2.4
2000	.5	.0	.5	.1	3.1	3.2	.5	3.1	3.7
2001	-	.0	.0	.1	1.2	1.3	.1	1.2	1.3
2002	-	.0	.0	.0	1.0	1.0	.0	1.0	1.0
2003	-	.0	.0	-	.9	.9	-	.9	.9
Rockfish									
1999	1.8	.2	2.0	.1	.2	.3	1.9	.4	2.3
2000	2.2	.2	2.4	.1	.3	.4	2.3	.5	2.8
2001	1.9	.2	2.1	.2	.2	.4	2.1	.4	2.5
2002	2.0	.2	2.1	.2	.2	.3	2.1	.3	2.5
2003	1.5	.3	1.7	.1	.2	.3	1.6	.5	2.1
Pot									
Pacific cod									
1999	11.6	2.8	14.5	8.2	1.9	10.1	19.9	4.7	24.6
2000	14.9	.8	15.7	10.4	1.7	12.2	25.3	2.5	27.8
2001	8.4	1.0	9.4	7.0	1.7	8.7	15.4	2.7	18.1
2002	9.6	.3	9.9	5.9	1.0	6.9	15.5	1.3	16.8
2003	7.5	.1	7.6	11.9	1.0	12.8	19.4	1.0	20.4

Note: These estimates include only catch counted against federal TACs. Ex-vessel value is calculated using prices on Table 18. Please refer to Table 18 for a description of the price derivation. All groundfish includes additional species categories.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), CFEC fish tickets, Commercial Operators Annual Report (COAR), weekly processor reports. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 20. Ex-vessel value of Alaska groundfish delivered to shoreside processors by area, gear and catcher-vessel length, 1996-2003. ($ millions)

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length			Vessel length			Vessel length		
	<60	60-125	>=125	<60	60-125	>=125	<60	60-125	>=125
Gear/Year									
Fixed									
1996	40.1	28.3	.2	1.5	8.1	.9	41.7	36.4	1.1
1997	43.3	27.7	.1	.9	5.8	1.3	44.3	33.4	1.4
1998	31.4	20.0	.1	1.0	3.6	.8	32.4	23.5	.9
1999	41.1	22.0	-	1.0	5.9	2.1	42.1	27.8	2.1
2000	49.9	28.1	.7	2.1	6.5	3.0	52.0	34.7	3.7
2001	38.7	18.3	-	3.4	7.6	1.2	42.1	25.9	1.2
2002	40.4	17.1	-	4.0	6.1	1.2	44.4	23.2	1.2
2003	50.6	23.7	-	4.0	10.4	2.7	54.6	34.1	2.7
Trawl									
1996	9.1	19.0	1.3	-	43.3	43.8	9.1	62.3	45.1
1997	11.5	28.1	4.2	-	42.1	56.6	11.5	70.1	60.8
1998	8.0	23.8	3.9	.2	26.2	38.0	8.2	50.1	41.9
1999	8.6	32.0	2.0	.3	43.0	61.2	8.9	75.0	63.2
2000	8.8	30.4	-	-	64.5	78.2	8.8	94.9	78.2
2001	8.5	27.0	-	.7	59.7	82.0	9.2	86.7	82.0
2002	4.3	18.8	-	2.0	67.1	88.6	6.3	85.9	88.6
2003	2.6	19.7	-	1.4	59.0	71.9	4.0	78.7	71.9
All gear									
1996	49.3	47.3	1.5	1.5	51.4	44.7	50.8	98.7	46.2
1997	54.8	55.8	4.3	.9	47.8	57.9	55.7	103.6	62.2
1998	39.4	43.8	4.0	1.2	29.8	38.8	40.6	73.6	42.8
1999	49.7	54.0	2.0	1.3	48.9	63.4	51.0	102.9	65.3
2000	58.7	58.6	.7	2.1	71.0	81.2	60.7	129.6	81.9
2001	47.2	45.4	-	4.1	67.2	83.1	51.3	112.6	83.1
2002	44.6	35.9	-	6.0	73.2	89.8	50.7	109.1	89.8
2003	53.2	43.4	-	5.4	69.4	74.6	58.6	112.8	74.6

Note: These estimates include only catch counted against federal TACs.

Source: CFEC Fishtickets, NMFS permits, CFEC permits. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 20.1. Ex-vessel value per catcher vessel for Alaska groundfish delivered to shoreside processors by area, gear and catcher-vessel length, 1996-2003. ($ thousands)

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length			Vessel length			Vessel length		
	<60	60-124	>=125	<60	60-124	>=125	<60	60-124	>=125
Fixed									
1996	47	168	34	26	72	59	47	177	72
1997	49	186	13	19	61	88	49	184	70
1998	39	135	16	21	44	39	40	134	40
1999	50	127	-	26	64	92	50	136	92
2000	59	170	73	37	73	125	60	174	124
2001	52	164	-	45	99	82	54	166	82
2002	60	158	-	60	108	84	65	169	84
2003	74	230	-	59	144	137	78	232	137
Trawl									
1996	152	246	83	-	541	1,509	152	582	1,555
1997	188	319	167	-	592	1,825	188	638	1,960
1998	141	265	177	29	403	1,187	139	451	1,308
1999	159	395	75	56	566	1,913	156	695	1,975
2000	157	454	-	-	859	2,443	157	855	2,443
2001	170	392	-	55	796	2,827	165	788	2,827
2002	89	324	-	120	919	3,055	115	834	3,055
2003	76	333	-	92	798	2,479	107	787	2,479
All gear									
1996	56	200	70	26	268	994	56	327	1,028
1997	60	245	137	19	290	1,259	60	367	1,219
1998	48	190	142	22	214	826	49	272	873
1999	59	225	75	30	298	1,152	60	349	1,187
2000	68	266	73	37	433	1,449	69	438	1,321
2001	62	261	-	46	445	1,933	64	435	1,933
2002	65	227	-	73	563	2,088	72	470	2,088
2003	77	275	-	66	482	1,736	82	468	1,736

Note: These estimates include only catch counted against federal TACs.

Source: CFEC Fishtickets, NMFS permits, CFEC permits. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 21. Ex-vessel value of the groundfish catch off Alaska by area, residency, and species, 1999-2003, ($ millions).

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Alaska	Other	Unknown	Alaska	Other	Unknown	Alaska	Other	Unknown
All groundfish									
1999	63.2	63.6	.3	19.2	315.5	.1	82.5	379.0	.4
2000	77.2	68.3	.3	22.9	428.5	.0	100.2	496.8	.3
2001	54.8	58.8	.3	18.9	451.6	1.0	73.7	510.4	1.3
2002	66.9	58.3	.5	17.3	477.0	.5	84.3	535.3	1.0
2003	62.8	64.0	.3	16.5	464.8	.1	79.3	528.8	.3
Pollock									
1999	7.5	14.8	.0	1.3	188.2	.1	8.8	203.0	.1
2000	8.1	12.1	.1	2.5	275.3	.0	10.6	287.3	.1
2001	7.7	11.5	.0	3.7	311.7	.5	11.4	323.1	.5
2002	4.4	7.5	.0	3.9	342.5	.4	8.4	350.1	.4
2003	3.7	6.6	.0	3.0	298.9	.0	6.7	305.5	.0
Sablefish									
1999	27.7	24.3	.2	1.7	3.1	.0	29.4	27.4	.2
2000	37.0	32.0	.1	2.6	4.4	.0	39.7	36.4	.1
2001	28.3	26.8	.2	3.1	4.5	.0	31.4	31.3	.2
2002	30.0	27.3	.2	3.7	5.3	.0	33.7	32.6	.3
2003	36.6	35.3	.1	2.8	6.1	.0	39.4	41.4	.2
Pacific cod									
1999	25.4	17.7	.0	14.6	84.1	.0	40.0	101.8	.0
2000	27.4	16.7	.1	15.2	101.4	.0	42.6	118.0	.1
2001	16.4	13.9	.1	9.3	86.6	.4	25.7	100.5	.6
2002	29.2	15.8	.2	8.5	81.9	.1	37.7	97.7	.3
2003	18.3	13.2	.1	9.7	113.4	.0	28.0	126.5	.1
Flatfish									
1999	.7	1.6	.0	1.6	27.0	.0	2.3	28.6	.0
2000	1.8	2.7	.0	1.6	35.8	.0	3.4	38.5	.0
2001	1.0	2.6	.0	.7	26.9	.0	1.7	29.6	.0
2002	1.1	2.4	.0	1.1	32.9	.0	2.2	35.3	.0
2003	.8	2.8	.0	.8	31.5	.0	1.6	34.4	.0
Rockfish									
1999	1.8	5.1	.0	.1	3.1	.0	1.9	8.2	.0
2000	2.9	4.8	.0	.5	2.6	.0	3.3	7.4	.0
2001	1.5	4.0	.0	.5	2.3	.0	2.0	6.3	.0
2002	2.2	5.1	.0	.1	3.1	.0	2.3	8.2	.0
2003	2.3	5.5	.0	.1	3.9	.0	2.4	9.3	.0
Atka mackerel									
1999	.0	.1	.0	.0	9.7	.0	.0	9.8	.0
2000	.0	.0	.0	.4	9.0	.0	.4	9.0	.0
2001	.0	.0	.0	1.5	19.5	.0	1.5	19.6	.0
2002	.0	.0	.0	.0	11.1	.0	.0	11.1	.0
2003	.0	.1	.0	.1	9.7	.0	.1	9.8	.0

Note: These estimates include only catches counted against federal TACs. Ex-vessel value is calculated using prices on Table 18. Please refer to Table 18 for a description of the price derivation. Catch delivered to motherships is classified by the residence of the owner of the mothership. All other catch is classified by the residence of the owner of the fishing vessel. All groundfish include additional species categories.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), Commercial Operators Annual Report (COAR), ADFG fish tickets, weekly processor reports. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 22. Ex-vessel value of groundfish delivered to shoreside processors by processor group, 1997-2003. ($ millions)

	1997	1998	1999	2000	2001	2002	2003
Processor group:							
Alaska Peninsula/Aleutians	22.8	16.7	23.7	25.8	25.7	28.2	34.9
Bering Sea Pollock Processors	103.8	72.1	103.2	153.7	157.6	174.7	173.3
Kodiak	30.8	26.9	32.3	36.6	30.9	40.5	26.3
South Central	27.7	15.5	18.3	25.0	18.1	18.1	23.7
Southeastern	48.4	32.2	33.6	39.5	30.9	29.6	34.6
TOTAL	233.6	163.6	211.2	280.6	263.2	291.2	292.9

Table 22.1 Ex-vessel value of groundfish as a percentage of the ex-vessel value of all species delivered to shoreside processors by processor group, 1997-2003. (percent)

	1997	1998	1999	2000	2001	2002	2003
Processor group:							
Alaska Peninsula/Aleutians	16.1%	10.8%	9.8%	16.0%	22.1%	23.1%	21.4%
Bering Sea Pollock Processors	73.5%	56.6%	56.2%	77.1%	81.5%	77.9%	75.1%
Kodiak	43.4%	39.8%	40.1%	48.0%	45.3%	55.8%	40.6%
South Central	20.7%	18.8%	15.2%	23.1%	19.6%	18.8%	22.3%
Southeastern	26.8%	22.4%	18.6%	23.3%	18.9%	22.5%	23.9%
TOTAL	34.0%	27.6%	25.5%	38.3%	40.8%	44.6%	40.8%

Note: This table includes the value of groundfish purchases reported by processing plants, as well as by other entities, such as markets and restaurants, that normally would not report sales of groundfish products. Keep this in mind when comparing ex-vessel values in this table to gross processed-product values in Table 25. The data are for catch from the EEZ and State waters. The processor groups are defined as follows:
"Bering Sea Pollock Processors" are the AFA inshore pollock processors including the two AFA floating processors.
"Alaska Peninsula/Aleutian" are other processors on the Alaska Peninsula or in the Aleutian Islands.
"Kodiak" are processors on Kodiak Island.
"South Central" are processors west of Yakutat and on the Kenai Peninsula.
"Southeastern" are processors located from Yakutat south.

Source: ADFG Commercial Operators Annual Report, ADFG intent to process.bNational Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 23. Gross product value of Alaska groundfish by area and processing mode, 1998-2003 ($ millions).

	Gulf of Alaska		Bering Sea and Aleutian			All Alaska
	At-sea	Shoreside	Motherships	Catcher/ processors	Shoreside	Total
1998	28.3	237.2	58.8	539.8	160.7	1,024.8
1999	43.0	207.6	58.1	579.9	289.4	1,178.1
2000	41.8	199.1	81.5	624.1	399.4	1,345.8
2001	26.9	176.9	90.5	663.9	432.6	1,390.8
2002	36.5	170.0	99.0	710.7	466.5	1,482.8
2003	39.5	179.5	77.6	750.6	471.5	1,518.7

Note: For shoreside processors, these estimates include production resulting from catch from federal and state of Alaska fisheries. For at-sea processors, they include production only from catch counted against federal TACs. Catcher/processors that at times during a year act like motherships are classified as catcher/processors for the entire year. For shoreside processors the area represents the location of the plant, not necessarily the area of the catch.

Source: NMFS weekly production reports and ADFG Commercial Operators Annual Reports (COAR). National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 24. Gross product value of Alaska groundfish by catcher/processor category, vessel length, and area, 1998-2003 ($ millions).

	Gulf of Alaska		Bering Sea and Aleutian					
	Vessel length		Vessel length					
	<125	>=125	<125	125-165	>165	165-235	236-260	>260
Fixed Gear								
1998	6.7	1.7	18.0	46.4	39.3	-	-	-
1999	11.4	8.5	21.8	51.6	46.3	-	-	-
2000	11.6	3.7	22.6	52.7	46.1	-	-	-
2001	8.4	3.3	18.3	49.5	42.9	-	-	-
2002	10.9	5.5	18.0	49.3	35.1	-	-	-
2003	9.0	5.9	26.9	68.7	45.1	-	-	-
Fillet Trawl								
1998	-	2.6	-	-	-	62.0	33.0	-
1999	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-
H&G Trawl								
1998	6.8	10.5	17.0	17.3	70.2	-	-	-
1999	9.2	13.3	19.9	23.6	70.8	-	-	-
2000	9.4	15.8	24.3	27.4	85.7	-	-	-
2001	6.3	8.8	18.6	21.3	96.2	-	-	-
2002	5.6	14.1	26.3	27.8	93.8	-	-	-
2003	8.0	16.3	27.3	24.7	91.2	-	-	-
Surimi Trawl								
1998	-	-	-	-	-	-	-	195.7
1999	-	-	-	-	-	-	-	249.0
2000	-	-	-	-	-	-	-	258.5
2001	-	-	-	-	-	-	-	314.5
2002	-	-	-	-	-	-	-	344.6
2003	-	-	-	-	-	-	-	353.0
All Trawl								
1998	6.8	13.1	17.0	17.3	70.2	62.0	33.0	195.7
1999	9.2	13.3	19.9	23.6	70.8	-	-	249.0
2000	9.4	15.8	24.3	27.4	85.7	-	-	258.5
2001	6.3	8.8	18.6	21.3	96.2	-	-	314.5
2002	5.6	14.1	26.3	27.8	93.8	-	-	344.6
2003	8.0	16.3	27.3	24.7	91.2	-	-	353.0

Note: These estimates include only catch counted against federal TACs.

Source: NMFS weekly production reports, Commercial Operators Annual Reports (COAR), and NMFS permits. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 24.1 Gross product value per vessel of Alaska groundfish by catcher/processor category, vessel length, and area 1998-2003 ($ millions).

	Gulf of Alaska		Bering Sea and Aleutian					
	Vessel length		Vessel length					
	<125	>=125	<125	125-165	>165	165-235	236-260	>260
Fixed Gear								
1998	.7	.3	1.0	2.6	3.3	-	-	-
1999	.6	.4	1.3	2.7	3.9	-	-	-
2000	.8	.5	1.7	2.6	3.8	-	-	-
2001	.7	.4	1.2	2.8	3.3	-	-	-
2002	1.0	.5	1.4	2.6	2.9	-	-	-
2003	.8	.4	2.1	3.6	4.1	-	-	-
Fillet Trawl								
1998	-	.4	-	-	-	8.9	11.0	-
1999	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-
H&G Trawl								
1998	1.0	1.0	2.1	4.3	6.4	-	-	-
1999	1.5	1.2	2.2	5.9	6.4	-	-	-
2000	1.9	1.1	3.0	5.5	7.1	-	-	-
2001	1.0	.7	2.7	4.3	8.7	-	-	-
2002	1.4	1.2	3.8	5.6	8.5	-	-	-
2003	1.1	1.2	3.9	4.9	8.3	-	-	-
Surimi Trawl								
1998	-	-	-	-	-	-	-	14.0
1999	-	-	-	-	-	-	-	22.6
2000	-	-	-	-	-	-	-	25.8
2001	-	-	-	-	-	-	-	28.6
2002	-	-	-	-	-	-	-	28.7
2003	-	-	-	-	-	-	-	29.4
All Trawl								
1998	1.0	.8	2.1	4.3	6.4	7.8	8.3	12.2
1999	1.5	1.2	2.2	5.9	6.4	-	-	19.2
2000	1.9	1.1	3.0	5.5	7.1	-	-	21.5
2001	1.0	.7	2.7	4.3	8.7	-	-	24.2
2002	1.4	1.2	3.8	5.6	8.5	-	-	24.6
2003	1.1	1.2	3.9	4.9	8.3	-	-	25.2

Note: These estimates include only catch counted against federal TACs.

Source: NMFS weekly production reports, Commercial Operators Annual Reports (COAR), and NMFS permits. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 25. Gross product value of groundfish processed by shoreside processors by processor group, 1997-2003. ($ millions)

	1997	1998	1999	2000	2001	2002	2003
Processor group:							
Alaska Peninsula/Aleutians	50.0	38.4	59.0	46.3	49.6	61.8	67.9
Bering Sea Pollock Processors	278.4	214.6	293.0	396.7	421.8	450.5	454.3
Kodiak	63.4	67.1	71.0	73.9	69.1	58.9	52.5
South Central	38.4	27.2	24.9	29.5	28.0	24.4	29.7
Southeastern	62.3	50.6	49.2	52.1	41.1	41.0	46.6
TOTAL	492.5	397.9	497.1	598.6	609.5	636.5	651.0

Table 25.1 Groundfish gross product value as a percentage of all-species gross product value by shoreside processor group, 1997-2003. (percent)

	1997	1998	1999	2000	2001	2002	2003
Processor group:							
Alaska Peninsula/Aleutians	18.7%	11.6%	12.5%	15.1%	20.4%	24.3%	21.8%
Bering Sea Pollock Processors	85.6%	66.3%	70.4%	86.8%	89.0%	87.3%	86.0%
Kodiak	44.8%	40.7%	42.1%	46.4%	44.6%	48.1%	39.4%
South Central	15.6%	15.1%	11.3%	13.8%	15.2%	12.2%	15.1%
Southeastern	18.5%	16.3%	13.4%	16.4%	12.8%	14.5%	16.2%
TOTAL	36.4%	29.7%	29.4%	40.0%	43.3%	45.6%	44.0%

Note: The data are for catch from the EEZ and State waters. The processor groups are defined as follows:
"Bering Sea Pollock Processors" are the AFA inshore pollock processors including the two AFA floating processors.
"Alaska Peninsula/Aleutian" are other processors on the Alaska Peninsula or in the Aleutian Islands.
"Kodiak" are processors on Kodiak Island.
"South Central" are processors west of Yakutat and on the Kenai Peninsula.
"Southeastern" are processors located from Yakutat south.

Source: ADFG Commercial Operators Annual Report, ADFG intent to process. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 26. Number and total registered net tons of vessels that caught groundfish off Alaska by area and gear, 1997-2003.

	Gulf of Alaska		Bering Sea and Aleutian		All Alaska	
	Number of vessels	Registered net tons	Number of vessels	Registered net tons	Number of vessels	Registered net tons
Gear/Year						
Hook and line						
1997	824	28,596	121	14,689	855	34,283
1998	730	27,413	118	15,970	769	34,507
1999	729	28,546	108	15,019	764	33,409
2000	737	24,595	122	17,242	790	34,735
2001	670	23,880	137	16,194	726	32,545
2002	642	24,227	120	16,033	675	32,200
2003	680	26,238	113	14,575	720	32,379
Pot						
1997	152	9,144	82	11,874	205	17,682
1998	189	11,792	78	12,070	239	20,184
1999	242	19,001	102	16,373	295	26,968
2000	257	19,729	100	15,200	315	27,951
2001	158	8,705	81	11,471	221	18,291
2002	131	7,766	64	8,764	175	14,259
2003	138	7,574	91	12,850	205	17,780
Trawl						
1997	208	36,732	167	70,949	263	77,513
1998	194	31,339	166	68,074	258	74,557
1999	177	26,384	164	55,367	244	60,816
2000	143	19,510	151	53,294	243	59,758
2001	137	18,537	162	51,959	241	57,491
2002	123	16,535	163	52,590	231	57,150
2003	114	17,719	162	54,512	210	57,926
All gear						
1997	1,117	70,388	365	96,576	1,250	124,324
1998	1,020	65,014	342	92,692	1,151	120,116
1999	1,038	66,315	360	83,293	1,179	110,994
2000	1,031	57,396	361	83,365	1,228	113,494
2001	892	46,807	375	79,198	1,109	103,461
2002	824	44,418	343	77,195	1,006	99,394
2003	850	47,481	351	79,249	1,037	101,257

Note: These estimates include only vessels fishing federal TACs. Registered net tons totals exclude mainly smaller vessels for which data were unavailable. The percent of vessels missing are: 1997 - 4%, 1998 - 2%, 1999 - 4%, 2000 - 6%, 2001 - 5%, 2002 - 4%, 2003 - 4%.

Source: Blend estimates (1997-2002), Catch Accounting System (2003), fish tickets, Norpac data, federal permit file, CFEC vessel data, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 26.1. Number of vessels that caught or caught and processed more than $3.5 million ex-vessel value or product value of groundfish by area, vessel type and gear, 1998-2003.

	Gulf of Alaska		Bering Sea and Aleutian			All Alaska		
	Catcher Vessels	Catcher process	Total	Catcher Vessels	Catcher process	Total	Catcher Vessels	Catcher process	Total
1998								
All gear	26	26	0	58	58	0	58	58
Hook and line	7	7	0	14	14	0	14	14
Pot	0	0	0	1	1	0	1	1
Trawl	19	19	0	44	44	0	44	44
1999								
All gear	29	29	1	57	58	1	57	58
Hook and line	13	13	0	22	22	0	22	22
Pot	1	1	0	3	3	0	3	3
Trawl	15	15	1	36	37	1	36	37
2000								
All gear	28	28	4	58	62	4	58	62
Hook and line	13	13	0	26	26	0	26	26
Pot	0	0	0	2	2	0	2	2
Trawl	15	15	4	34	38	4	34	38
2001								
All gear	19	19	6	47	53	6	47	53
Hook and line	5	5	0	14	14	0	14	14
Trawl	14	14	6	33	39	6	33	39
2002								
All gear	23	23	10	54	64	10	54	64
Hook and line	10	10	0	18	18	0	18	18
Trawl	13	13	10	36	46	10	36	46
2003								
All gear	34	34	6	65	71	6	65	71
Hook and line	16	16	0	28	28	0	28	28
Pot	0	0	5	0	5	5	0	5
Trawl	18	18	6	37	43	6	37	43

Note: Includes only vessels that fished part of federal TACs.

Source: CFEC fish tickets, weekly processor reports, NMFS permits, Commercial Operators Annual Report (COAR), ADFG intent-to-operate listings. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 26.2. Number of vessels that caught or caught and processed less than $3.5 million ex-vessel value or product value of groundfish by area, vessel type and gear, 1998-2003.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Catcher Vessels	Catcher process	Total	Catcher Vessels	Catcher process	Total	Catcher Vessels	Catcher process	Total
1998									
All gear	973	21	994	243	41	284	1,052	41	1,093
Hook and line	708	15	723	75	29	104	726	29	755
Pot	188	1	189	70	7	77	231	7	238
Trawl	170	5	175	115	7	122	207	7	214
1999									
All gear	980	29	1,009	271	31	302	1,087	34	1,121
Hook and line	699	17	716	67	19	86	720	22	742
Pot	231	10	241	88	11	99	281	11	292
Trawl	159	3	162	123	4	127	203	4	207
2000									
All gear	987	16	1,003	269	30	299	1,134	32	1,166
Hook and line	716	8	724	79	17	96	746	18	764
Pot	252	5	257	88	10	98	302	11	313
Trawl	125	3	128	108	5	113	199	6	205
2001									
All gear	852	21	873	279	43	322	1,012	44	1,056
Hook and line	650	15	665	92	31	123	681	31	712
Pot	154	4	158	74	7	81	212	9	221
Trawl	119	4	123	117	6	123	195	7	202
2002									
All gear	781	20	801	247	32	279	909	33	942
Hook and line	619	13	632	78	24	102	633	24	657
Pot	127	4	131	59	5	64	169	6	175
Trawl	107	3	110	114	3	117	182	3	185
2003									
All gear	803	13	816	262	18	280	945	21	966
Hook and line	655	9	664	73	12	85	678	14	692
Pot	137	1	138	83	3	86	197	3	200
Trawl	93	3	96	116	3	119	163	4	167

Note: Includes only vessels that fished part of federal TACs.

Source: CFEC fish tickets, weekly processor reports, NMFS permits, Commercial Operators Annual Report (COAR), ADFG intent-to-operate listings. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 26.3. Average revenue of vessels that caught or caught and processed more than $3.5 million ex-vessel value or product value of groundfish by area, vessel type and gear, 1998-2003. ($ millions)

	Gulf of Alaska		Bering Sea & Aleutians			All Alaska		
	Catcher Vessels	Catcher process	Total	Catcher Vessels	Catcher process	Total	Catcher Vessels	Catcher process	Total
1998								
All gear	6.41	6.41	-	8.64	8.64	-	8.64	8.64
Hook and line	4.46	4.46	-	4.51	4.51	-	4.51	4.51
Trawl	7.12	7.12	-	9.95	9.95	-	9.95	9.95
1999								
All gear	5.53	5.53	-	10.09	10.00	-	10.09	10.00
Hook and line	4.69	4.69	-	4.70	4.70	-	4.70	4.70
Trawl	6.36	6.36	-	13.23	13.00	-	13.23	13.00
2000								
All gear	6.57	6.57	4.66	10.72	10.33	4.66	10.72	10.33
Hook and line	4.82	4.82	-	5.09	5.09	-	5.09	5.09
Trawl	8.09	8.09	4.66	14.87	13.80	4.66	14.87	13.80
2001								
All gear	7.54	7.54	4.99	13.02	12.11	4.99	13.02	12.11
Hook and line	4.97	4.97	-	4.66	4.66	-	4.66	4.66
Trawl	8.45	8.45	4.99	16.57	14.78	4.99	16.57	14.78
2002								
All gear	6.96	6.96	4.91	12.76	11.54	4.91	12.76	11.54
Hook and line	4.28	4.28	-	4.25	4.25	-	4.25	4.25
Trawl	9.03	9.03	4.91	17.02	14.39	4.91	17.02	14.39
2003								
All gear	6.47	6.47	4.43	11.62	11.01	4.43	11.62	11.01
Hook and line	4.50	4.50	-	4.54	4.54	-	4.54	4.54
Pot	-	-	4.62	-	4.62	4.62	-	4.62
Trawl	8.21	8.21	4.43	16.98	15.23	4.43	16.98	15.23

Notes: Includes only vessels that fished part of federal TACs. Categories with fewer than four vessels are not reported. Averages are obtained by adding the total revenues, across all areas and gear types, of all the vessels in the category, and dividing that sum by the number of vessels in the category.

Source: CFEC fish tickets, weekly processor reports, NMFS permits, commercial operators annual report (COAR), ADFG intent-to-operate listings. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 26.4. Average revenue of vessels that caught or caught and processed less than $3.5 million ex-vessel value or product value of groundfish by area, vessel type and gear, 1998-2003. ($ millions)

	Gulf of Alaska			Bering Sea & Aleutians			All Alaska		
	Catcher Vessels	Catcher process	Total	Catcher Vessels	Catcher process	Total	Catcher Vessels	Catcher process	Total
1998									
All gear	.15	1.77	.18	.44	1.63	.61	.16	1.63	.22
Hook and line	.08	1.59	.11	.18	1.57	.57	.08	1.57	.13
Pot	.11	-	.12	.24	.84	.29	.15	.84	.17
Trawl	.52	2.40	.57	.77	2.58	.88	.54	2.58	.61
1999									
All gear	.20	1.44	.23	.58	1.51	.68	.21	1.38	.25
Hook and line	.09	1.48	.12	.18	1.79	.53	.09	1.55	.13
Pot	.17	1.23	.21	.16	1.16	.27	.16	1.16	.20
Trawl	.77	-	.79	1.10	1.59	1.12	.79	1.59	.80
2000									
All gear	.16	1.33	.18	.67	1.34	.74	.24	1.34	.27
Hook and line	.11	1.24	.12	.23	1.60	.47	.10	1.53	.14
Pot	.16	1.03	.18	.16	.48	.19	.17	.62	.18
Trawl	.57	-	.61	1.40	1.72	1.41	.92	1.83	.95
2001									
All gear	.14	1.76	.18	.58	1.76	.74	.23	1.77	.30
Hook and line	.10	1.82	.14	.17	1.91	.61	.09	1.91	.17
Pot	.12	1.73	.16	.13	.86	.19	.12	1.17	.16
Trawl	.48	1.80	.52	1.18	1.93	1.22	.83	1.95	.87
2002									
All gear	.15	1.70	.18	.65	1.81	.78	.24	1.76	.30
Hook and line	.10	1.89	.14	.19	1.96	.61	.10	1.96	.17
Pot	.15	.38	.16	.18	.62	.22	.14	.52	.15
Trawl	.45	-	.51	1.18	-	1.22	.83	-	.86
2003									
All gear	.17	1.53	.19	.65	1.74	.72	.26	1.65	.29
Hook and line	.12	1.55	.14	.23	2.17	.50	.12	1.91	.15
Pot	.16	-	.16	.28	-	.30	.19	-	.20
Trawl	.57	-	.61	1.19	-	1.19	.93	1.45	.95

Notes: Includes only vessels that fished part of federal TACs. Categories with fewer than four vessels are not reported. Averages are obtained by adding the total revenues, across all areas and gear types, of all the vessels in the category, and dividing that sum by the number of vessels in the category.

Source: CFEC fish tickets, weekly processor reports, NMFS permits, commercial operators annual report (COAR), ADFG intent-to-operate listings. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 27. Number of vessels that caught groundfish off Alaska by area, catcher category, target, and gear, 1999-2003.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total
Gear/Target/Year									
All gear									
All groundfish									
1999	980	58	1,038	272	88	360	1,088	91	1,179
2000	987	44	1,031	273	88	361	1,138	90	1,228
2001	852	40	892	285	90	375	1,018	91	1,109
2002	781	43	824	257	86	343	919	87	1,006
2003	803	47	850	268	83	351	951	86	1,037
Hook and line									
Sablefish									
1999	417	20	437	40	17	57	427	24	451
2000	397	16	413	48	17	65	411	23	434
2001	393	14	407	54	8	62	415	17	432
2002	392	12	404	48	12	60	405	17	422
2003	374	15	389	52	9	61	391	17	408
Pacific cod									
1999	292	22	314	29	38	67	309	41	350
2000	331	14	345	39	41	80	357	42	399
2001	280	13	293	55	42	97	305	42	347
2002	240	18	258	36	40	76	255	41	296
2003	281	16	297	31	39	70	300	39	339
Flatfish									
1999	0	2	2	10	31	41	10	31	41
2000	0	0	0	6	29	35	6	29	35
2001	0	1	1	12	21	33	12	21	33
2002	0	1	1	1	17	18	1	17	18
2003	1	1	2	7	13	20	7	13	20
Rockfish									
1999	152	5	157	6	4	10	156	9	165
2000	138	2	140	5	4	9	142	5	147
2001	114	2	116	8	1	9	121	3	124
2002	120	3	123	5	2	7	123	5	128
2003	112	1	113	4	3	7	115	4	119
All groundfish									
1999	699	30	729	67	41	108	720	44	764
2000	716	21	737	79	43	122	746	44	790
2001	650	20	670	92	45	137	681	45	726
2002	619	23	642	78	42	120	633	42	675
2003	655	25	680	73	40	113	678	42	720
Pot									
Pacific cod									
1999	231	11	242	87	13	100	280	13	293
2000	251	5	256	87	10	97	300	11	311
2001	150	4	154	70	6	76	205	8	213
2002	126	4	130	56	5	61	167	6	173
2003	137	1	138	70	3	73	184	3	187

Table 27. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total	Catcher vessels	Catcher processors	Total
Gear/Target/Year									
Trawl									
Pollock									
1999	125	0	125	113	29	142	170	29	199
2000	92	1	93	99	26	125	167	27	194
2001	95	0	95	105	29	134	171	29	200
2002	80	0	80	97	31	128	154	31	185
2003	75	0	75	93	19	112	144	19	163
Pacific cod									
1999	111	9	120	79	26	105	173	27	200
2000	95	6	101	82	27	109	171	27	198
2001	95	6	101	66	21	87	151	22	173
2002	82	5	87	69	22	91	140	22	162
2003	67	6	73	77	20	97	120	21	141
Flatfish									
1999	35	11	46	3	29	32	38	29	67
2000	39	11	50	5	29	34	44	30	74
2001	41	11	52	0	26	26	41	27	68
2002	40	9	49	1	26	27	40	26	66
2003	31	16	47	1	26	27	32	27	59
Rockfish									
1999	32	12	44	1	13	14	33	17	50
2000	31	11	42	0	6	6	31	12	43
2001	33	12	45	1	8	9	33	15	48
2002	34	12	46	0	8	8	34	15	49
2003	33	13	46	1	11	12	33	17	50
Atka mack.									
1999	0	0	0	0	17	17	0	17	17
2000	0	0	0	0	12	12	0	12	12
2001	0	0	0	0	12	12	0	12	12
2002	0	0	0	0	11	11	0	11	11
2003	0	0	0	0	15	15	0	15	15
All groundfish									
1999	159	18	177	124	40	164	204	40	244
2000	125	18	143	112	39	151	203	40	243
2001	119	18	137	123	39	162	201	40	241
2002	107	16	123	124	39	163	192	39	231
2003	93	21	114	122	40	162	169	41	210

Note: The target is determined based on vessel, week, catching mode, NMFS area, and gear. These estimates include only vessels that fished part of federal TACs.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), fish tickets, Norpac data, federal permit file, CFEC vessel data, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 28. Number of vessels, mean length and mean net tonnage for vessels that caught groundfish off Alaska by area, vessel-length class (feet), and gear, 1999-2003 (excluding catcher-processors).

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length class			Vessel length class			Vessel length class		
	<60	60-125	>=125	<60	60-125	>=125	<60	60-125	>=125
Number of vessels									
Gear/Year									
Hook and line									
1999	595	103	1	33	32	2	609	108	3
2000	632	84	0	50	28	1	655	90	1
2001	571	79	0	71	21	0	598	83	0
2002	537	82	0	61	17	0	550	83	0
2003	575	80	0	59	14	0	594	84	0
Pot									
1999	145	83	3	4	60	24	147	110	24
2000	151	90	11	3	60	25	152	119	31
2001	116	37	1	6	52	16	119	77	16
2002	97	29	1	8	37	14	100	55	14
2003	105	29	3	10	57	21	109	72	21
Trawl									
1999	54	81	24	8	86	30	59	115	30
2000	56	66	3	3	80	29	57	116	30
2001	51	68	0	15	81	27	59	115	27
2002	48	58	1	17	82	25	55	112	25
2003	34	58	1	15	82	25	37	107	25

Note: If the permit files do not report a length for a vessel, the vessel is counted in the "less than 60 feet" class.

Table 28. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length class			Vessel length class			Vessel length class		
	<60	60-125	>=125	<60	60-125	>=125	<60	60-125	>=125
Mean vessel length (feet)									
Gear/Year									
Hook and line									
1999	45	73	166	46	73	150	45	73	156
2000	44	72	-	45	73	177	44	72	177
2001	45	72	-	44	77	-	45	73	-
2002	46	74	-	47	73	-	46	74	-
2003	45	73	-	48	75	-	45	74	-
Pot									
1999	53	91	128	44	99	134	52	93	134
2000	53	93	137	54	103	137	53	96	137
2001	53	87	134	46	103	133	53	97	133
2002	54	90	126	54	101	134	53	97	134
2003	53	89	132	52	103	146	53	98	146
Trawl									
1999	57	98	151	50	104	156	56	99	156
2000	57	91	172	55	104	156	57	98	158
2001	56	90	-	54	105	158	55	99	158
2002	56	89	149	51	105	158	55	99	158
2003	57	91	155	57	105	158	57	100	158

Table 28. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length class			Vessel length class			Vessel length class		
	<60	60-125	>=125	<60	60-125	>=125	<60	60-125	>=125
Mean registered net tons									
Gear/Year									
Hook and line									
1999	24	65	67	27	73	266	24	67	199
2000	24	61	-	27	68	380	23	63	380
2001	25	62	-	27	81	-	25	65	-
2002	26	65	-	29	74	-	26	65	-
2003	25	64	-	30	81	-	25	66	-
Pot									
1999	40	106	140	16	119	167	39	110	167
2000	40	108	199	42	125	160	40	112	168
2001	39	99	119	30	131	164	39	119	164
2002	41	108	134	53	124	158	40	116	158
2003	39	101	178	44	121	213	39	113	213
Trawl									
1999	57	115	204	45	123	233	55	117	233
2000	56	104	317	53	125	229	55	115	237
2001	55	106	-	50	124	234	54	115	234
2002	56	95	130	52	118	238	54	111	238
2003	62	97	267	63	117	238	60	111	238

Note: These estimates include only vessels that fished part of federal TACs.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), ADFG fish tickets, Norpac, NMFS permits. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 28.1 Number of smaller hook-and-line vessels that caught groundfish off Alaska, by area and vessel-length class (feet), 1999-2003 (excluding catcher processors).

	Vessel length class							
	<26	26-30	30-35	35-40	40-45	45-50	50-55	55-60
Number of vessels								
Gulf of Alaska								
1999	25	11	61	71	142	91	61	133
2000	30	18	62	79	152	94	63	134
2001	21	11	55	53	137	104	59	131
2002	21	4	49	54	120	101	66	122
2003	27	5	58	54	128	107	67	129
Bering Sea and Aleutian								
1999	4	0	6	1	2	3	4	13
2000	6	0	7	6	5	1	7	18
2001	7	1	14	7	13	4	4	21
2002	4	0	11	3	5	8	7	23
2003	1	0	12	4	7	4	4	27
All Alaska								
1999	27	11	65	72	144	92	63	135
2000	35	18	68	83	154	94	66	137
2001	27	12	64	56	141	104	62	132
2002	24	4	54	54	121	101	68	124
2003	28	5	63	56	131	108	68	135

Note: If the permit files do not report a length for a vessel, the vessel is counted in the "<26" class.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), ADFG fish tickets, Norpac, NMFS permits. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 29. Number of vessels, mean length and mean net tonnage for vessels that caught and processed groundfish off Alaska by area, vessel-length class (feet), and gear, 1999-2003.

	Gulf of Alaska					Bering Sea and Aleutian					All Alaska				
	Vessel length class					Vessel length class					Vessel length class				
	<125	125-164	165-234	235-259	>260	<125	125-164	165-234	235-259	>260	<125	125-164	165-234	235-259	>260
Number of vessels															
Gear/Year															
Hook and line															
1999	17	5	8	0	0	15	15	11	0	0	18	15	11	0	0
2000	14	1	6	0	0	15	16	12	0	0	16	16	12	0	0
2001	12	3	5	0	0	15	16	13	1	0	15	16	13	1	0
2002	12	5	6	0	0	12	18	12	0	0	12	18	12	0	0
2003	11	6	8	0	0	11	18	11	0	0	13	18	11	0	0
Pot															
1999	2	6	3	0	0	3	7	4	0	0	3	7	4	0	0
2000	1	3	1	0	0	2	6	4	0	0	2	7	4	0	0
2001	1	2	1	0	0	2	4	1	0	0	2	6	1	0	0
2002	2	1	1	0	0	2	2	1	0	0	2	3	1	0	0
2003	1	0	0	0	0	2	1	0	0	0	2	1	0	0	0
Trawl															
1999	6	2	7	1	2	9	4	10	3	14	9	4	10	3	14
2000	4	4	8	1	1	8	4	11	3	13	9	4	11	3	13
2001	6	2	8	1	1	8	4	10	3	14	9	4	10	3	14
2002	4	2	8	1	1	7	4	10	3	15	7	4	10	3	15
2003	7	3	9	1	1	7	4	10	3	16	8	4	10	3	16

Note: If the permit files do not report a length for a vessel, the vessel is counted in the "less than 125 feet" class.

Table 29. Continued.

	Gulf of Alaska					Bering Sea and Aleutian					All Alaska				
	Vessel length class					Vessel length class					Vessel length class				
	<125	125-164	165-234	235-259	>260	<125	125-164	165-234	235-259	>260	<125	125-164	165-234	235-259	>260
Mean vessel length (feet)															
Gear/Year															
Hook and line															
1999	96	146	175	-	-	104	143	177	-	-	98	143	177	-	-
2000	106	141	175	-	-	107	144	178	-	-	108	144	178	-	-
2001	103	141	175	-	-	104	144	177	245	-	104	144	177	245	-
2002	107	140	175	-	-	107	145	178	-	-	107	145	178	-	-
2003	104	146	176	-	-	111	145	178	-	-	107	145	178	-	-
Pot															
1999	108	151	171	-	-	112	150	172	-	-	112	150	172	-	-
2000	116	149	180	-	-	118	149	174	-	-	118	146	174	-	-
2001	116	146	180	-	-	118	146	180	-	-	118	146	180	-	-
2002	96	126	180	-	-	96	162	180	-	-	96	150	180	-	-
2003	76	-	-	-	-	96	165	-	-	-	96	165	-	-	-
Trawl															
1999	113	155	207	238	287	114	152	207	245	306	114	152	207	245	306
2000	111	152	205	238	295	116	152	204	245	308	114	152	204	245	308
2001	113	155	211	238	295	117	152	207	245	305	116	152	207	245	305
2002	113	155	211	238	295	117	152	207	245	303	117	152	207	245	303
2003	115	150	208	238	295	117	152	207	245	306	116	152	207	245	306

Table 29. Continued.

	Gulf of Alaska					Bering Sea and Aleutian					All Alaska				
	Vessel length class					Vessel length class					Vessel length class				
	<125	125-164	165-234	235-259	>260	<125	125-164	165-234	235-259	>260	<125	125-164	165-234	235-259	>260
Mean registered net tons															
Gear/Year															
Hook and line															
1999	107	239	604	-	-	121	252	520	-	-	109	252	520	-	-
2000	121	470	454	-	-	122	265	633	-	-	122	265	633	-	-
2001	122	153	583	-	-	123	262	508	200	-	123	262	508	200	-
2002	130	223	454	-	-	130	302	508	-	-	130	302	508	-	-
2003	159	233	480	-	-	128	302	442	-	-	153	302	442	-	-
Pot															
1999	133	399	492	-	-	130	409	478	-	-	130	409	478	-	-
2000	130	579	243	-	-	128	390	250	-	-	128	352	250	-	-
2001	130	129	243	-	-	128	347	243	-	-	128	275	243	-	-
2002	132	147	243	-	-	132	546	243	-	-	132	413	243	-	-
2003	134	-	-	-	-	132	793	-	-	-	132	793	-	-	-
Trawl															
1999	136	256	610	533	1618	141	193	624	1130	1853	141	193	624	1130	1853
2000	138	193	754	533	1085	147	193	670	1130	1830	141	193	670	1130	1830
2001	115	256	732	533	1085	138	193	724	1130	1620	133	193	724	1130	1620
2002	123	256	732	611	1085	143	193	724	1156	1590	143	193	724	1156	1590
2003	144	214	735	611	1085	150	193	724	1156	1598	143	193	724	1156	1598

Note: These estimates include only vessels that fished part of federal TACs.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), NMFS permits. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 30. Number of vessels that caught groundfish off Alaska by area, tonnage caught, and gear, 1997-2003.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Tonnage caught			Tonnage caught			Tonnage caught		
	Less than 2 t	2 t to 25 t	More than 25 t	Less than 2 t	2 t to 25 t	More than 25 t	Less than 2 t	2 t to 25 t	More than 25 t
Gear/Year									
Hook and line									
1997	214	347	263	31	31	59	217	351	287
1998	144	352	234	15	47	56	143	358	268
1999	164	337	228	20	36	52	168	343	253
2000	153	344	240	28	38	56	167	352	271
2001	127	297	246	28	44	65	138	308	280
2002	121	288	233	24	36	60	121	291	263
2003	104	316	260	24	35	54	112	327	281
Pot									
1997	20	28	104	14	20	48	31	36	138
1998	14	46	129	14	18	46	28	56	155
1999	21	56	165	7	20	75	26	55	214
2000	13	57	187	5	17	78	16	51	248
2001	11	35	112	3	10	68	10	42	169
2002	6	20	105	2	5	57	7	22	146
2003	6	24	108	3	10	78	8	30	167
Trawl									
1997	1	4	203	0	2	165	0	4	259
1998	0	5	189	1	0	165	0	2	256
1999	2	4	171	0	5	159	1	3	240
2000	0	10	133	1	2	148	1	9	233
2001	0	7	130	0	3	159	0	5	236
2002	0	10	113	0	1	162	0	8	223
2003	2	2	110	1	3	158	0	3	207
All gear									
1997	221	356	540	44	52	269	234	365	651
1998	139	376	505	20	59	263	143	381	627
1999	163	365	510	24	57	279	166	366	647
2000	149	377	505	30	51	280	163	372	693
2001	125	314	453	29	55	291	134	328	647
2002	115	296	413	24	41	278	114	299	593
2003	99	306	445	24	46	281	103	322	612

Note: These estimates include only vessels fishing part of federal TACs.

Source: Blend estimates (1997-2002), Catch Accounting System (2003), fish tickets, Norpac data, federal permit file, CFEC vessel data National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 31. Number of vessels that caught groundfish off Alaska by area, residency, target, and gear, 1999-2003.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Alaska	Other	Unk.	Alaska	Other	Unk.	Alaska	Other	Unk.
Gear/Target/Year									
All gear									
All groundfish									
1999	709	314	15	85	271	4	735	425	19
2000	721	281	29	86	272	3	749	447	32
2001	627	246	19	104	258	13	662	417	30
2002	581	221	22	90	245	8	604	373	29
2003	608	225	17	92	257	2	634	384	19
Hook and line									
Sablefish									
1999	304	128	5	22	34	1	310	135	6
2000	280	130	3	34	31	0	294	137	3
2001	281	121	5	37	25	0	300	127	5
2002	286	113	5	30	28	2	294	121	7
2003	270	116	3	33	27	1	281	123	4
Pacific cod									
1999	261	52	1	27	40	0	276	73	1
2000	285	51	9	34	45	1	305	84	10
2001	240	49	4	46	47	4	260	80	7
2002	205	44	9	33	43	0	219	68	9
2003	243	47	7	26	44	0	257	75	7
Flatfish									
1999	1	1	0	17	24	0	17	24	0
2000	0	0	0	13	22	0	13	22	0
2001	0	1	0	13	18	2	13	18	2
2002	0	1	0	4	14	0	4	14	0
2003	1	1	0	4	16	0	4	16	0
Rockfish									
1999	133	23	1	5	5	0	137	27	1
2000	120	18	2	5	3	1	124	20	3
2001	98	18	0	6	3	0	103	21	0
2002	105	18	0	4	3	0	107	21	0
2003	98	15	0	4	3	0	101	18	0
All groundfish									
1999	553	169	7	46	61	1	568	188	8
2000	550	173	14	59	61	2	575	199	16
2001	498	163	9	71	60	6	524	188	14
2002	477	151	14	58	60	2	490	169	16
2003	520	150	10	53	59	1	538	171	11
Pot									
Pacific cod									
1999	180	59	3	31	69	0	194	96	3
2000	187	61	8	18	78	1	193	109	9
2001	119	28	7	18	57	1	128	78	7
2002	107	21	2	17	43	1	114	56	3
2003	118	17	3	24	49	0	127	57	3
All groundfish									
1999	180	59	3	31	71	0	194	98	3
2000	188	61	8	19	80	1	195	111	9
2001	122	29	7	18	62	1	131	83	7
2002	108	21	2	18	45	1	115	57	3
2003	118	17	3	27	64	0	130	72	3

Table 31. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Alaska	Other	Unk.	Alaska	Other	Unk.	Alaska	Other	Unk.
Gear/Target/Year									
Trawl									
Pollock									
1999	39	82	4	11	129	2	42	151	6
2000	41	47	5	12	113	0	44	145	5
2001	39	55	1	12	116	6	40	153	7
2002	33	45	2	11	114	3	37	143	5
2003	30	44	1	9	102	1	33	128	2
Pacific cod									
1999	61	58	1	5	100	0	62	137	1
2000	57	44	0	3	106	0	58	140	0
2001	49	50	2	6	81	0	51	120	2
2002	46	38	3	6	83	2	49	108	5
2003	27	44	2	12	85	0	30	109	2
Flatfish									
1999	16	30	0	2	30	0	16	51	0
2000	17	31	2	2	32	0	18	54	2
2001	17	35	0	1	25	0	17	51	0
2002	18	30	1	2	25	0	18	47	1
2003	14	32	1	2	25	0	14	44	1
Rockfish									
1999	16	28	0	1	13	0	16	34	0
2000	18	24	0	1	5	0	18	25	0
2001	13	32	0	1	8	0	14	34	0
2002	17	29	0	0	8	0	17	32	0
2003	17	29	0	1	11	0	17	33	0
Atka mack.									
1999	0	0	0	1	16	0	1	16	0
2000	0	0	0	1	11	0	1	11	0
2001	0	0	0	1	11	0	1	11	0
2002	0	0	0	0	11	0	0	11	0
2003	0	0	0	2	13	0	2	13	0
All groundfish									
1999	63	109	5	13	148	3	65	171	8
2000	62	74	7	12	139	0	63	173	7
2001	56	78	3	16	139	7	57	174	10
2002	53	64	6	15	143	5	56	165	10
2003	40	70	4	17	144	1	41	164	5

Note: The target is determined based on vessel, week, processing mode, NMFS area, and gear. Vessels are classified by the residency of the owner of the fishing vessel. These estimates include only vessels fishing part of federal TACs.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), fish tickets, Norpac data, federal permit file, CFEC vessel data National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 32. Number of vessels that caught groundfish off Alaska by month, area, vessel type, and gear, 1999-2003.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Area/Catcher type/Gear/Year													
Gulf of Alaska													
Catcher vessels (excluding catcher/processors)													
Hook and line													
1999	120	100	154	156	347	226	122	79	101	134	74	18	699
2000	140	160	171	253	342	232	120	97	136	69	60	16	716
2001	127	130	103	208	269	274	100	86	159	94	71	9	650
2002	90	73	157	234	234	200	98	102	158	78	76	7	619
2003	85	72	176	293	306	134	99	118	140	79	83	1	655
Pot													
1999	73	77	116	139	88	12	0	0	25	30	38	56	231
2000	142	157	179	145	43	4	1	0	5	8	11	21	252
2001	37	74	109	96	28	11	0	0	23	16	9	14	154
2002	36	68	95	36	29	5	0	0	19	12	25	17	127
2003	53	87	103	15	0	0	0	0	41	5	0	0	137
Trawl													
1999	85	105	108	28	5	65	31	15	103	72	1	0	159
2000	77	98	96	34	20	4	31	49	43	45	15	4	125
2001	76	99	99	38	14	8	35	45	66	69	4	0	119
2002	32	78	78	33	21	0	35	58	34	56	15	0	107
2003	63	64	37	38	17	8	35	50	43	47	0	0	93
All gear													
1999	273	277	344	319	436	302	152	94	227	234	112	72	980
2000	346	404	401	425	399	240	151	146	184	122	86	40	987
2001	239	300	282	335	310	290	135	129	247	179	84	23	852
2002	155	213	308	301	281	205	133	160	209	145	116	24	781
2003	193	221	299	344	323	142	134	168	222	130	83	1	803
Catcher/processors													
Hook and line													
1999	6	12	11	13	10	10	8	4	5	4	2	0	30
2000	12	10	14	12	3	10	8	3	1	1	2	0	21
2001	9	6	10	9	6	9	2	3	3	1	1	0	20
2002	6	9	14	11	9	2	4	4	3	5	5	0	23
2003	9	6	16	8	10	4	4	5	5	1	1	0	25
Pot													
1999	0	0	0	2	5	10	6	6	1	0	0	0	11
2000	2	3	2	1	3	2	1	0	0	1	1	0	5
2001	0	0	0	4	3	0	0	0	0	0	1	1	4
2002	0	0	2	1	0	0	0	0	2	3	1	0	4
2003	1	1	1	0	0	0	0	0	1	0	0	0	1
Trawl													
1999	3	3	6	9	3	0	12	13	1	7	0	0	18
2000	4	5	5	9	10	1	15	7	0	3	2	0	18
2001	2	3	4	7	9	0	13	2	4	5	0	0	18
2002	1	2	4	6	8	1	14	7	0	6	1	0	16
2003	0	3	3	10	9	0	13	6	7	13	0	0	21
All gear													
1999	9	15	17	24	18	20	26	23	7	11	2	0	58
2000	18	18	21	22	16	13	24	10	1	5	5	0	44
2001	11	9	14	20	18	9	15	5	7	6	2	1	40
2002	7	11	20	18	17	3	18	11	5	14	7	0	43
2003	10	10	20	18	19	4	17	11	13	14	1	0	47

Table 32. Continued.

Area/Catcher type/Gear/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Bering Sea and Aleutian Islands													
Catcher vessels (excluding catcher/processors)													
Hook and line													
1999	1	5	5	5	19	20	34	23	17	16	8	3	67
2000	2	2	6	10	23	25	29	26	23	19	8	8	79
2001	2	3	2	9	16	40	43	46	32	18	12	5	92
2002	2	3	4	12	27	37	26	35	20	9	5	0	78
2003	0	0	6	9	26	34	27	30	27	18	6	0	73
Pot													
1999	2	2	3	39	52	23	0	0	20	31	2	1	88
2000	37	70	81	1	2	2	1	1	5	1	1	0	88
2001	3	4	57	3	7	7	3	4	25	16	6	3	74
2002	5	20	40	6	7	8	5	5	20	19	6	1	59
2003	7	47	46	10	6	8	10	8	28	45	21	5	88
Trawl													
1999	64	86	80	70	0	0	12	90	82	82	2	1	124
2000	63	89	90	67	0	2	43	74	78	52	22	0	112
2001	45	94	105	50	6	8	59	79	91	51	0	0	123
2002	67	106	103	55	6	19	60	90	80	49	6	0	124
2003	62	108	111	65	13	32	73	91	75	46	0	0	122
All gear													
1999	67	93	88	113	71	43	46	113	119	129	11	5	272
2000	102	161	176	78	25	29	73	101	105	72	31	8	273
2001	50	101	164	62	29	55	105	129	148	85	17	8	285
2002	74	129	147	73	40	64	91	130	120	77	17	1	257
2003	69	155	163	84	45	74	109	127	130	100	27	5	268
Catcher/processors													
Hook and line													
1999	27	28	34	36	27	6	4	8	37	37	8	14	41
2000	35	34	37	20	31	14	5	11	37	36	38	35	43
2001	33	37	41	17	25	11	8	37	39	40	38	35	45
2002	34	35	37	13	11	6	11	37	39	40	39	18	42
2003	32	39	39	14	11	11	15	36	36	36	37	31	40
Pot													
1999	0	0	0	5	11	4	1	1	6	3	0	0	14
2000	7	9	9	1	1	0	0	0	0	0	1	0	12
2001	1	1	5	1	1	0	0	0	3	3	2	0	7
2002	0	3	4	0	0	0	0	0	3	3	3	0	5
2003	0	2	2	0	0	0	0	0	3	2	2	1	3
Trawl													
1999	36	36	37	29	20	6	29	38	37	32	6	2	40
2000	35	37	37	34	20	13	29	37	37	31	12	3	39
2001	35	37	38	35	9	15	33	35	36	34	14	5	39
2002	35	38	37	22	18	22	32	37	36	26	6	0	39
2003	36	38	38	24	16	29	34	37	37	15	3	1	40
All gear													
1999	63	63	71	70	55	16	33	46	78	72	14	16	88
2000	77	80	82	54	51	27	34	48	73	67	51	38	88
2001	69	75	84	53	35	26	41	72	78	77	54	40	90
2002	69	76	78	35	29	28	43	74	78	69	48	18	86
2003	68	79	79	38	27	40	49	73	76	53	42	33	83

Table 32. Continued.

Area/Catcher type/Gear/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
All Alaska													
Catcher vessels (excluding catcher/processors)													
Hook and line													
1999	121	105	159	160	358	244	147	98	116	148	80	21	720
2000	142	162	177	262	361	252	146	117	150	86	67	23	746
2001	129	133	105	217	280	301	139	128	184	109	82	14	681
2002	92	76	160	242	257	229	119	127	175	85	79	7	633
2003	85	72	181	300	328	166	119	140	161	94	89	1	678
Pot													
1999	74	78	118	172	126	34	0	0	44	57	40	57	281
2000	176	207	244	146	45	6	2	1	10	9	12	21	302
2001	40	78	161	98	34	18	3	4	46	32	14	17	212
2002	41	86	133	42	36	12	5	5	39	31	31	18	169
2003	60	130	143	25	6	8	10	8	63	48	21	5	202
Trawl													
1999	148	181	178	97	5	65	43	102	149	144	3	1	204
2000	139	183	179	98	20	6	69	118	114	92	37	4	203
2001	117	178	188	87	20	16	86	119	144	118	4	0	201
2002	99	167	165	88	27	19	88	129	107	101	21	0	192
2003	124	152	134	99	29	40	98	126	112	90	0	0	169
All gear													
1999	338	358	421	424	485	342	189	200	307	347	121	77	1088
2000	444	541	554	499	420	264	216	236	272	187	115	47	1138
2001	285	386	425	395	333	332	228	249	371	259	99	31	1018
2002	229	323	436	367	317	259	212	261	319	216	131	25	919
2003	261	352	441	422	363	214	226	272	334	222	110	6	951
Catcher/processors													
Hook and line													
1999	32	36	38	37	28	16	10	11	38	39	10	14	44
2000	39	39	40	24	31	21	10	13	38	37	40	35	44
2001	34	40	43	21	25	17	10	38	40	41	39	35	45
2002	36	38	39	19	15	8	15	38	40	41	39	18	42
2003	40	39	40	19	16	14	17	38	38	37	38	31	42
Pot													
1999	0	0	0	5	12	10	7	7	7	3	0	0	14
2000	8	10	10	2	4	2	1	0	0	1	2	0	13
2001	1	1	5	5	4	0	0	0	3	3	2	1	9
2002	0	3	5	1	0	0	0	0	4	4	3	0	6
2003	1	3	3	0	0	0	0	0	3	2	2	1	3
Trawl													
1999	37	39	39	34	21	6	29	38	37	37	6	2	40
2000	38	39	39	37	24	13	34	38	37	34	14	3	40
2001	37	39	39	37	15	15	35	36	37	35	14	5	40
2002	35	39	39	25	21	22	37	37	36	27	6	0	39
2003	36	39	39	28	19	29	37	38	38	27	3	1	41
All gear													
1999	69	74	77	76	58	32	45	55	79	79	16	16	91
2000	85	88	88	62	58	36	45	51	74	72	55	38	90
2001	72	80	87	63	44	32	45	74	80	79	55	41	91
2002	71	80	83	45	36	30	52	75	80	72	48	18	87
2003	77	81	82	47	35	43	54	76	79	66	43	33	86

Note: These estimates include only vessels fishing part of federal TACs.
Source: Blend estimates (1999-2002), Catch Accounting System (2003), fish tickets, Norpac data, federal permit file, CFEC vessel data, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 33. Catcher vessel (excluding catcher-processors) weeks of fishing groundfish off Alaska by area, vessel-length class (feet), gear, and target, 1999-2003.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length class			Vessel length class			Vessel length class		
	<60	60-124	>=125	<60	60-124	>=125	<60	60-124	>=125
Gear/Target/Year									
Hook and line									
Sablefish									
1999	987	355	-	30	58	-	1017	413	-
2000	1022	323	-	99	58	-	1121	381	-
2001	1026	345	-	142	50	-	1168	395	-
2002	1051	303	-	143	50	1	1194	353	1
2003	1058	313	-	173	26	-	1231	339	-
Pacific cod									
1999	1222	42	1	98	33	4	1321	74	5
2000	1624	35	-	126	11	2	1750	46	2
2001	1309	21	-	164	25	-	1473	45	-
2002	1066	19	-	98	9	-	1164	28	-
2003	1059	22	-	89	8	1	1148	30	1
Flatfish									
1999	-	0	-	12	8	-	12	8	-
2000	-	-	-	5	6	-	5	6	-
2001	-	-	-	21	3	-	21	3	-
2002	-	-	-	1	-	-	1	-	-
2003	1	-	-	6	5	0	6	5	0
Rockfish									
1999	289	12	-	8	2	-	297	14	-
2000	257	11	-	5	2	-	262	13	-
2001	236	15	-	5	2	-	242	17	-
2002	241	26	-	4	1	-	245	27	-
2003	212	15	-	3	1	-	215	16	-
All groundfish									
1999	2498	410	1	149	101	4	2647	511	5
2000	2908	370	-	233	77	6	3141	447	6
2001	2591	381	-	333	80	-	2924	461	-
2002	2358	348	-	246	60	1	2604	407	1
2003	2486	359	-	271	41	1	2757	400	1
Pot									
Pacific cod									
1999	1096	471	4	4	240	111	1099	711	115
2000	1115	530	44	2	229	136	1116	759	180
2001	724	203	-	27	227	63	751	430	63
2002	749	200	3	35	159	56	784	359	59
2003	606	143	9	41	201	64	647	344	73
All groundfish									
1999	1097	472	4	4	243	115	1100	715	119
2000	1117	532	44	2	253	137	1118	785	181
2001	778	203	1	32	263	65	810	466	66
2002	750	202	3	48	215	56	798	417	59
2003	606	143	9	56	304	72	662	447	80

Table 33. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length class			Vessel length class			Vessel length class		
	<60	60-124	>=125	<60	60-124	>=125	<60	60-124	>=125
Trawl									
Pollock									
1999	150	489	45	5	582	413	155	1071	458
2000	126	365	1	3	748	487	129	1113	488
2001	211	426	-	1	924	501	212	1350	501
2002	87	289	0	3	883	477	90	1172	478
2003	69	260	0	1	934	518	70	1194	518
Pacific cod									
1999	260	269	6	0	347	78	260	616	84
2000	185	179	1	1	383	55	186	562	56
2001	177	234	-	7	258	19	184	491	19
2002	117	159	-	61	337	15	178	496	15
2003	53	160	-	64	373	24	117	533	24
Flatfish									
1999	4	94	-	-	1	3	4	95	3
2000	19	208	-	-	7	3	19	215	3
2001	21	172	-	-	-	-	21	172	-
2002	10	211	-	-	0	-	10	212	-
2003	4	148	-	2	-	-	6	148	-
Rockfish									
1999	-	80	2	-	0	-	-	80	2
2000	-	96	-	-	-	-	-	96	-
2001	-	89	-	-	0	-	-	89	-
2002	1	87	-	-	-	-	1	87	-
2003	3	110	-	-	1	-	3	111	-
All groundfish									
1999	415	934	53	6	1863	547	421	2797	600
2000	331	852	2	4	2085	546	335	2938	548
2001	409	921	-	8	2309	520	417	3230	520
2002	216	746	0	64	2333	492	280	3079	493
2003	129	693	0	67	2508	542	196	3201	542
All gear									
All groundfish									
1999	4010	1817	59	158	2206	665	4168	4023	724
2000	4356	1754	46	239	2416	689	4595	4170	735
2001	3778	1505	1	373	2651	585	4151	4156	586
2002	3324	1296	3	358	2608	549	3682	3903	553
2003	3221	1195	9	394	2853	615	3615	4048	624

Notes: A vessel that fished more than one category in a week is apportioned a partial week based on catch weight. A target is determined based on vessel, week, processing mode, NMFS area, and gear. All groundfish include additional target categories.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), fish tickets, Norpac data, federal permit file, CFEC vessel data, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 34. Catcher/processor vessel weeks of fishing groundfish off Alaska by area, vessel-length class (feet), gear, and target, 1999-2003.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length class			Vessel length class			Vessel length class		
	<60	60-124	125-230	<60	60-124	125-230	<60	60-124	125-230
Gear/Target/Year									
Hook and line									
Sablefish									
1999	7	41	16	-	26	20	7	68	36
2000	13	41	20	-	40	16	13	81	36
2001	14	45	15	-	30	7	14	75	22
2002	13	37	18	1	34	6	14	71	25
2003	7	44	22	-	28	9	7	72	32
Pacific cod									
1999	7	53	11	-	184	585	7	237	597
2000	-	63	2	-	225	727	-	287	729
2001	-	42	2	-	271	852	-	312	854
2002	-	52	21	22	186	775	22	238	797
2003	7	31	23	5	240	846	12	271	869
Flatfish									
1999	-	-	0	4	44	46	4	44	47
2000	-	-	-	4	35	71	4	35	71
2001	-	0	-	2	23	49	2	23	49
2002	-	-	1	2	24	34	2	24	35
2003	-	0	-	-	12	45	-	12	45
All groundfish									
1999	15	96	28	4	256	653	19	352	681
2000	13	104	23	4	299	815	17	403	838
2001	14	88	17	2	326	908	16	414	925
2002	13	89	41	25	245	817	38	334	858
2003	14	78	54	5	280	910	19	358	964
Pot									
Pacific cod									
1999	-	21	70	-	11	53	-	32	122
2000	-	12	19	-	2	56	-	14	75
2001	-	8	23	-	5	35	-	13	58
2002	-	3	9	-	14	24	-	17	33
2003	-	7	-	-	11	13	-	18	13
All groundfish									
1999	-	21	70	-	11	60	-	32	129
2000	-	12	19	-	2	58	-	14	77
2001	-	8	23	-	5	39	-	13	62
2002	-	3	9	-	14	24	-	17	33
2003	-	7	-	-	11	13	-	18	13

Table 34. Continued.

	Gulf of Alaska			Bering Sea and Aleutian			All Alaska		
	Vessel length class			Vessel length class			Vessel length class		
	60-124	125-230	>230	60-124	125-230	>230	60-124	125-230	>230
Trawl									
Pollock									
1999	-	-	-	1	32	264	1	32	264
2000	-	0	-	2	35	302	2	35	302
2001	-	-	-	1	45	380	1	45	380
2002	-	-	-	2	42	332	2	42	332
2003	-	-	-	0	27	344	0	27	344
Pacific cod									
1999	16	3	-	32	57	27	48	60	27
2000	4	5	-	43	45	17	47	50	17
2001	12	7	-	32	48	14	44	54	14
2002	4	0	-	61	57	16	65	57	16
2003	5	1	-	67	55	17	72	56	17
Flatfish									
1999	62	19	0	131	224	53	194	243	53
2000	86	25	4	140	323	55	227	348	59
2001	57	14	3	126	283	47	183	297	49
2002	57	24	5	121	286	47	177	310	53
2003	72	38	4	100	243	41	172	281	45
Rockfish									
1999	4	32	4	0	15	4	4	47	8
2000	0	23	1	-	10	6	0	33	7
2001	4	18	0	0	8	6	4	26	6
2002	3	20	0	-	8	6	3	29	6
2003	2	22	0	0	15	8	3	37	8
Atka mack.									
1999	-	-	-	3	87	27	3	87	27
2000	-	-	-	0	64	30	0	64	30
2001	-	-	-	0	81	26	0	81	26
2002	-	-	-	0	54	16	0	54	16
2003	-	-	-	2	66	22	2	66	22
All groundfish									
1999	82	54	4	168	417	376	250	471	380
2000	91	53	4	185	477	412	276	530	416
2001	73	39	3	160	465	473	233	504	476
2002	63	44	5	184	448	418	247	492	423
2003	83	61	4	170	409	432	253	469	436

Table 34. Continued.

	Gulf of Alaska				Bering Sea and Aleutian				All Alaska			
	Vessel length class				Vessel length class				Vessel length class			
	<60	60-124	125-230	>230	<60	60-124	125-230	>230	<60	60-124	125-230	>230
All gear												
All groundfish												
1999	15	199	151	4	4	435	1130	376	19	634	1281	380
2000	13	207	95	4	4	486	1349	412	17	693	1445	416
2001	14	170	78	3	2	490	1413	474	16	660	1491	477
2002	13	155	95	5	25	442	1288	418	38	598	1383	423
2003	14	168	115	4	5	461	1331	432	19	629	1446	436

Notes: A vessel that fished more than one category in a week is apportioned a partial week based on catch weight. A target is determined based on vessel, week, processing mode, NMFS area, and gear. All groundfish include additional target categories.

Source: Blend estimates (1999-2002), Catch Accounting System (2003), fish tickets, Norpac data, federal permit file, CFEC vessel data, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 35. Total at-sea processor crew weeks in groundfish fisheries off Alaska by month and area, 1999-2003.

Area/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Gulf of Alaska													
1999	322	549	471	1,197	423	684	1,544	976	52	431	-	-	6,647
2000	747	943	562	941	615	349	1,437	375	-	224	83	-	6,301
2001	339	388	274	997	944	333	941	84	85	274	-	-	4,769
2002	233	431	582	783	790	-	1,425	310	88	425	188	-	5,287
2003	470	265	493	991	1,023	101	922	417	279	631	-	-	5,591
Bering Sea and Aleutian Islands													
1999	6,938	14,291	11,519	5,958	4,730	1,078	3,273	7,596	12,447	10,491	1,587	684	80,591
2000	6,805	16,004	13,585	7,650	3,480	1,452	4,053	9,779	14,920	8,841	4,028	1,935	92,533
2001	5,628	16,364	19,578	7,690	1,672	2,282	7,892	12,019	16,210	9,525	4,525	2,043	105,428
2002	5,639	16,501	16,513	3,634	1,785	3,593	9,679	15,569	12,997	7,028	3,607	894	97,440
2003	5,830	16,110	18,259	3,771	2,255	5,263	10,479	15,807	12,408	5,579	4,236	1,778	101,775
All Alaska													
1999	7,260	14,839	11,990	7,154	5,153	1,762	4,816	8,572	12,499	10,922	1,587	684	87,238
2000	7,552	16,947	14,148	8,591	4,095	1,801	5,490	10,154	14,945	9,065	4,111	1,935	98,833
2001	5,966	16,752	19,852	8,687	2,616	2,615	8,833	12,103	16,295	9,798	4,589	2,091	110,197
2002	5,872	16,932	17,095	4,417	2,575	3,606	11,104	15,880	13,085	7,453	3,795	912	102,727
2003	6,300	16,375	18,751	4,761	3,278	5,364	11,400	16,224	12,687	6,210	4,236	1,778	107,365

Note: Crew weeks are calculated by summing weekly reported crew size over vessels and time period. These estimates include only vessels targeting groundfish counted toward federal TACs. Catcher processors accounted for the following proportions of the total crew weeks in all areas: 1999 - 97%, 2000 - 90%, 2001 - 90%, 2002 - 89%, 2003 - 92%.

Source: Weekly Processor Reports. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 36. Production and gross value of groundfish products in the fisheries off Alaska by species and product type, 1999-2003, (1,000 metric tons product weight and million dollars).

	1999		2000		2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Pollock										
Whole fish	14.18	$3.8	2.63	$1.3	1.58	$.9	1.79	$2.4	4.28	$2.9
H&G	4.54	$3.5	7.11	$5.9	9.92	$9.0	10.49	$8.9	8.32	$9.3
Roe	11.22	$136.7	16.01	$294.4	22.54	$338.9	26.49	$298.5	22.40	$251.8
Deep-skin fillets	28.74	$104.0	25.57	$62.7	21.85	$57.7	26.59	$63.2	45.81	$113.9
Other fillets	24.98	$71.1	33.35	$60.9	82.94	$154.8	97.94	$211.3	108.84	$233.0
Surimi	154.27	$333.6	191.65	$344.2	187.57	$300.6	204.81	$324.8	198.70	$313.1
Minced fish	6.48	$7.1	8.99	$11.5	18.34	$25.5	24.92	$30.2	14.43	$17.3
Fish meal	46.94	$30.1	50.25	$30.4	51.31	$36.9	55.07	$38.1	46.14	$34.6
Other products	.69	$.4	7.01	$2.9	12.37	$5.4	21.35	$9.5	20.33	$10.8
All products	292.03	$690.2	342.58	$814.3	408.41	$929.8	469.44	$987.0	469.27	$986.7
Pacific cod										
Whole fish	2.78	$3.3	3.13	$3.7	2.26	$2.5	2.26	$1.8	4.13	$4.8
H&G	65.84	$168.1	66.65	$172.0	65.83	$154.3	72.48	$155.0	72.13	$177.5
Salted/split	-	-	-	-	3.29	$10.3	-	-	-	-
Fillets	16.63	$87.9	17.35	$85.7	9.91	$39.6	12.31	$58.2	15.04	$72.2
Other products	11.80	$14.3	11.01	$24.4	11.46	$28.7	15.81	$30.1	15.64	$23.0
All products	97.04	$273.6	98.14	$285.9	92.75	$235.4	102.87	$245.2	106.93	$277.6
Sablefish										
H&G	8.74	$72.8	9.02	$85.9	9.14	$77.8	9.23	$80.8	9.80	$89.3
Other products	.05	$.2	.19	$1.2	.24	$1.7	.24	$.7	.89	$5.5
All products	8.79	$73.0	9.21	$87.1	9.38	$79.5	9.47	$81.5	10.68	$94.7

Table 36. Continued.

	1999		2000		2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Flatfish										
Whole fish	13.10	$14.5	15.40	$16.3	10.47	$11.2	16.53	$14.8	14.06	$15.1
H&G	37.90	$48.6	47.06	$63.3	36.81	$42.1	50.00	$60.9	54.23	$61.8
Kirimi	4.21	$4.4	6.37	$5.9	6.15	$4.2	2.86	$3.5	3.68	$4.4
Fillets	.63	$2.8	1.77	$6.0	1.10	$3.7	1.33	$5.8	1.02	$4.0
Other products	.70	$.4	.85	$.4	.42	$.3	.83	$1.1	.73	$1.0
All products	56.54	$70.7	71.45	$91.9	54.96	$61.5	71.55	$86.1	73.72	$86.3
Rockfish										
Whole fish	8.75	$5.0	1.25	$2.0	1.40	$1.5	1.85	$3.1	1.72	$4.0
H&G	10.20	$12.8	8.31	$12.7	6.98	$10.2	9.78	$14.1	10.85	$15.2
Other products	1.00	$2.9	1.87	$4.3	3.48	$3.9	1.71	$5.3	2.06	$5.9
All products	19.94	$20.7	11.42	$19.0	11.86	$15.6	13.35	$22.5	14.64	$25.0
Atka mackerel										
Whole fish	10.10	$4.7	2.92	$1.2	4.81	$3.9	3.27	$2.3	7.13	$4.1
H&G	22.23	$17.2	22.57	$20.0	26.68	$40.8	18.55	$22.5	20.89	$18.6
Other products	.03	$.0	-	-	.00	$.0	.00	$.0	.00	$.0
All products	32.37	$21.9	25.49	$21.2	31.49	$44.6	21.82	$24.9	28.02	$22.8
Total	529.45	$1,178.1	574.75	$1,345.8	626.45	$1,390.8	703.75	$1,482.8	718.99	$1,518.7

Notes: Totals include additional species not listed in the production details as well as confidential data from Tables 37 and 38. For shoreside processors, these estimates include production resulting from catch from federal and state of Alaska fisheries. For at-sea processors, they include production only from catch counted against federal TACs.

Source: Weekly processor report and commercial operators annual report. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 36.1 Price per pound of groundfish products in the fisheries off Alaska by species and processing mode, 1999-2003 (dollars).

	1999		2000		2001		2002		2003	
	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside
Pollock										
Whole fish	$.18	$.10	$.23	$.27	$.24	$.48	$.64	$.32	$.33	$.26
H&G	$.35	-	$.37	-	$.40	$.45	$.36	$.52	$.51	-
Roe	$6.04	$4.67	$9.31	$7.28	$8.30	$5.54	$6.16	$3.94	$5.67	$4.31
Deep-skin fillets	$1.64	-	$1.11	-	$1.20	-	$1.08	-	$1.13	$1.11
Other fillets	$1.21	$1.31	$.70	$.88	$.87	$.83	$.88	$1.06	$1.01	$.94
Surimi	$1.18	$.84	$.79	$.84	$.82	$.66	$.81	$.64	$.73	$.70
Minced fish	$.49	-	$.58	-	$.63	-	$.53	$.59	$.54	-
Fish meal	$.34	$.27	$.30	$.26	$.38	$.29	$.32	$.31	$.34	$.34
Other products	$.28	-	$.16	$.20	$.35	$.17	$.30	$.19	$.48	$.22
All products	$1.35	$.84	$1.17	$.99	$1.18	$.90	$1.09	$.82	$1.05	$.86
Pacific cod										
Whole fish	$.45	$.55	$.50	$.55	$.46	$.51	$.29	$.41	$.44	$.56
H&G	$1.17	$1.05	$1.17	$1.13	$1.09	$.87	$.97	$.99	$1.13	$.97
Salted/split	-	-	-	-	-	$1.42	-	-	-	-
Fillets	$2.00	$2.44	$2.33	$2.22	$1.48	$1.86	$1.58	$2.28	$2.19	$2.18
Other products	$1.10	$.44	$1.25	$.91	$1.40	$1.04	$1.03	$.79	$.92	$.59
All products	$1.19	$1.45	$1.21	$1.56	$1.11	$1.24	$.98	$1.31	$1.12	$1.29
Sablefish										
H&G	$3.51	$3.84	$4.02	$4.39	$3.50	$3.92	$3.59	$4.05	$3.57	$4.25
Other products	$1.25	$2.46	$1.90	$3.34	$1.13	$3.97	$1.09	$1.52	$1.30	$2.91
All products	$3.46	$3.84	$3.94	$4.37	$3.40	$3.92	$3.48	$4.00	$3.48	$4.13
Deep-water flatfish										
Whole fish	-	-	-	-	-	-	-	-	$.20	-
H&G	$.13	-	$.56	-	$.81	-	$1.09	-	$.32	-
Fillets	-	$1.85	-	$1.83	-	$1.61	-	$1.57	-	$1.52
All products	$.13	$1.85	$.56	$1.83	$.81	$1.61	$1.09	$1.57	$.32	$1.52

Table 36.1 Continued.

	1999		2000		2001		2002		2003	
	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside
Shallow-water flatfish										
Whole fish	-	-	-	$.44	$.40	$.41	$.29	$.36	-	$.36
H&G	$.37	-	$.37	-	$.52	-	$.49	-	$.34	-
Fillets	-	$2.17	-	$1.61	-	$1.55	-	$2.13	-	$2.02
Other products	$1.15	-	$1.03	-	$1.20	-	-	-	$1.10	-
All products	$.50	$2.17	$.80	$1.48	$.46	$1.43	$.40	$1.64	$.37	$1.82
Other flatfish										
Whole fish	$1.43	-	$1.26	-	$.95	-	$.83	-	$.98	-
H&G	$.37	-	$.31	-	$.94	-	$.15	-	$.24	-
Other products	$.47	-	$.28	-	$.34	-	$.31	-	$.30	-
All products	$1.24	-	$.92	-	$.93	-	$.78	-	$.91	-
Arrowtooth flounder										
Whole fish	-	-	-	-	-	-	-	-	$.25	-
H&G	$.40	-	$.52	-	$.27	-	$.38	-	$.39	-
Other products	$.27	-	$.25	-	$.30	-	$.31	-	$.15	-
All products	$.40	-	$.52	-	$.27	-	$.38	-	$.39	-
Flathead sole										
Whole fish	$.41	-	-	-	$.40	-	$.40	$.36	-	$.44
H&G	$.52	-	$.53	-	$.47	-	$.56	-	$.57	-
Fillets	-	$1.95	-	$1.31	-	$1.67	-	$1.87	-	$2.00
Other products	$.87	-	$.82	-	$1.07	-	$.90	-	$.90	-
All products	$.59	$1.95	$.60	$1.31	$.57	$1.67	$.67	$1.73	$.62	$1.58
Rock sole										
Whole fish	$.21	-	$.49	-	$.40	-	$.27	-	-	-
H&G	$.32	-	$.47	-	$.41	-	$.42	-	$.44	-
H&G with roe	$1.09	-	$1.06	-	$1.20	-	$1.07	-	$1.10	-
Kirimi	-	-	-	-	$.79	-	-	-	-	-
Other products	$.28	-	$.24	-	$.30	-	$.33	-	$.30	-
All products	$.85	-	$.81	-	$.73	-	$.80	-	$.77	-

Table 36.1 Continued.

	1999		2000		2001		2002		2003	
	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside
Rex sole										
Whole fish	$1.39	-	$1.18	-	$.99	-	$.85	-	$.95	-
H&G	-	-	-	-	$.77	-	-	-	$.42	-
Fillets	-	$1.79	-	$2.37	-	$1.64	-	$1.59	-	-
All products	$1.39	$1.79	$1.18	$2.37	$.99	$1.64	$.85	$1.59	$.95	-
Yellowfin sole										
Whole fish	$.16	-	$.20	-	$.28	-	$.29	-	$.29	-
H&G	$.32	-	$.37	-	$.39	-	$.39	-	$.40	-
Kirimi	$.47	-	$.42	-	$.30	-	$.55	-	$.54	-
Other products	$.26	-	$.24	-	$.30	-	$.26	-	$.36	-
All products	$.29	-	$.33	-	$.34	-	$.37	-	$.39	-
Greenland turbot										
H&G	$1.50	$1.34	$1.65	$1.37	$.73	$1.09	$1.05	-	$1.32	-
Other products	$.35	-	$.44	-	$.37	-	$.84	-	$.86	-
All products	$1.50	$1.34	$1.65	$1.37	$.70	$1.09	$1.01	-	$1.21	-
Rockfish										
Whole fish	$.40	$.13	$.69	$.76	$.31	$.65	$.85	$.66	$.96	$1.33
H&G	$.51	$1.82	$.62	$1.70	$.54	$1.85	$.58	$2.17	$.60	$1.22
Other products	$.83	$1.32	$1.12	$1.04	$.93	$.51	$1.09	$1.40	$1.00	$1.30
All products	$.48	$.45	$.63	$1.13	$.52	$.71	$.61	$1.31	$.65	$1.29
Atka mackerel										
Whole fish	$.21	-	$.18	-	$.36	-	$.33	-	$.26	-
H&G	$.35	-	$.40	-	$.69	-	$.55	-	$.40	-
Other products	$.24	-	-	-	$.78	-	$.50	-	$.30	-
All products	$.31	-	$.38	-	$.64	-	$.52	-	$.37	-

Note: Prices based on confidential data have been excluded.

Source: Weekly production reports and Commercial Operators Annual Reports (COAR). National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 36.2 Total product value per round metric ton of retained catch in the groundfish fisheries off Alaska by processor type, species area and year, 1999-2003, (dollars).

	Bering Sea and Aleutians					Gulf of Alaska				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Motherships										
Pacific cod	510	1,407	911	981	830	-	1,352	-	-	-
Pollock	577	608	619	619	512	-	-	-	-	-
Catcher/processors										
Atka mackerel	427	476	782	662	510	554	471	500	1,243	815
Flatfish	614	610	519	669	670	1,696	1,174	942	713	767
Other species	155	374	250	357	472	134	322	128	524	565
Pacific cod	1,157	1,205	1,017	974	1,174	1,283	1,267	1,112	1,047	1,168
Pollock	796	721	668	697	705	219	345	484	329	351
Rockfish	544	578	487	640	677	598	696	383	702	870
Sablefish	4,495	5,421	4,424	4,925	4,728	4,564	5,146	3,653	4,213	4,814
Shoreside processors										
Flatfish	307	192	178	66	100	592	876	410	699	619
Other species	-	1,463	-	-	2,064	793	411	649	553	465
Pacific cod	1,021	945	1,097	1,101	1,058	1,391	1,539	1,596	1,881	1,254
Pollock	562	703	648	635	624	699	652	741	795	794
Rockfish	2,020	2,247	3,241	562	1,236	752	670	754	856	737
Sablefish	8,547	6,983	6,643	6,007	6,803	5,211	5,346	5,920	5,953	6,036

Notes: For shoreside processors, these estimates include the product value of catch from both federal and state of Alaska fisheries. For at-sea processors, they include only the product value of catch counted against federal TACs. A dash indicates that data were not available or were withheld to preserve confidentiality.

Source: Weekly processor reports, commercial operators annual report (COAR), blend (1999-2002) and catch accounting system (2003) estimates of retained catch. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 37. Production of groundfish products in the fisheries off Alaska by species, product and area, 1999-2003, (1,000 metric tons product weight).

	Bering Sea and Aleutians					Gulf of Alaska				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Pollock										
Whole fish	4.02	2.54	1.37	1.67	3.36	10.15	.09	.20	.12	.92
H&G	4.47	7.02	7.57	8.94	8.14	.07	.10	2.34	1.54	.18
Roe	10.68	14.66	20.20	24.99	21.33	.54	1.34	2.34	1.50	1.08
Fillets	42.44	54.15	99.76	121.15	149.76	11.27	4.77	5.03	3.38	4.90
Surimi	141.01	181.09	177.85	195.19	190.03	13.26	10.56	9.72	9.62	8.67
Minced fish	6.48	8.99	18.34	24.92	14.43	-	-	-	-	-
Fish meal	46.94	50.25	51.31	55.07	46.14	-	-	-	-	-
Other products	.69	7.01	11.73	20.46	19.27	.00	-	.64	.89	1.06
Pacific cod										
Whole fish	1.06	.77	.47	1.22	1.95	1.71	2.36	1.79	1.05	2.18
H&G	54.96	58.32	57.09	65.40	67.78	10.88	8.33	8.74	7.08	4.35
Salted/split	-	-	3.29	-	-	-	-	-	-	-
Fillets	6.64	7.71	3.87	5.60	6.45	9.99	9.64	6.04	6.71	8.58
Other products	4.32	7.23	7.21	9.68	9.45	7.48	3.78	4.25	6.13	6.19
Sablefish										
H&G	.88	1.09	1.25	1.37	1.14	7.86	7.93	7.89	7.86	8.66
Other products	.01	.01	.01	.01	.37	.04	.18	.23	.23	.52
Flatfish										
Whole fish	9.64	11.88	7.75	13.10	10.20	3.47	3.52	2.72	3.42	3.86
H&G	36.44	42.32	35.16	45.84	48.82	1.46	4.73	1.66	4.16	5.41
Kirimi	4.21	6.37	6.15	2.86	3.68	-	-	-	-	-
Fillets	-	-	-	-	.00	.63	1.77	1.10	1.33	1.02
Other products	.70	.85	.42	.74	.73	-	-	-	.09	-
Rockfish										
Whole fish	1.73	.17	.46	.71	.74	7.02	1.08	.93	1.14	.98
H&G	5.04	4.30	2.94	4.58	5.77	5.15	4.00	4.05	5.20	5.08
Other products	.02	.01	2.14	.00	.04	.98	1.86	1.34	1.71	2.02
Atka mackerel										
Whole fish	10.10	2.92	4.81	3.27	7.13	-	-	-	-	-
H&G	22.18	22.49	26.66	18.53	20.72	.05	.08	.02	.02	.18
Other products	.03	-	.00	.00	.00	-	-	-	-	-

Notes: For shoreside processors, these estimates include production resulting from catch from federal and state of Alaska fisheries. For at-sea processors, they include production only from catch counted against federal TACs. A dash indicates that data were not available or were withheld to preserve confidentiality. Confidential data withheld from this table are not included in the totals in Table 36.

Source: Weekly processor report and commercial operators annual report. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 38. Production of groundfish products in the fisheries off Alaska by species, product and processing mode, 1999-2003, (1,000 metric tons product weight).

	At-sea					On-shore				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Pollock										
Whole fish	4.02	2.54	1.37	1.67	2.89	10.15	.09	.20	.12	1.40
H&G	4.54	7.11	7.63	9.04	8.32	-	-	2.29	1.45	-
Roe	7.00	8.39	10.47	13.95	13.01	4.21	7.62	12.07	12.55	9.40
Fillets	32.68	35.15	51.59	70.29	81.53	21.04	23.77	53.20	54.24	73.13
Surimi	64.07	87.17	81.76	97.77	94.17	90.20	104.48	105.81	107.04	104.53
Minced fish	6.48	8.99	18.34	17.13	14.43	-	-	-	7.79	-
Fish meal	14.54	17.21	20.38	21.08	21.74	32.40	33.04	30.93	33.98	24.40
Other products	.69	.95	1.81	1.71	1.67	-	6.06	10.56	19.64	18.67
Pacific cod										
Whole fish	.15	.59	.22	.94	1.09	2.63	2.54	2.04	1.32	3.04
H&G	59.24	61.15	58.46	63.70	66.17	6.60	5.49	7.37	8.79	5.96
Salted/split	-	-	-	-	-	-	-	3.29	-	-
Fillets	1.63	2.36	1.27	2.35	.99	14.99	14.99	8.63	9.96	14.05
Other products	2.02	3.16	3.15	4.73	3.90	9.78	7.86	8.31	11.09	11.74
Sablefish										
H&G	1.66	1.69	1.29	1.64	1.67	7.08	7.33	7.86	7.59	8.13
Other products	.04	.07	.06	.07	.07	.01	.12	.18	.17	.82
Flatfish										
Whole fish	12.43	15.21	10.34	16.02	13.72	.67	.19	.13	.51	.34
H&G	37.79	47.03	36.71	50.00	54.23	.10	.03	.10	-	-
Kirimi	4.21	6.37	6.15	2.86	3.68	-	-	-	-	-
Fillets	-	-	-	-	.00	.63	1.77	1.10	1.33	1.02
Other products	.70	.85	.42	.75	.73	-	-	-	.08	-
Rockfish										
Whole fish	4.20	.84	.72	1.06	1.34	4.55	.41	.67	.79	.39
H&G	9.74	7.75	6.35	9.35	10.24	.46	.55	.64	.43	.61
Other products	.03	.03	.01	.02	.09	.97	1.84	3.46	1.69	1.97
Atka mackerel										
Whole fish	10.10	2.92	4.81	3.27	7.13	-	-	-	-	-
H&G	22.23	22.57	26.68	18.55	20.89	-	-	-	-	-
Other products	.03	-	.00	.00	.00	-	-	-	-	-

Notes: For shoreside processors, these estimates include production resulting from catch from federal and state of Alaska fisheries. For at-sea processors, they include production only from catch counted against federal TACs. A dash indicates that data were not available or were withheld to preserve confidentiality. Confidential data withheld from this table are not included in the totals in Table 36.

Source: Weekly processor report and commercial operators annual report. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 39. Monthly Japanese landing market price of selected groundfish by species, 1989-2003, in yen/kilogram (weighted average).

Species	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Flatfish, fresh												
1989	634	712	645	588	505	542	590	486	515	552	613	692
1990	674	704	701	665	497	515	615	629	597	637	687	801
1991	695	840	785	640	548	598	684	699	535	737	752	688
1992	739	799	749	687	567	558	605	584	556	587	600	570
1993	638	746	681	611	487	515	475	651	486	576	512	490
1994	603	592	534	573	585	467	541	542	508	474	454	505
1995	499	510	485	540	478	473	523	511	464	362	415	424
1996	501	556	543	472	431	385	477	550	419	403	418	490
1997	473	500	424	417	472	405	445	605	438	476	387	474
1998	434	482	403	337	391	432	505	567	451	397	404	486
1999	433	446	427	397	372	394	417	506	366	346	365	467
2000	447	469	474	391	335	323	446	497	436	464	441	490
2001	567	587	565	459	398	401	452	506	466	495	483	572
2002	596	531	523	477	417	441	541	526	405	532	547	499
2003	643	562	508	420	335	314	379	349	327	366	395	445
Cod, fresh												
1989	170	155	168	119	105	87	132	129	121	211	204	325
1990	282	230	180	148	123	124	153	113	151	192	242	343
1991	296	279	216	148	124	137	136	128	173	261	398	366
1992	332	316	180	164	128	119	135	134	175	221	366	299
1993	281	285	207	167	118	128	154	215	175	305	319	366
1994	261	272	170	132	98	129	117	115	204	311	288	287
1995	244	185	188	103	64	110	146	146	197	257	401	315
1996	296	235	153	83	68	72	176	149	205	273	304	289
1997	235	174	157	111	105	82	192	177	134	330	269	311
1998	234	167	150	104	88	94	173	172	115	211	289	368
1999	284	276	180	153	109	115	148	154	103	225	315	352
2000	299	256	205	146	104	103	169	162	143	238	329	370
2001	418	246	176	134	96	91	124	254	195	305	387	499
2002	453	398	253	156	135	142	216	185	223	434	542	476
2003	407	335	293	203	126	166	218	180	232	309	306	462
Cod, frozen												
1989	280	300	308	238	236	--	132	202	201	350	384	377
1990	374	427	326	347	411	--	--	373	353	--	320	300
1991	331	290	307	325	312	342	--	332	391	410	456	440
1992	369	324	281	251	264	270	298	322	339	348	315	163
1993	278	148	171	164	206	288	259	148	329	387	260	278
1994	309	258	112	245	264	124	217	258	258	246	264	228
1995	232	182	154	177	196	109	135	184	138	134	259	249
1996	265	220	183	211	146	201	247	326	213	292	299	262
1997	199	210	200	184	131	211	223	133	214	225	195	148
1998	185	137	137	217	138	231	239	401	333	296	266	249
1999	298	257	215	302	220	237	218	266	315	266	283	243
2000	241	202	179	203	199	211	208	283	247	298	273	212

Note: This category is not reported after year 2000.

Table 39. Continued.

Species	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Alaska pollock, fresh												
1989	96	117	67	49	47	43	36	35	31	42	48	70
1990	121	121	76	64	57	58	55	57	50	53	66	94
1991	150	172	168	108	81	87	91	111	89	115	135	146
1992	144	201	132	68	35	33	59	64	51	57	64	74
1993	107	157	141	91	54	56	51	51	37	60	62	72
1994	76	125	118	88	45	46	52	51	44	55	67	74
1995	104	132	131	101	40	38	66	59	40	47	74	72
1996	90	120	110	77	33	27	63	46	42	41	54	91
1997	126	122	110	97	69	65	55	48	33	45	51	70
1998	80	85	91	86	35	26	37	35	26	33	56	52
1999	73	86	76	78	42	36	40	24	21	31	46	53
2000	96	79	96	87	51	51	81	55	27	46	109	129
2001	109	127	91	90	60	46	60	80	34	62	105	111
2002	93	108	104	64	56	56	100	106	36	60	93	105
2003	114	99	71	61	59	69	116	82	35	46	55	79
Atka mackerel, fresh												
1989	41	37	42	40	47	36	31	55	46	106	53	44
1990	42	54	45	50	42	48	59	61	57	64	79	85
1991	65	93	111	90	101	120	168	143	93	79	80	57
1992	47	36	65	85	88	91	136	95	87	94	84	48
1993	66	41	33	33	24	44	57	56	40	66	46	26
1994	25	28	21	20	28	30	49	50	42	49	35	30
1995	35	31	29	29	37	49	109	98	39	36	27	19
1996	21	22	29	40	51	40	95	69	40	46	69	28
1997	36	40	40	44	55	59	114	79	48	44	27	30
1998	23	31	23	22	26	26	25	28	23	32	35	27
1999	43	44	32	36	38	57	78	88	40	35	29	17
2000	26	23	22	20	27	34	52	44	42	43	47	49
2001	44	38	32	32	51	58	106	75	54	35	34	31
2002	28	28	29	38	57	60	67	66	32	30	36	28
2003	30	28	28	26	40	47	55	32	20	21	20	15
Rockfish, fresh												
1989	1760	1493	1670	1583	1513	1765	1935	1835	1588	1682	1830	2056
1990	2058	1975	1919	1896	1803	2049	2316	1961	1643	1948	2017	2231
1991	2328	2054	2074	1937	2035	2145	2553	2328	2003	2320	2513	2630
1992	2992	2653	3281	2204	1951	2174	2383	2307	1786	2177	2808	2613
1993	2847	2987	2452	2480	2053	2004	2050	2140	1783	2010	2445	2633
1994	2687	2861	1944	2363	2205	2433	2230	2118	2069	2075	2323	2778
1995	3214	2725	2360	2545	2142	1993	2234	2189	2149	2373	3179	3119
1996	3471	3586	3510	2630	2321	2188	2234	2374	2419	3012	3073	3414
1997	3770	4240	3281	2699	2760	2384	2472	2475	2873	3117	2943	3433
1998	3348	3753	3365	2721	2729	2790	2675	2574	2636	2831	2238	2181
1999	4518	3750	3872	2935	2992	3041	3324	2634	2951	2512	1736	3035
2000	4049	3932	2934	3061	2645	2620	3292	2419	2734	2777	3112	3270

Note: This category is not reported after year 2000.

Source: Monthly Stat. of Agriculture, Forestry, and Fisheries, Stat. and Info. Dept., Ministry of Agriculture, Forestry, and Fishery, Government of Japan. Available from Alaska Fish. Sci. Cen., P.O. Box 15700, Seattle, WA 98115-0070.

Table 40. Monthly Tokyo wholesale prices of selected products, 1990-2003 in yen/kilogram (weighted average).

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Flatfish, frozen												
1990	496	433	439	463	509	616	570	578	637	526	592	552
1991	449	512	572	570	520	541	565	573	509	543	482	485
1992	499	486	517	511	530	491	423	433	499	437	460	413
1993	412	386	404	427	431	447	431	406	418	423	407	414
1994	423	426	403	450	460	433	470	394	414	433	422	455
1995	446	435	450	455	427	443	447	464	440	466	475	500
1996	478	478	467	520	532	544	575	550	562	550	565	580
1997	538	535	535	536	506	533	512	530	509	508	528	540
1998	482	473	511	505	519	514	509	544	524	518	457	447
1999	471	460	475	516	516	490	524	533	469	484	507	514
2000	468	467	456	491	483	483	522	448	492	470	476	509
2001	464	466	470	486	478	477	505	530	513	499	509	521
2002	467	493	516	521	527	531	507	547	546	504	521	530
2003	544	522	563	551	580	606	603	607	610	600	626	632
Cod, frozen												
1990	566	635	623	588	601	678	690	748	708	684	620	726
1991	702	681	694	704	737	694	764	771	780	800	721	742
1992	798	741	774	770	764	741	750	726	734	665	658	647
1993	643	663	670	671	666	707	614	602	604	587	639	644
1994	610	612	635	648	625	614	665	700	633	652	656	656
1995	644	646	628	649	623	583	571	605	614	527	458	567
1996	586	603	636	689	657	677	715	561	584	624	545	590
1997	484	539	598	613	651	560	610	638	609	555	484	503
1998	452	469	508	532	578	596	589	616	598	571	520	565
1999	603	574	624	678	691	751	728	667	567	559	520	542
2000	477	545	616	629	610	621	628	555	641	516	508	512
2001	489	501	582	609	634	573	606	627	619	573	618	530
2002	579	589	641	756	674	625	761	806	814	714	671	710
2003	670	679	591	599	657	620	706	796	717	684	669	719
Surimi												
1992	683	624	591	541	576	555	504	438	443	438	445	415
1993	360	340	347	348	364	350	367	326	332	295	295	309
1994	322	315	309	302	311	320	309	316	310	319	333	350
1995	340	337	332	335	338	341	356	343	368	353	348	335
1996	334	319	314	330	303	342	334	286	308	309	347	321
1997	356	345	340	351	374	388	383	381	402	391	401	402
1998	389	339	354	337	329	339	333	328	313	313	319	334
1999	315	331	328	339	340	346	337	323	339	351	339	330
2000	321	312	298	307	303	297	304	275	289	276	286	294
2001	276	281	282	273	271	272	275	267	268	290	297	298
2002	301	299	303	299	311	317	303	316	302	318	324	339
2003	313	294	295	296	285	272	276	274	272	272	282	271

Note: From 1990-1995 prices are for six large cities wholesale market, and from 1996-2003 prices are for ten large cities wholesale market.

Source: Monthly Stat. of Agriculture, Forestry, and Fisheries, Stat. and Info. Dep., Ministry of Agriculture, Forestry, and Fisheries, Government of Japan. Available from AFSC, P.O. Box 15700, Seattle, WA 98115-0070.

Table 41. U.S. imports of groundfish fillets, steaks, and blocks, 1976-2003, quantity in million lb. product weight and value in million dollars.

	Fillets and steaks		Blocks		Total	
Year	Quantity	Value	Quantity	Value	Quantity	Value
1976	337	$273	379	$211	716	$484
1977	321	305	385	292	706	597
1978	333	341	406	325	739	666
1979	340	385	408	337	748	722
1980	297	341	336	289	633	630
1981	346	415	344	301	690	716
1982	371	458	319	274	690	732
1983	355	449	384	339	739	788
1984	373	459	316	263	689	722
1985	388	500	334	275	722	775
1986	366	542	364	380	730	922
1987	408	759	403	539	812	1,298
1988	323	568	303	382	626	950
1989	333	578	282	325	616	903
1990	262	482	264	373	526	856
1991	255	526	290	444	545	970
1992	221	437	229	304	450	741
1993	236	452	212	219	447	671
1994	229	433	200	184	428	617
1995	232	437	210	213	442	650
1996	223	407	234	213	457	620
1997	219	426	234	231	453	657
1998	236	460	233	271	469	731
1999	272	550	214	250	486	801
2000	284	545	204	209	488	753
2001	243	462	147	159	389	621
2002	283	531	147	165	430	695
2003	292	531	129	139	422	670

Source: U.S. Department of Commerce, Bureau of the Census, Washington, D.C. 20233; and Fisheries of the United States, National Marine Fisheries Service, Fisheries Statistics Division, 1315 East-West Highway, Silver Spring, MD 20910, various issues.

Table 42. U.S. per capita consumption of fish and shellfish, 1970-2003, population in millions and consumption in pounds, edible weight.

Year	Total civilian population	Per capita consumption			
		Fresh and frozen	Canned	Cured	Total
1970	201.9	6.9	4.5	.4	11.8
1971	204.9	6.7	4.3	.5	11.5
1972	207.5	7.1	4.9	.5	12.5
1973	209.6	7.4	5.0	.4	12.8
1974	211.6	6.9	4.7	.5	12.1
1975	213.8	7.5	4.3	.4	12.2
1976	215.9	8.2	4.2	.5	12.9
1977	218.1	7.7	4.6	.4	12.7
1978	220.5	8.1	5.0	.3	13.4
1979	223.0	7.8	4.8	.4	13.0
1980	225.6	7.9	4.3	.3	12.5
1981	227.8	7.8	4.6	.3	12.7
1982	230.0	7.9	4.3	.3	12.5
1983	232.1	8.4	4.7	.3	13.4
1984	234.1	9.0	4.9	.3	14.2
1985	236.2	9.8	5.0	.3	15.1
1986	238.4	9.8	5.4	.3	15.5
1987	240.6	10.7	5.2	.3	16.2
1988	242.8	10.0	4.9	.3	15.2
1989	245.1	10.2	5.1	.3	15.6
1990	247.8	9.6	5.1	.3	15.0
1991	250.5	9.7	4.9	.3	14.9
1992	253.5	9.9	4.6	.3	14.8
1993	256.4	10.2	4.5	.3	15.0
1994	259.2	10.4	4.5	.3	15.2
1995	261.4	10.0	4.7	.3	15.0
1996	264.0	10.0	4.5	.3	14.8
1997	266.4	9.9	4.4	.3	14.6
1998	269.1	10.2	4.4	.3	14.9
1999	271.5	10.4	4.7	.3	15.4
2000	280.9	10.2	4.7	.3	15.2
2001	283.6	10.3	4.2	.3	14.8
2002	287.1	11.0	4.3	.3	15.6
2003	289.6	11.4	4.6	.3	16.3

Note: Per capita consumption represents pounds of edible meat consumed from domestically caught and imported fish and shellfish adjusted for beginning and ending inventories (through 2002) and exports, divided by the civilian resident population of the United States as of 1 July of each year. Population estimates for 1980-91 were revised to reflect changes from the 1990 decennial population enumeration. Changes did not significantly alter pounds per capita.

Source: Fisheries of the United States, 2003. National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910, CFS No. 9600, September 2003.

Table 43. U.S. consumption of all fillets and steaks, and fish sticks and portions, total in 1,000 lb and per capita in pounds, product weight, 1980-2003.

Year	Fillets and steaks[1]		Fish sticks and portions	
	Total[2]	Per capita	Total[2]	Per capita
1980	541,440	2.4	451,200	2.0
1981	546,720	2.4	410,040	1.8
1982	575,000	2.5	391,000	1.7
1983	626,670	2.7	417,780	1.8
1984	702,300	3.0	421,380	1.8
1985	755,840	3.2	425,160	1.8
1986	810,560	3.4	429,120	1.8
1987	866,160	3.6	409,020	1.7
1988	776,960	3.2	364,200	1.5
1989	759,810	3.1	367,650	1.5
1990	768,180	3.1	371,700	1.5
1991	751,500	3.0	300,600	1.2
1992	735,150	2.9	228,150	0.9
1993	743,560	2.9	256,400	1.0
1994	803,520	3.1	233,280	0.9
1995	758,060	2.9	313,680	1.2
1996	792,000	3.0	264,000	1.0
1997	799,200	3.0	266,400	1.0
1998	861,120	3.2	242,190	0.9
1999	868,800	3.2	271,500	1.0
2000	1,011,240	3.6	252,810	0.9
2001	1,049,320	3.7	226,880	0.8
2002	1,177,110	4.1	229,680	0.8
2003	1,245,280	4.3	202,720	0.7

[1]Series revised in 1993 to reflect deduction of fillet production used to produce blocks, exports of foreign fillets and steaks, and changes in population estimates from 1990 decennial population enumeration.

[2]Per Capita multiplied by total U.S. population.

Source: Computed from data from U.S. Department of Commerce, Bureau of the Census; and Fisheries of the United States, National Marine Fisheries Service, Fisheries Statistics Division, 1315 East-West Highway, Silver Spring, MD 20910, various issues.

Table 44. Annual U.S. economic indicators: Selected producer and consumer price indexes and gross domestic product implicit price deflator, 1976-2003.

	Producer price index (Index 1982 = 100)					Consumer price index (Index 1982-84 = 100)				GDP Deflator (Index 2000 = 100)
Year	All items	Meat	Poultry	Fish	Petrl. products	All items	Meat	Poultry	Fish	GDP Deflator
1976	61.1	69.3	93.0	64.5	36.3	56.9	66.4	76.4	60.2	40.39
1977	64.9	68.1	97.0	69.7	40.5	60.6	64.9	76.9	66.6	42.92
1978	69.9	83.6	108.6	74.1	42.2	65.2	77.0	84.9	73.0	46.07
1979	78.7	93.3	105.6	90.9	58.4	72.6	90.1	89.1	80.1	50.12
1980	89.8	94.1	108.2	87.8	88.6	82.4	92.7	93.7	87.5	54.56
1981	98.0	95.4	108.2	89.4	105.9	90.9	96.0	97.5	94.8	59.64
1982	100.0	100.0	100.0	100.0	100.0	96.5	100.7	95.8	98.2	63.18
1983	101.3	94.3	103.7	105.4	89.9	99.6	99.5	97.0	99.3	65.52
1984	103.7	94.5	115.3	112.7	87.4	103.9	99.8	107.3	102.5	67.95
1985	103.2	90.9	110.4	114.6	83.2	107.6	98.9	106.2	107.5	69.84
1986	100.2	93.9	116.8	124.9	53.2	109.6	102.0	114.2	117.4	71.43
1987	102.8	100.4	103.5	140.0	56.8	113.6	109.6	112.6	129.9	73.43
1988	106.9	99.9	111.6	148.7	53.9	118.3	112.2	120.7	139.4	76.14
1989	112.2	104.8	120.4	142.9	61.2	124.0	116.7	132.7	143.6	78.88
1990	116.3	117.0	113.6	147.2	74.8	130.7	128.5	132.5	146.7	82.03
1991	116.5	113.5	109.9	149.5	67.2	136.2	132.5	131.5	148.3	84.76
1992	117.2	106.7	109.0	156.1	64.7	140.3	130.7	131.4	151.7	86.58
1993	118.9	110.6	111.7	156.5	62.0	144.5	134.6	136.9	156.6	88.57
1994	120.4	104.7	114.7	161.4	59.1	148.2	135.4	141.5	163.7	90.53
1995	124.7	102.9	114.2	170.8	60.8	152.4	135.5	143.5	171.6	92.29
1996	127.7	109.0	119.7	165.9	70.1	156.9	140.2	152.4	173.1	93.95
1997	127.6	111.6	117.4	178.1	68.0	160.5	144.4	156.6	177.1	95.53
1998	124.4	101.3	120.8	183.2	51.3	163.0	141.6	157.1	181.7	96.60
1999	125.5	104.6	114.0	190.9	60.9	166.6	142.3	157.9	185.3	98.01
2000	132.7	114.3	112.9	198.1	91.3	172.2	150.7	159.8	190.4	100.26
2001	134.2	120.3	116.8	190.8	85.3	177.1	159.3	164.9	191.1	102.68
2002	131.1	113.4	111.3	191.2	79.5	179.9	160.3	167.0	188.1	104.24
2003	138.1	128.2	116.6	195.3	97.7	184.0	169.0	169.1	190.0	106.15

Note: GDP deflators are the values published for July 1 (second quarter) of each year.

Source: Producer prices and price indexes, and consumer price indexes: U.S. Department of Labor, Bureau of Labor Statistics, http://www.bls.gov/data/sa.htm
GDP deflators: U.S. Department of Commerce, Bureau of Economic Analysis, http://research.stlouisfed.org/fred2/series/GDPDEF

Table 45. Monthly U.S. economic indicators: Selected producer and consumer price indexes, 2001-03.

	Producer price index (Index 1982 = 100)					Consumer price index (Index 1982-84 = 100)			
Month	All items	Meat	Poultry	Fish	Petrl. products	All items	Meat	Poultry	Fish
2001									
Jan.	140.0	115.8	110.0	193.7	91.4	175.1	154.1	160.8	192.8
Feb.	137.4	118.8	112.3	210.5	90.4	175.8	156.5	161.8	193.0
Mar.	135.9	121.5	114.1	200.9	85.9	176.2	157.9	162.6	190.7
Apr.	136.4	123.7	115.8	205.2	94.0	176.9	158.0	163.1	192.4
May	136.8	124.8	116.7	192.7	101.2	177.7	158.9	162.3	194.6
Jun.	135.5	123.1	117.6	182.2	95.1	178.0	160.2	164.5	191.5
Jul.	133.4	122.7	117.2	185.9	82.4	177.5	160.8	166.6	191.0
Aug.	133.4	123.6	118.8	185.5	85.4	177.5	160.7	167.5	189.7
Sep.	133.3	120.8	121.4	192.8	94.6	178.3	161.5	165.4	189.1
Oct.	130.3	120.0	121.0	181.4	75.6	177.7	161.8	169.6	189.5
Nov.	129.8	114.2	120.0	181.5	68.3	177.4	161.2	166.4	189.2
Dec.	128.1	114.9	116.7	177.3	59.2	176.7	160.0	167.7	189.4
2002									
Jan.	128.5	113.2	115.5	184.2	61.3	177.1	160.0	166.8	189.2
Feb.	128.4	116.9	114.4	203.8	62.9	177.8	159.9	167.8	186.0
Mar.	129.8	118.3	112.4	185.2	72.5	178.8	161.3	168.0	185.6
Apr.	130.8	115.2	110.5	187.6	82.4	179.8	160.6	166.9	189.2
May	130.8	112.9	112.1	192.6	80.9	179.8	160.6	167.0	191.0
Jun.	130.9	113.5	112.1	184.3	79.6	179.9	160.5	165.6	188.1
Jul.	131.2	114.2	111.7	191.3	81.2	180.1	160.2	167.2	191.2
Aug.	131.5	112.0	109.9	189.1	82.3	180.7	160.7	166.1	187.2
Sep.	132.3	110.1	111.1	192.0	88.2	181.0	159.9	167.8	186.9
Oct.	133.2	109.9	108.7	204.6	95.6	181.3	159.5	166.6	187.4
Nov.	133.1	110.3	108.6	199.7	85.8	181.3	159.7	168.1	187.4
Dec.	132.9	114.0	109.0	180.1	81.2	180.9	160.3	166.6	187.4
2003									
Jan.	135.3	118.0	109.6	190.5	93.1	181.7	159.5	165.4	187.8
Feb.	137.6	119.6	112.8	192.6	110.6	183.1	163.2	167.2	189.4
Mar.	141.2	120.4	113.9	197.6	118.4	184.2	163.6	167.6	186.8
Apr.	136.8	121.6	113.1	214.5	95.7	183.8	164.1	168.2	187.3
May	136.7	123.9	114.4	199.7	88.1	183.5	164.0	165.9	189.6
Jun.	138.0	131.3	115.6	196.0	92.3	183.7	166.6	167.7	191.2
Jul.	137.7	126.5	116.8	192.9	95.1	183.9	168.0	168.9	189.5
Aug.	138.0	128.1	118.3	194.5	100.0	184.6	169.2	169.0	191.8
Sep.	138.5	131.2	120.0	197.2	97.8	185.2	171.0	169.7	191.0
Oct.	139.3	144.4	120.6	190.5	96.3	185.0	174.6	172.5	190.5
Nov.	138.9	138.8	121.2	185.7	91.6	184.5	181.3	172.5	192.5
Dec.	139.5	134.4	122.2	191.7	92.8	184.3	182.7	174.4	192.5

Source: Producer prices and price indexes, and consumer price indexes, U.S. Department of Labor, Bureau of Labor Statistics, http://www.bls.gov/data/sa.htm

Table 46. Annual foreign exchange rates for selected countries, 1976-2003, in national currency units per U.S. dollar.

Year	Canada (dollar)	Denmark (kroner)	Japan (yen)	ROK (won)	New Zeal. (dollar)	Iceland (kronur)	Norway (kroner)	U.K. (pound)
1976	0.9860	6.0450	296.55	484.00	1.0036	1.822	5.4565	0.5536
1977	1.0635	6.0032	268.51	484.00	1.0301	1.989	5.3235	.5729
1978	1.1407	5.5146	210.44	484.00	.9636	2.711	5.2423	.5210
1979	1.1714	5.2610	219.14	484.00	.9776	3.526	5.0641	.4713
1980	1.1692	5.6359	226.74	607.43	1.0265	4.798	4.9392	.4299
1981	1.1989	7.1234	220.54	681.03	1.4194	7.224	5.7395	.4931
1982	1.2337	8.3324	249.08	731.08	1.3300	12.352	6.4540	.5713
1983	1.2324	9.1450	237.51	775.75	1.4952	24.843	7.2964	.6592
1984	1.2951	10.3566	237.52	805.98	1.7286	31.694	8.1615	.7483
1985	1.3655	10.5964	238.54	870.02	2.0064	41.508	8.5970	.7714
1986	1.3895	8.0910	168.52	881.45	1.9088	41.104	7.3947	.6971
1987	1.3260	6.8400	144.64	822.57	1.6886	38.677	6.7375	.6102
1988	1.2307	6.7320	128.15	731.47	1.5244	43.014	6.5170	.5614
1989	1.1840	7.3100	137.96	671.46	1.6708	57.042	6.9045	.6099
1990	1.1668	6.1890	144.79	707.76	1.6750	58.284	6.2597	.5603
1991	1.1457	6.3960	134.71	733.35	1.7265	58.996	6.4829	.5652
1992	1.2087	6.0360	126.65	780.65	1.8580	57.546	6.2145	.5664
1993	1.2901	6.4840	111.20	802.67	1.8494	67.603	7.0941	.6658
1994	1.3656	6.3610	102.21	803.44	1.6844	69.944	7.0576	.6529
1995	1.3724	5.6020	94.06	771.27	1.5235	64.692	6.3352	.6335
1996	1.3635	5.7990	108.78	804.45	1.4540	66.500	6.4498	.6400
1997	1.3849	6.6092	121.06	950.77	1.5094	70.904	7.0857	.6106
1998	1.4835	6.7008	130.91	1401.44	1.8683	70.958	7.5451	.6038
1999	1.4858	6.9900	113.73	1189.84	1.8889	72.474	7.8071	.6184
2000	1.4855	8.0953	107.80	1130.90	2.1805	78.896	8.8131	.6598
2001	1.5487	8.3323	121.57	1292.01	2.3798	97.690	8.9964	.6946
2002	1.5704	7.8862	125.22	1250.31	2.1529	91.669	7.9839	.6656
2003	1.4013	6.5800	115.97	1192.08	1.7185	76.780	7.0819	.6120

ROK - Republic of Korea. U.K. - United Kingdom.

Source: Through 1998 - International Financial Statistics, International Monetary Fund, Washington, D.C.; 1999-2003 (except Iceland) - U.S. Federal Reserve Board, www.federalreserve.gov; 1999-2003 Iceland - www.oanda.com

Table 47. Monthly foreign exchange rates for selected countries, 2001-03, in national currency units per U.S. dollar.

Month	Canada (dollar)	Denmark (kroner)	Japan (yen)	ROK (won)	New Zeal. (dollar)	Iceland (kronur)	Norway (kroner)	U.K. (pound)
2001								
Jan.	1.503	7.96	116.7	1272.6	2.251	85.07	8.78	.677
Feb.	1.522	8.11	116.2	1252.9	2.301	86.02	8.92	.688
Mar.	1.559	8.22	121.5	1291.4	2.391	87.60	8.99	.692
Apr.	1.558	8.37	123.8	1327.8	2.458	93.20	9.09	.697
May	1.541	8.53	121.8	1298.9	2.371	100.19	9.14	.701
Jun.	1.525	8.74	122.4	1295.1	2.415	104.63	9.30	.713
Jul.	1.531	8.64	124.5	1305.2	2.450	102.17	9.26	.707
Aug.	1.540	8.26	121.4	1285.7	2.318	98.44	8.94	.696
Sep.	1.568	8.17	118.6	1293.8	2.396	99.98	8.77	.683
Oct.	1.572	8.22	121.5	1302.4	2.416	102.60	8.83	.690
Nov.	1.592	8.38	122.4	1282.1	2.405	107.10	8.93	.697
Dec.	1.579	8.35	127.6	1292.3	2.406	104.61	8.97	.694
2002								
Jan.	1.600	8.42	132.7	1316.3	2.356	102.61	8.97	.698
Feb.	1.596	8.53	133.6	1320.6	2.388	101.60	8.95	.703
Mar.	1.588	8.48	131.1	1322.9	2.308	100.42	8.81	.703
Apr.	1.582	8.39	130.8	1318.1	2.258	97.46	8.61	.693
May	1.550	8.11	126.4	1262.2	2.169	92.06	8.21	.685
Jun.	1.532	7.78	123.3	1219.7	2.047	89.54	7.75	.674
Jul.	1.546	7.48	117.9	1180.0	2.079	85.70	7.47	.643
Aug.	1.569	7.59	119.0	1197.5	2.158	86.08	7.60	.651
Sep.	1.576	7.58	121.1	1211.6	2.127	87.69	7.50	.643
Oct.	1.578	7.57	123.9	1240.2	2.076	87.86	7.49	.642
Nov.	1.572	7.42	121.6	1210.2	2.011	86.23	7.32	.637
Dec.	1.559	7.29	121.9	1206.6	1.958	83.54	7.16	.630
2003								
Jan.	1.541	7.00	118.8	1176.5	1.853	79.87	6.91	.618
Feb.	1.512	6.89	119.3	1190.4	1.805	77.76	7.00	.622
Mar.	1.476	6.88	118.7	1237.2	1.806	78.22	7.28	.632
Apr.	1.458	6.84	119.9	1231.1	1.812	76.97	7.20	.635
May	1.384	6.43	117.4	1201.2	1.737	73.23	6.81	.616
Jun.	1.353	6.36	118.3	1194.1	1.720	74.06	7.01	.602
Jul.	1.382	6.54	118.7	1181.2	1.705	77.19	7.29	.616
Aug.	1.396	6.67	118.7	1178.6	1.716	79.76	7.41	.627
Sep.	1.363	6.60	114.8	1165.4	1.711	79.16	7.28	.619
Oct.	1.322	6.34	109.5	1169.3	1.661	76.27	7.03	.596
Nov.	1.313	6.35	109.2	1186.4	1.591	75.81	7.01	.592
Dec.	1.314	6.06	107.8	1192.4	1.546	73.14	6.72	.571

ROK - Republic of Korea. U.K. - United Kingdom.

Source: U.S. Federal Reserve Board, www.federalreserve.gov, except Iceland is from www.oanda.com

INTENTIONALLY LEFT BLANK

Regional Economic Information and Analysis

This section provides information concerning the importance of seafood processing in Alaska to regional economic activity in Alaska. Subsequent analyses will address the importance of other sectors of the fishing industry to regional economic activity in Alaska and in other states.

Processing Sector Analysis

Seafood processing is an important part of the basic sector in many coastal regions in Alaska. In this section, the importance of seafood processing sector for the coastal regions is measured in terms of the following: (1) the percentage of total employment in a region accounted for by seafood processing employment, (2) labor earnings in seafood processing as a percentage of total regional labor earnings, (3) multipliers for an example Alaska region, Kodiak Island Borough, and (4) economic base analysis for eleven selected fishery-dependent areas using employment and labor income multipliers. Since different data will be used for the analysis in this section, a comparative discussion of the different data is provided before the results of the analysis are presented.

1. Data

Four different sources of employment/earnings data by borough/census area are used for analysis in this section. They are the U.S. Census, the Bureau of Economic Analysis (BEA)/Regional Economic Information System (REIS), IMPLAN (IMpact analysis for PLANning), and the Alaska Department of Labor (ADOL). The following descriptions of the data from each source explain why the employment/earnings estimates differ by source.

Census Data

The Census Bureau collects primary data on population, housing, and economic characteristics (income and employment by industry) every ten years. The employment in the Census data is defined as the number of employed civilian population 16 years or over, and includes self employment. The Census definition of employment is different from the definitions used by other data sources such as BEA, IMPLAN, and ADOL below, in which employment is defined as the number of full- and part-time jobs. Since a worker can have more than one job, it is possible that the employment in an industry reported in Census data is smaller than that reported by the other data sources. The Census data also reports the employment in armed forces. The strength of the Census data is that it is gathered by primary research rather than by other secondary sources. However, it does not provide annual information. In addition, seafood processing employment is not separated from total manufacturing employment in the Census data. Also, information on labor earnings by industry is not available.

BEA/REIS Data

In the BEA data, the nation's disparate economic data are reconciled into a single set of balanced accounts. Thus, the BEA data provides a comprehensive view of the nation's economic activity. BEA relies almost entirely on secondary data provided by many federal government agencies including the Census Bureau, Bureau of Labor Statistics (BLS), and Internal Revenue Service (IRS). For wage and salary employment, BEA takes the information from BLS employment data, which comes from state report ("Alaska Quarterly Contribution Report" for Alaska). For information on self-employment, BEA relies on IRS data. One of the major BEA products is the REIS. The REIS data has information on both labor income by industry and other sources of income such as transfer payment and investment income. In producing REIS, BEA uses the data generated via various federal and state programs, including unemployment insurance (UI), social security, and military payroll. The BEA/REIS employment data is generated every year. The employment in BEA/REIS data is defined as the total number of full- and part-time jobs. The employment data includes self-employment and military employment as well as wage and salary jobs; however, as with other data sources, fisherman employment is underestimated. BEA/REIS data do not separate seafood processing employment from total manufacturing employment. Much of the information on employment and earnings for industries are confidential.

IMPLAN Data

IMPLAN data is generated by Minnesota IMPLAN Group, Inc. IMPLAN has two components – the database and the software. The IMPLAN database includes data on 21 economic and demographic variables for 528 sectors for any county (borough) or state in the U.S[1]. The economic variables include employment, value-added, government purchases, and household purchases. The database also includes the use matrix and the make matrix. The use matrix details the dollar values of intermediate inputs used in each industry to produce output in the industry – i.e., the goods and services purchased by each industry and used in its production process. The make matrix gives the value of each commodity or service produced by each industry. It is possible for a single industry to produce more than one commodity. The software is an algorithm to solve an input-output (IO) model. IMPLAN was originally developed by the USDA Forest Service to assist the agency in land and resource management planning. In 1993, Minnesota IMPLAN Group (MIG), Inc. took over the development of IMPLAN data and software. IMPLAN data are available for years 1990 through 2001. The currently available version of IMPLAN software is version 2.0. The new version (version 3.0), which will be released soon, will use new industry classification scheme called North American Industrial Classification System (NAICS), and will have the capability to develop multiregional input-output (MRIO) models, in which interregional flows of intermediate inputs are specified.

Three different employment data sets comprise the IMPLAN employment data since no one data set provides enough information to make a complete database. These data sets are the BLS ES 202 data, the REIS data, and the County Business Patterns (CBP) data. ES 202 data ("covered employment and wages" data) contains quarterly job and wage data from all employers participating in state UI program. Since states collect the data as part of the UI program, only establishments that pay UI are captured. This means that the data misses self-employed workers or any other establishments that do not pay into the UI program. IMPLAN uses CBP data to derive those employment numbers which are missing in ES 202 data and in REIS data due to confidentiality. The REIS data is expanded to separate wage and salary employment and self-employment. The REIS data is then used as final control totals. Employment in IMPLAN is defined as the number of full- and part-time jobs. In 1998 IMPLAN data, which will be used for analyses below, there are three fishery-related sectors in the IMPLAN data[1]. They are Commercial Fishing (Sector 25), Canned and Cured Seafood (Sector 97), and Prepared Fresh or Frozen Fish or Seafood (Sector 98). In IMPLAN, both self employment and military employment are included in the total regional employment; however, as with other data sources, fisherman employment is underestimated. Like BEA/REIS data discussed above and ADOL data discussed below, IMPLAN data is available for every year.

ADOL Data

ADOL collects data on employment and earnings from employers through the UI program. Under this program, each employer is required to file in each quarter the Alaska Quarterly Contribution Report (Form 1004) to the state. This report includes information on the number of workers who worked during or received pay for the payroll period, which includes the 12th of the month, for each of the three months in a quarter. Also, the report has information on, among other things, (1) number of workers employed at some time during the quarter and (2) names, social security numbers, and reportable wages of the workers. This information would only be available for workers employed at any time during a calendar quarter, not monthly, since employers file quarterly and do not indicate which of their workers were employed in which month of the quarter. The data by worker are confidential, as are the data by sector and area if there are not a sufficient number of employers for a sector in an area. These confidential data are not available to NMFS. Currently, the ADOL monthly employment data is available for years 1997 through 2002 at the borough or census area level. Starting from 2002 data, ADOL reports the employment and earnings data by NAICS. However, ADOL has historical employment data available back to 1990 for six larger economic regions (Table 1). The employment in the ADOL data is defined as total number of full- and part-time jobs. The employment on Alaska Quarterly Contribution Report is the number of employees (jobs), not the number of different individuals, because workers holding more than one job or who change jobs during the week of the 12th may be reported by more than one employer. The annual average monthly employment in the ADOL employment data is derived by dividing the summation of monthly employments over 12 months by number of months (12 months). Self-employment

is not included in the data. Fishers are self-employed, and therefore, are not included in the ADOL employment data. Most of agricultural workers are excluded from ADOL employment data (Personal communication with Dan Robinson, ADOL, 2003). The wage and salary employment not covered by UI is estimated and included in the employment data. The total regional employment reported in the data includes civilian military workers (personal communications with Jeff Hadland, ADOL, 2003). The ADOL employment data has several advantages over Census data, BEA/REIS data, and IMPLAN data. First, ADOL data provides monthly employment numbers and annual average employment numbers. Second, the employment numbers for all industries are disclosed – i.e., not confidential. Third, the ADOL data separates seafood processing employment (i.e., employment in "Food and Kindred Products") from total regional manufacturing employment. However, the ADOL data has a limitation, self employment is not included. In addition, uniformed military employment is not reported in ADOL data set. Overall, however, ADOL data is judged to be the best data for the analysis in this section because no other data provides more frequent and detailed information on seafood processing employment than the ADOL data. Table 2 shows which categories of employment (e.g., wage and salary employment and self-employment) are included in each of the four data sources.

2. Processing Employment as Percentage of Total Regional Employment

Table 3 presents the percentages of employment accounted for by seafood processing employment for selected boroughs and census areas in Alaska and for the state. Different data sources are used to calculate the numbers in the table. The average percentages from the different data sources are also estimated. Only those boroughs and census areas whose average percentage for processing employment is five percent or higher are listed in the table. To calculate the percentages in the second column in Table 3, 1998 IMPLAN data are used. Percentages are calculated by dividing employment (full- and part-time jobs) in seafood processing sector (IMPLAN sectors 97 and 98) by the total regional employment given by IMPLAN. Since many of the fishermen/crew members in commercial harvesting sector are not captured in the IMPLAN data, the total regional employment could be underestimated. This implies that the percentages for processing employment in the second column in this table could be overestimated.

To calculate the percentage in the third column, 2000 ADOL data are used. Percentages are calculated by dividing annual average monthly employment (full- and part-time jobs) in Food and Kindred Products sector by the total regional employment. However, since self-employment (fishermen and most agricultural workers) is not included in the total regional employment in ADOL data, it is possible that the percentages presented in third column are overestimated. The percentages reported in the fourth column are computed using 2000 BEA/REIS data. Since BEA/REIS data do not separate seafood processing employment from total regional manufacturing employment, it was necessary to adjust the BEA/REIS

information in the following manner. First, the percentage of processing employment (Food and Kindred Products) to the total manufacturing employment is calculated for each region using ADOL data. Then, this percentage is multiplied by the percentage of total manufacturing employment to total regional employment derived from BEA/REIS data, to compute the percentages reported in this column.

For the numbers in the fifth column, 2000 U.S. Census data are used. Like BEA/REIS data, Census data do not separate seafood processing employment from total manufacturing employment. Therefore, to calculate the percentages reported in this column, first, the percentage of processing employment (Food and Kindred Products) to the total manufacturing employment is calculated for each region using ADOL data. This percentage is then multiplied by the percentage of total manufacturing employment to total regional employment derived from U.S. Census data, to calculate the percentages reported in this column. Although Census data has information on employment in armed forces, the total regional employment used to compute the percentages of processing employment in the fifth column does not include any military employment. As a result, it is possible that the percentages reported in this column are overestimated. The last column in the table presents the average percentages computed using the four different sources. According to the last column, the four regions with the highest average percentage are Aleutians East Borough (59.6%), Aleutians West Census Area (40.6%), Kodiak Island Borough (21.6%), and Bristol Bay Borough (20.0%). The average percentage for the state is 2.5%.

Figures 1 through 4 are based on ADOL data (provided by Dan Robinson). Figure 1 presents the processing employment as percentage of total regional employment from 1997 to 2002 for three larger Alaska regions which are heavily dependent on fisheries – Southwest, Gulf Coast, and Southeast regions. Table 1 lists the boroughs and census areas which belong to each of these and other larger Alaska regions. Figure 1 shows that the percentages of employment accounted for by seafood processing employment in Southwest region are the highest for all years, followed by Gulf Coast and Southeast regions. Figures 2, 3, and 4 present the processing employment as percentages of total regional employment from 1997 to 2002 for selected boroughs and census areas in Southwest, Gulf Coast, and Southeast regions, respectively. As shown in Figure 2, the percentages for Aleutian East Borough are the highest for all years, followed by Aleutian Island West Census Area and other areas.

Table 4 presents monthly distribution of processing employment for the same boroughs and census areas as in Table 3, i.e., those boroughs and census areas whose average percentage of processing employment is five percent or higher, and for state of Alaska. 2002 ADOL employment data (provided by Dan Robinson) are used to calculate the numbers in Table 4. Percentages are computed by dividing monthly employment in Food and Kindred Products sector by total annual employment in the sector.

3. Labor Earnings in the Seafood Processing Sector as Percentage of Total Regional Labor Earnings

Table 5 presents labor income in the seafood processing sector as a percentage of total regional labor income for selected areas. Only three different data sources – IMPLAN, ADOL, and BEA/REIS – are used to calculate the numbers in the table since Census data do not provide labor earnings data by industry. The average percentages from the different data sources are also presented in the last column. Table 6 presents the dollar amount of labor earnings from 1998 IMPLAN data for selected areas. In the second column of the table, labor earnings in the seafood processing sectors (IMPLAN sectors 97 and 98) are presented. The third column shows the labor earnings in Food and Kindred Products (IMPLAN sectors 58-103). The fourth column presents similar information for the whole manufacturing sector (IMPLAN sectors 58-432). In the fifth column, the ratios of labor earnings in the seafood processing sector to labor earnings in the Food and Kindred Products sector are presented. In the sixth column, the ratios of labor earnings in seafood processing sector to labor earnings in the whole manufacturing sector are shown. The ratios in the sixth column in Table 6 could be used to adjust some of the percentages in the fourth column in Table 5. For example, in Table 5, the labor income in the whole manufacturing sector is about 7.8 percent of the total regional labor income for Valdez-Cordova Census Area. This percentage (7.8 %) can be multiplied by the ratio (0.74) of seafood processing earnings to the labor earnings in the whole manufacturing sector for the same area in the sixth column in Table 6, to derive the labor earnings in the seafood processing sector as a percentage of total regional labor income.

Table 7 presents the annual labor earnings in the seafood processing sector for years 1993 through 2002, for selected areas. Table 8 presents the annual labor earnings as a percentage of total regional labor earnings for the same years and for the same selected areas. The information presented in Table 9 and Figure 5 is based on data obtained from an economist (Dan Robinson) at ADOL (2003). Table 9 presents annual labor earnings in the seafood processing sector (not "Food and Kindred Products" sector) for 13 years (1990-2002) for Southwest, Gulf Coast, and Southeast regions. Figure 5 shows labor earnings in the seafood processing sector as percentage of total regional labor earnings for years 1997 through 2002 for the same regions. In calculating the percentages in Figure 5, data for total regional labor earnings is from *Employment and Earnings Summary Report* (ADOL, various years) and the data for labor earnings in the seafood processing sector (not "Food and Kindred Products" sector) is obtained from the ADOL economist.

In Table 10, seafood processing labor income as percentage of *total personal income* for each of the selected areas is shown. The total personal income used to calculate the percentages in the table is derived as earnings by place of work (i.e., total regional labor earnings) minus personal contribution for social insurance plus adjustment for residence plus transfer payments and investment income (dividends,

interest, and rent). Transfer payments, an important source of personal income in Alaska, are presented for years 1993 through 2002 in Table 11.

4. Multiplier Analysis for Kodiak Island Borough

When there is an exogenous change in final demand for the goods and services of a region, there are direct, indirect, and induced effects on a regional economy. Input-output (IO) models are used to estimate these effects. Direct effects are the changes in the industries (e.g., changes in output, employment, or labor income) to which a final demand change was made. Indirect effects are changes in inter-industry purchases as they respond to the new demands of the directly affected industries. Induced effects reflect changes in household spending as income changes due to the changes in production. The total effects are the sum of direct, indirect, and induced effects. In an IO model, a multiplier is defined as the total effects (direct, indirect, and induced effects) divided by the direct effects. There are three types of multipliers used in this analysis – output multiplier, employment multiplier, and labor income multiplier. An output multiplier measures the effects on outputs of the sectors in a regional economy. Thus, the output multiplier is defined as the increase (decrease) in total regional output (total effects) due to an increase (decrease) in final demand for an industry' output by $1 (direct effects). An employment multiplier measures the effects on employment (in physical terms) due to an increase (decrease) in final demand for an industry' output by $1 million. A labor income multiplier measures the effects on labor income generated due to an increase (decrease) in final demand for an industry' output by $1. Labor income in this section is defined as employee compensation plus proprietors' income. Multiplier values depend on, among other things, the size of the economy, the relationships between industries, and the leakage of expenditures and income. For detailed definitions of these and other terms used in IO analysis, see Miller and Blair (1985).

In this section, an inter-industry, multiplier analysis is conducted using an IO model for Kodiak Island Borough as an example fishery-dependent region. The Kodiak Island IO model is implemented by 1998 IMPLAN data and software. The 528 IMPLAN sectors are aggregated into 16 sectors – 13 private sectors and 3 government sectors. Table 12 shows how the sectors are aggregated. For the multiplier analysis in this section, the two IMPLAN seafood processing sectors (Sectors 97 and 98) are aggregated into one sector labeled Fish Processing Sector in this analysis.

Tables 13, 14, and 15 present output, employment, and labor income multipliers, respectively, for the 16 aggregated sectors for the Kodiak Island Borough. The estimated multipliers in Table 13 indicate that if the landings of raw fish (ex-vessel value) caught by catcher vessels owned by residents of the borough increase by $1 million, then the total output in the borough will increase by about $1.25 million. This includes only downstream effects; therefore, it does not include any of the effects of the associated increase in seafood production. The estimates in that table also indicate that if there is an increase in final demand for processing output (e.g.,

exports of processed products) by $1million, then the total output in the regional economy will increase by $1.37 million, which is the sum of $1 million (direct effects), $0.23 million (indirect effects), and $0.14 million (induced effects). The multipliers given in the table show by how much a change in final demand for the output of an industry (or landings for commercial fishing industry) contributes to the regional economy. For example, the indirect effects of $0.23 million, due to a $1 million increase in seafood processing output, include increased demand of fish processing sector for raw fish from commercial fishing sector (i.e., catcher vessels owned by residents of the region) and goods and services from other regional economic sectors.

Although not reported in Table 13, the increased demand for fish processing sector will result in increase in imports of raw fish (i.e., raw fish landed by catcher vessels owned by non-residents). The increased imports of raw fish to the borough (i.e., the increased exports of raw fish from the rest of the world (ROW) to the borough) will require the ROW commercial fishing sector to increase its output (harvest of raw fish) to meet the increased exports to the borough. To produce more output, the ROW commercial fishing sector will need to use more of each intermediate input (fuel and other goods and services). Some of these intermediate inputs used for harvesting activity on ROW-owned vessels are purchased from the borough. Conceptually, those intermediate inputs purchased from the borough are exports from the borough to the ROW. The increase in exports of these intermediate inputs from the borough to the ROW will have another round of positive effects on the borough's economy although most of those inputs (goods and services) purchased by ROW-owned vessels from the borough are imported from the ROW. But, this round of effects from the increased exports by the borough is not captured by the Kodiak Island Borough IO model. The reasons are that export is an exogenous variable in the IO model, and that the IO model is a single-region model in which the interregional feedback effects are not addressed. However, the base-year IMPLAN data for exports includes the borough's exports of these inputs to ROW-owned vessels (Personal communication with Doug Olson, IMPLAN).

As was mentioned above, the values of multipliers depend on the relationships between industries. If more reliable data, such as Fish Ticket data, on the purchases of raw fish by the fish processing sector from resident-owned catcher vessels and nonresident-owned catcher vessels is available, the multiplier values reported in Table 13 and those in Tables 14 and 15 below can be improved.

Table 14 presents employment multipliers for the region. The table indicates, for example, that if the landings of raw fish by locally owned vessels increase by $1 million, then about 16 new jobs (full- and part-time jobs) will be created in the commercial fishing industry (direct effects) and about 3 additional jobs (indirect and induced effects) will be created in the economy. In total, about 19 new jobs will be created in the region (total effects). Looking at the processing industry, $1 million

increase in final demand for processing output will result in about 7 new jobs in processing industry (direct effects) and about 5 additional jobs (indirect and induced effects) in the borough. The additional 5 jobs include those local jobs in commercial fishing sector and other sectors, which are created due to increased purchases by the fish processing sector of goods and services from these sectors (indirect effects) and those jobs in the sectors, which are created due to increased household spending (induced effects). There will be a total of about 12 new local jobs created in the borough (total effects).

Table 15 presents labor income multipliers for the borough. The table shows, for example, that if landings of raw fish increase by $1 million (i.e., if the landings of raw fish (ex-vessel revenue) by catcher vessels owned by residents of Kodiak Island Borough increase by $1 million), then the labor income from the commercial fishing industry will increase by about $311,000 (direct effects) and the total labor income in the region will increase by about $402,000 (total effects). The directly generated labor income of $311,000, or about 31.1 % of total ex-vessel value, is paid to resident and nonresident fishermen on the resident-owned catcher vessels. The labor income share of 31.1 % is compared to a crew share of 40 %, which was estimated initially by Fisheries Economic Assessment Model (FEAM) and later used by Northern Economics in their Programmatic Supplemental Environmental Impact Statement (PSEIS; Northern Economics, 2004). Table 15 also shows that if final demand for processing output increases by $1 million, then the labor income from the processing industry will increase by about $212,000 and the total labor income in the region will increase by about $339,000. The direct effect of about $212,000 is about 21.2 % total value of output in fish processing sector. This labor income share of 21.2 % is compared to a labor income share used in PSEIS. PSEIS assumed that processing labor accounts for 20 to 30 percent of total wholesale production value for the various processor classes.

5. Economic Base Analysis

In this section, the contribution of the seafood processing sector to overall regional economic activity is measured by conducting an economic base analysis for 11 selected fishery-dependent areas. According to economic base theory, a region's economic base determines the level of total economic activity of the region. In economic base analysis, the sectors that export a large share of their production are called basic sectors. These sectors bring in the money from outside, which is spent and respent on other sectors (non-basic sectors) within the economy, generating multiplier effects. The seafood processing sector is an important basic sector for fishery-dependent areas in Alaska since much of its output is exported. A preferred method for conducting an economic base analysis is an IO model such as IMPLAN model. Therefore, the IMPLAN IO model with its 1998 data is used for the economic base analysis in this section. As in the multiplier analysis for Kodiak Island Borough above, the two IMPLAN seafood processing sectors (sectors 97 and 98) are aggregated into one sector to conduct the analysis.

Table 16 presents processing employment, total regional employment, and employment that is dependent on processing activity for each of the selected areas. The total processing-dependent employment is the sum of direct, indirect, and induced effects. For example, the total processing-dependent employment in Aleutian East Borough of 1,244.2 jobs is the sum of 1,123.7 jobs (direct effects), 54.8 jobs (indirect effects), and 65.7 jobs (induced effects). Direct effects in this analysis are the jobs that produce exported products in processing sector. These jobs are directly dependent on the exports of processed products. For example, in Kodiak Island Borough, about 98.2% (1,966.5 jobs) out of the total labor in the sector (2,002 jobs) is used to produce processed products for exports. The rest of the labor (35.5 jobs = 2,002 jobs – 1,966.5 jobs) in the processing sector in Kodiak Island Borough produces processed products to satisfy local demand from restaurants, grocery stores, etc. Indirect effects are the jobs in non-processing industries that produce commodities and services used as intermediate inputs in production of exported products in the seafood processing sector. Induced effects are the jobs created in the economy when households spend income earned from both direct and indirect effects.

Table 16 shows that the processing-dependent employment (column (7)) in all the areas is larger than the processing employment (column (1)). For example, processing employment in the Aleutian East Borough (second row in the table) is 1,146 jobs or about 66.3 percent of total regional employment (column (3)). The total processing-dependent employment in the borough is about 1,244.2 jobs (column (7)), which accounts for about 72.0 percent of total regional employment (column (9)). In column (8), employment multipliers for the selected areas are shown. For example, the employment multiplier for the Aleutians East Borough is 1.11. This means that the total regional employment will increase by 1.11 jobs if employment in seafood processing sector increases by one job, which results from an increase in sales of processed products. Table 16 also presents the ratios of total processing-dependent employment to processing employment (column (10)). The region with the highest ratio is the Haines Borough. The ratio for this borough is 1.62. This means that for every job created in seafood processing sector as a result of, say, an increase in landings, additional 0.62 jobs are created in non-processing industries in the borough. Although the processing employment in Aleutians East Borough is relatively large (1,146 jobs), the ratio of processing-dependent to processing employment is relatively small probably due to a large leakage of expenditures and income from the borough. The ratio for the borough is only 1.09, which means that, for every job created in processing industry, only 0.09 additional jobs are created in the rest of the borough economy. The table also shows that, for state of Alaska as a whole, a new job in processing sector results in additional 0.6 jobs in the rest of the state economy. Table 17 presents similar information for processing labor income for each of the selected areas.

The IMPLAN model employed for the economic base analysis and multiplier analysis for the Kodiak Island Borough above is useful, but has some limitations.

First, the model uses a national-level production function for regional industries including seafood industries. This could be a problem for Alaska seafood industries because the production functions of the industries in Alaska could be different from the national average production functions. Second, much of labor employed in commercial fishing industry is excluded in the IMPLAN data. Third, IMPLAN does not have good information on leakages of expenditures and income. For example, there are some discrepancies in information about leakage of labor income between IMPLAN data and published data (e.g., ADOL data). For these reasons, it is necessary to obtain primary or survey data to fix these problems in IMPLAN.

Some of these limitations can be overcome relatively easily by revising the IMPLAN data with information in other studies/reports without collecting primary or survey data. For example, Northern Economics estimated payments to labor on catcher vessels owned by residents of Kodiak Island region as 40 % of ex-vessel values, which are obtained from Commercial Fisheries Entry Commission (CFEC) Fish Tickets data and Alaska state vessel-registration files. Using the Northern Economics' estimate of the labor earnings, the IMPLAN labor earnings data can be revised. On the other hand, it is not an easy task to revise the production function for commercial fishing sector because one needs to collect, via survey, the data on the expenditures of catcher vessels, and revise all the numbers in the IMPLAN production function. Because of these limitations of IMPLAN data, it is possible that the indirect and induced effects and related results presented in Tables 16 and 17 are over or underestimated.

Footnote

1. There are a total of 509 sectors in the 2001 IMPLAN data. Also, in the 2001 IMPLAN data, there are two fishery-related sectors. They are Fishing (IMPLAN sector 16, NAICS code 1141) and Seafood Product Preparation and Packaging (IMPLAN sector 71, NAICS code 3117).

Table 1 Regions and Census Areas in Alaska

Six Large Regions	27 Boroughs and Census Areas
Northern	Nome Census Area
	North Slope Borough
	Northwest Arctic Borough
Interior	Denali Borough
	Fairbanks North Star Borough
	Southeast Fairbanks Census Area
	Yukon-Koyukuk Census Area
Southwest	Aleutians East Borough
	Aleutians West Census Area
	Bethel Census Area
	Bristol Bay Borough
	Dillingham Census Area
	Lake and Peninsula Borough
	Wade Hampton Census Area
Anchorage Matsu	Anchorage Borough
	Matanuska-Susitna Borough
Gulf Coast	Kenai Peninsula Borough
	Kodiak Island Borough
	Valdez-Cordova Census Area
Southeast	
	Haines Borough
	Juneau Borough
	Ketchikan Gateway Borough
	Prince of Wales
	Sitka Borough
	Skagway-Angoon
	Wrangell-Petersburg Census Area
	Yakutat Borough

Source: ADOL

Table 2 Categories of Employment Reported in Different Data Sources

Category\Data Source	IMPLAN	ADOL	BEA/REIS	CENSUS
Wage and salary employment	X	X	X	X
Military – civilian	X	X	X	
Military – uniformed	X		X	X (armed forces)
Self-employment	X		X	X
Other wage and salary employment not covered by UI		X		

Note: "X" indicates the data source in the column reports the employment in the row. Fisherman employment is not counted fully in any of these data sources.

Table 3 Seafood Processing Employment as Percentage of Total Regional Employment for Selected Areas

Region\Data Source	IMPLAN (1998)	ADOL (2000)	Adjusted BEA/ REIS (2000)	Adjusted U.S. CENSUS (2000)	Average
Aleutians East Borough	66.3	65.2	62.0	44.8	59.6
Aleutians West Census Area	38.6	51.8	40.9	31.2	40.6
Bristol Bay Borough	20.7	33.3	24.4	1.5	20.0
Dillingham Census Area	8.6	21.0	A	1.9	10.5
Haines Borough	7.9	5.8	A	2.5	5.4
Ketchikan Gateway Borough	4.9	6.9	5.6	2.7	5.0
Kodiak Island Borough	22.2	29.4	18.7	15.9	21.6
Lake and Peninsula Borough	16.1	28.5	18.0	1.2	16.0
Valdez-Cordova Census Area	8.1	8.7	8.2	3.8	7.2
Wrangell-Petersburg Census Area	7.9	15.9	9.9	5.3	9.8
Yakutat Borough	10.2	19.2	13.7	4.5	11.9
State of Alaska	*2.3*	*3.1*	*2.6*	*2.1*	*2.5*

A: Not shown to avoid disclosure of confidential information.

Table 4 Monthly and Total Annual Processing Employment (number of jobs) for Selected Areas, 2002

REGION\MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Aleutians East Borough	1,217	1,798	1,642	838	780	1,005	1,655	1,905	1,416	920	366	173	13,715
%	8.9	13.1	12.0	6.1	5.7	7.3	12.1	13.9	10.3	6.7	2.7	1.3	100
Aleutians West CA	1,486	3,196	2,859	1,624	895	1,265	2,164	2,249	2,120	1,897	833	582	21,170
%	7.0	15.1	13.5	7.7	4.2	6.0	10.2	10.6	10.0	9.0	3.9	2.7	100
Bristol Bay Borough	7	8	8	441	495	713	977	325	51	42	29	34	3,130
%	0.2	0.3	0.3	14.1	15.8	22.8	31.2	10.4	1.6	1.3	0.9	1.1	100
Dillingham Census Area	283	529	590	455	372	384	1,091	392	347	283	149	48	4,923
%	5.7	10.7	12.0	9.2	7.6	7.8	22.2	8.0	7.0	5.7	3.0	1.0	100
Haines Borough	3	3	3	3	8	14	26	179	222	15	4	4	484
%	0.6	0.6	0.6	0.6	1.7	2.9	5.4	37.0	45.9	3.1	0.8	0.8	100
Ketchikan Gateway Bor.	123	147	137	150	213	372	1,396	1,183	812	571	336	195	5,635
%	2.2	2.6	2.4	2.7	3.8	6.6	24.8	21.0	14.4	10.1	6.0	3.5	100
Kodiak Island Borough	911	1,638	1,659	1,485	1,252	1,308	2,565	2,476	1,823	1,476	1,139	699	18,431
%	4.9	8.9	9.0	8.1	6.8	7.1	13.9	13.4	9.9	8.0	6.2	3.8	100
Lake and Peninsula Bor.	20	21	19	23	53	222	346	278	87	15	13	28	1,125
%	1.8	1.9	1.7	2.0	4.7	19.7	30.8	24.7	7.7	1.3	1.2	2.5	100
Valdez-Cordova CA	41	114	131	216	395	688	1,027	947	571	148	83	74	4,435
%	0.9	2.6	3.0	4.9	8.9	15.5	23.2	21.4	12.9	3.3	1.9	1.7	100
Wrangell-Petersburg CA	138	260	255	326	377	394	715	824	692	373	303	195	4,852
%	2.8	5.4	5.3	6.7	7.8	8.1	14.7	17.0	14.3	7.7	6.2	4.0	100
Yakutat Borough	9	12	28	28	33	45	68	68	80	60	23	19	473
%	1.9	2.5	5.9	5.9	7.0	9.5	14.4	14.4	16.9	12.7	4.9	4.0	100
Undetermined locations	2	2	2	2	3	19	19	20	9	3	2	2	85
%	2.4	2.4	2.4	2.4	3.5	22.4	22.4	23.5	10.6	3.5	2.4	2.4	100
STATE OF ALASKA	5,000	8,643	8,380	6,726	6,075	8,061	14,381	12,818	9,766	6,797	4,149	2,790	93,586
%	5.3	9.2	9.0	7.2	6.5	8.6	15.4	13.7	10.4	7.3	4.4	3.0	100

Source: ADOL (Data Provided by Dan Robinson, 2004)

Table 5 Seafood Processing Labor Income as Percentage of Total Regional Labor Income for Selected Areas

AREA NAME\DATA SOURCE	IMPLAN (1998)	ADOL (2000)	BEA (2000)	AVERAGE
Aleutians East Borough	64.4	67.1	65.3	65.6
Aleutians West Census Area	37.2	46.0	41.7	41.6
Bristol Bay Borough	22.1	A	25.5 (B)	22.1
Dillingham Census Area	7.0	A	A	7.0
Haines Borough	10.7	A	A	10.7
Ketchikan Gateway Borough	4.2	5.4	4.6	4.7
Kodiak Island Borough	18.8	28.7	20.9	22.8
Lake and Peninsula Borough	17.2	35.0	30.6	27.6
Valdez-Cordova Census Area	5.9	5.7	7.8 (B)	5.8
Wrangell-Petersburg CA	9.1	14.9	11.7	11.9
Yakutat Borough	10.9	A	27.8 (B)	10.9
State of Alaska	*1.9*	*2.4*	2.1	2.1

Notes:
A: The percentages can not be estimated because no information is available for labor earnings for Food and Kindred Products sector and the whole manufacturing sector.
B: Since the labor earnings information for Food and Kindred Products is not available but the information on labor earnings in the whole manufacturing sector is available, the percentages are calculated as labor earnings in the whole manufacturing sector divided by total regional labor earnings.

Table 6 Labor Income in Seafood Processing, Food and Kindred Products, and Total Manufacturing Sectors for Selected Areas ($million), 1998

Area Name	(1) Seafood Processing (IMPLAN Sectors 97 and 98)	(2) Food and Kindred Products (IMPLAN Sectors 58-103)	(3) Total Manufacturing (IMPLAN Sectors 58-432)	(1)/(2)	(1)/(3)
Aleutians East Borough	32.7	32.7	32.7	1.00	1.00
Aleutians West CA	56.0	56.1	62.5	1.00	0.90
Bristol Bay Borough	11.1	11.1	11.1	1.00	1.00
Dillingham Census Area	8.3	8.3	11.2	1.00	0.74
Haines Borough	6.2	6.2	6.4	1.00	0.97
Ketchikan Gateway Bor.	16.5	16.5	71.9	1.00	0.23
Kodiak Island Borough	57.1	57.1	63.8	1.00	0.89
Lake and Peninsula Bor.	5.0	5.0	5.0	1.00	1.00
Valdez-Cordova CA	16.1	16.1	21.9	1.00	0.74
Wrangell-Petersburg CA	11.4	11.4	23.4	1.00	0.49
Yakutat Borough	2.3	2.3	6.6	1.00	0.35
State of Alaska	*271.7*	*276.8*	*611.6*	*0.98*	*0.44*

Source: 1998 IMPLAN data
Note: Labor income in this table is employee compensation plus proprietors' income in IMPLAN.

Table 7 Seafood Processing Labor Income for Selected Areas ($million), 1993-2002

Area Name\Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Aleutians East Borough	34.1	A	41.4	41.8	41.8	A	43.1	39.1	A	A
Aleutians West CA	96.9	82.0	83.7 (B)	85.8 (B)	65.7 (B)	67.5	88.5	62.1	62.0 (B)	75.7 (B)
Bristol Bay Borough	14.0	A	14.7	9.6	9.9	10.6	9.2	13.9 (B)	6.3 (B)	10.0 (B)
Dillingham CA	16.3 (B)	14.1 (B)	A	A	A	A	A	A	14.4	12.7
Haines Borough	7.0 (B)	7.6 (B)	7.1 (B)	7.9 (B)	5.9 (B)	A	A	A	A	A
Ketchikan Gateway Bor.	80.5 (B)	78.3 (B)	13.3	69.1 (B)	65.9 (B)	13.7	16.8	16.4	17.0	17.7
Kodiak Island Borough	59.3	56.3	60.3	59.0	60.8	60.6	61.7	67.5	64.6	58.6
Lake and Peninsula Bor.	6.9	6.1	6.7	5.7	5.7	5.9	7.8	8.3	A	2.8
Valdez-Cordova CA	28.1 (B)	27.6 (B)	14.5	13.5	15.8	14.6	20.9 (B)	20.5 (B)	11.5	11.6
Wrangell-Petersburg CA	38.3 (B)	36.4 (B)	24.9 (B)	21.8 (B)	11.9	12.5	16.4	14.9	14.8	13.9
Yakutat Borough	2.5 (B)	6.2 (B)	8.1 (B)	7.9 (B)	11.9 (B)	2.4	3.3 (B)	4.4 (B)	A	A
State of Alaska	352.6	340.6	348.8	317.7	301.9	303.2	323.9	310.2	301.5	291.5

Source: BEA

Notes:

A: The labor earnings can not be estimated because no information is available for labor earnings for Food and Kindred Products sector and the whole manufacturing sector.

B: Since the labor earnings information for Food and Kindred Products is not available, the labor earnings in the whole manufacturing sector are given.

Table 8 Seafood Processing Labor Income as Percentage of Total Regional Labor Income for Selected Areas, 1993-2002

Area Name\Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Aleutians East Borough	67.5	A	71.3	71.8	69.5	A	69.0	65.3	A	A
Aleutians West Census Area	30.6	31.8	36.4 (B)	41.2 (B)	42.9 (B)	44.4	50.0	41.7	41.8 (B)	43.9 (B)
Bristol Bay Borough	23.2	A	27.8	19.5	19.3	21.5	19.1	25.5 (B)	11.8 (B)	18.3 (B)
Dillingham Census Area	19.4 (B)	16.6 (B)	A	A	A	A	A	A	13.7	11.8
Haines Borough	18.2 (B)	19.6 (B)	18.1 (B)	20.1 (B)	14.6 (B)	A	A	A	A	A
Ketchikan Gateway Borough	21.5 (B)	21.0 (B)	3.5	18.0 (B)	18.1 (B)	3.9	4.9	4.6	4.6	4.8
Kodiak Island Borough	20.9	19.8	20.4	20.1	20.4	20.8	20.3	20.9	19.4	17.2
Lake and Peninsula Borough	30.5	28.3	29.7	26.4	26.6	27.0	32.1	30.6	A	12.2
Valdez-Cordova Census Area	11.3 (B)	11.6 (B)	6.1	5.7	6.4	5.6	8.5 (B)	7.8 (B)	4.4	4.2
Wrangell-Petersburg Census Area	28.2 (B)	26.7 (B)	20.1 (B)	18.5 (B)	10.0	10.7	12.8	11.7	11.0	10.4
Yakutat Borough	22.8 (B)	40.4 (B)	43.5 (B)	41.3 (B)	50.8 (B)	13.7	22.0 (B)	27.8 (B)	A	A
State of Alaska	2.8	2.6	2.7	2.4	2.3	2.2	2.3	2.1	1.9	1.7

Source: BEA

A: The percentages can not be estimated because no information is available for labor earnings for Food and Kindred Products sector and the whole manufacturing sector.

B: Since the labor earnings information for Food and Kindred Products is not available, the percentages are calculated as labor earnings in the whole manufacturing sector divided by total regional labor earnings.

Table 9 Seafood Processing Labor Income for Southwest, Gulf Coast, and Southeast Regions ($million), 1990-2002

Name of Region	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Southwest	90.1	107.6	123.9	134.6	119.4	123.3	115.7	106.1	115.0	114.6	107.8	111.2	110.4
Gulf Coast	79.5	80.2	69.5	78.0	78.7	83.1	81.1	80.6	75.6	78.5	71.8	69.1	61.3
Southeast	28.2	34.7	29.9	39.3	43.7	42.6	38.6	37.0	35.3	43.1	36.0	36.1	34.7

Source: Data used in this table was generated by Dan Robinson at ADOL. Data for years earlier than 2000 is based on Standard Industrial Classification (SIC) industries 2091, 2092, and 5146. Data for 2000 and later years are based on North American Industry Classification System (NAICS) industry 3117. The SIC-based numbers in this table include some processing wholesalers (SIC 5146) while the NAICS-based numbers do not.

Table 10 Seafood Processing Labor Income as Percentage of Total Personal Income for Selected Areas, 1993-2002

Area Name\Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Aleutians East Borough	71.0	A	77.7	77.5	74.1	A	71.0	64.1	A	A
Aleutians West Census Area	41.5	43.9	51.9 (B)	58.9 (B)	57.7 (B)	59.5	70.2	54.2	51.7 (B)	57.4 (B)
Bristol Bay Borough	28.5	A	34.4	23.9	23.7	26.9	23.2	32.6 (B)	14.3 (B)	22.2 (B)
Dillingham Census Area	16.9 (B)	14.4 (B)	A	A	A	A	A	A	10.9	9.3
Haines Borough	11.9 (B)	12.4 (B)	11.3 (B)	12.3 (B)	8.9 (B)	A	A	A	A	A
Ketchikan Gateway Borough	18.4 (B)	17.5 (B)	2.9	14.8 (B)	14.3 (B)	3.0	3.7	3.4	3.4	3.5
Kodiak Island Borough	19.2	17.9	18.6	18.0	18.1	18.0	17.8	18.1	16.5	14.7
Lake and Peninsula Borough	24.2	21.5	22.5	19.3	19.1	19.0	22.6	21.8	A	8.0
Valdez-Cordova Census Area	10.3 (B)	10.1 (B)	5.4	5.0	5.6	5.0	7.3 (B)	6.7 (B)	3.7	3.6
Wrangell-Petersburg Census Area	22.2 (B)	20.8 (B)	15.1 (B)	13.5 (B)	7.2	7.4	9.1	8.0	7.5	7.0
Yakutat Borough	14.9 (B)	31.7 (B)	39.5 (B)	36.9 (B)	51.9 (B)	10.7	15.8 (B)	18.7 (B)	A	A
State of Alaska	2.4	2.3	2.3	2.0	1.8	1.8	1.8	1.7	1.5	1.4

Source: BEA

A: The percentages can not be estimated because no information is available for labor earnings for Food and Kindred Products sector and the whole manufacturing sector.

B: Since the labor earnings information for Food and Kindred Products is not available, the percentages are calculated as labor earnings in the whole manufacturing sector divided by total regional personal income.

Note: The total personal income used to calculate the percentages in the table is derived as earnings by place of work (i.e., total regional labor earnings) minus personal contribution for social insurance plus adjustment for residence plus transfer payments and investment income (dividends, interest, and rent).

Table 11 Transfer Payments for Selected Areas ($million), 1993-2002

Area Name\Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Aleutians East Borough	4.5	5.1	5.9	6.8	7.8	8.7	10.5	11.4	11.2	11.3
Aleutians West Census Area	13.4	10.5	10.0	11.4	12.1	13.8	15.5	17.3	18.0	17.4
Bristol Bay Borough	3.9	3.8	3.9	4.3	4.7	5.2	5.8	6.2	6.8	7.6
Dillingham Census Area	15.7	14.9	15.5	16.7	17.9	19.4	21.9	24.8	26.2	27.5
Haines Borough	9.1	9.0	9.1	9.9	10.8	11.7	12.9	14.0	14.7	15.1
Ketchikan Gateway Borough	47.8	50.4	52.4	56.4	59.6	62.9	68.4	75.2	78.5	81.2
Kodiak Island Borough	35.8	35.9	37.3	39.4	41.9	45.2	49.6	57.0	57.8	58.1
Lake and Peninsula Borough	5.6	6.0	6.2	6.6	7.0	7.6	8.5	9.4	9.4	9.6
Valdez-Cordova Census Area	30.0	30.4	29.3	31.5	33.8	36.6	40.7	45.6	46.8	47.4
Wrangell-Petersburg Census Area	23.7	24.9	25.9	27.4	28.9	31.2	34.3	38.1	39.4	40.6
Yakutat Borough	2.6	2.8	2.9	3.2	3.6	3.8	4.3	4.8	4.7	5.0
State of Alaska	1,814.4	1,854.7	1,931.9	2,079.4	2,252.2	2,451.3	2,730.3	3,089.7	3,233.3	3,364.1

Source: BEA

Table 12 Sector Aggregation for Multiplier Analysis for Kodiak Island Borough

IMPLAN SECTORS	NAMES OF AGGREGATED SECTORS
Sectors 1-24 and 26-27	Agriculture
Sector 25	Commercial Fishing
Sectors 28-47	Mining
Sectors 48-57	Construction
Sectors 97 and 98	Fish Processing
Sectors 58-89, 90-96, and 99-432	Other Manufacturing
Sectors 433-440	Transportation
Sectors 441-442	Communications
Sectors 443-446	Public Utilities
Sector 447	Wholesale Trade
Sectors 448-455	Retail Trade
Sectors 456-462	FIRE
Sector 519	Federal Gov't – military
Sector 520	Federal Gov't – non-military
Sectors 522-523	State and Local Gov't
Sectors 463-518, 521, 524-528	Services

Note: FIRE is Finance, Insurance, and Real Estate

Table 13 Output Multipliers for Kodiak Island Borough

Industry	Direct effects	Indirect effects	Induced effects	Total effects	Multiplier
Agriculture	1	0.17	0.30	1.48	1.48
Commercial Fishing	1	0.07	0.19	1.25	1.25
Mining	1	0.52	0.20	1.72	1.72
Construction	1	0.28	0.26	1.55	1.55
Other Manufacturing	1	0.32	0.16	1.47	1.47
Fish Processing	1	0.23	0.14	1.37	1.37
Transportation	1	0.47	0.23	1.70	1.70
Communication	1	0.37	0.18	1.54	1.54
Public Utilities	1	0.14	0.11	1.25	1.25
Wholesale Trade	1	0.26	0.22	1.48	1.48
Retail Trade	1	0.16	0.26	1.42	1.42
FIRE	1	0.22	0.07	1.29	1.29
Services	1	0.34	0.30	1.64	1.64
Federal - military	1	0.00	0.26	1.26	1.26
Federal -nonmilitary	1	0.00	0.39	1.39	1.39
State and Local	1	0.00	0.39	1.39	1.39

Source: 1998 IMPLAN data
Note: The direct, indirect, induced, and total effects are in $million.

Table 14 Employment Multipliers for Kodiak Island Borough

Industry	Direct effects	Indirect effects	Induced effects	Total effects	Multiplier
Agriculture	70.4	2.3	4.0	76.6	1.09
Commercial Fishing	15.6	0.7	2.4	18.7	1.20
Mining	7.1	4.5	2.6	14.2	2.00
Construction	7.7	3.5	3.5	14.6	1.90
Other Manufacturing	5.5	3.3	2.1	10.9	1.98
Fish Processing	7.4	3.1	1.8	12.4	1.66
Transportation	11.8	5.8	3.0	20.6	1.74
Communication	5.6	4.3	2.3	12.1	2.18
Public Utilities	2.8	1.2	1.4	5.5	1.93
Wholesale Trade	9.3	3.4	2.9	15.6	1.67
Retail Trade	23.8	1.8	3.4	29.0	1.22
FIRE	4.3	2.1	0.9	7.3	1.70
Services	17.7	4.2	4.0	25.8	1.46
Federal - military	9.6	0.0	3.4	13.0	1.36
Federal -nonmilitary	19.1	0.0	5.1	24.2	1.27
State and Local	21.0	0.0	5.2	26.2	1.25

Source: 1998 IMPLAN data
Note: The direct, indirect, and induced effects are defined per million dollars of output. Employment is in number of full- and part-time jobs. In addition to wage and salary employment, IMPLAN employment reported in this table includes self-employment and military employment. Many of the crew members/fishermen in the commercial fishing sector are excluded from the IMPLAN data.

Table 15 Labor Income Multipliers for the Kodiak Island Borough

Industry	Direct effects	Indirect effects	Induced effects	Total effects	Multiplier
Agriculture	495,893	52,571	106,818	655,282	1.32
Commercial Fishing	311,126	25,888	64,930	401,944	1.29
Mining	254,598	180,984	70,248	505,829	1.99
Construction	452,460	102,129	92,516	647,105	1.43
Other Manufacturing	231,661	103,482	55,456	390,598	1.69
Fish Processing	212,411	78,588	47,559	338,558	1.59
Transportation	322,629	169,085	81,305	573,020	1.78
Communication	239,386	137,130	61,920	438,436	1.83
Public Utilities	189,914	45,362	38,556	273,832	1.44
Wholesale Trade	386,369	100,516	78,412	565,297	1.46
Retail Trade	503,454	53,941	91,848	649,243	1.29
FIRE	84,175	64,390	24,742	173,307	2.06
Services	505,102	126,355	106,857	738,314	1.46
Federal - military	578,644	0	91,331	669,976	1.16
Federal -nonmilitary	859,337	0	135,635	994,972	1.16
State and Local	877,336	0	138,476	1,015,812	1.16

Source: 1998 IMPLAN data
Note: Labor income is in dollars. The direct, indirect, and induced effects are defined per million dollars of output.

Table 16 Processing Sector Employment, Total Regional Employment, and Processing-Dependent Employment, by Area (1998)

AREA NAME	(1) Proc. sector employment	(2) Total regional employment	(3) = (1)/(2)	Processing-dependent employment						
				(4) Direct	(5) Indirect	(6) Induced	(7) Total =(4)+(5)+(6)	(8) Mult. =(7)/(4)	(9) = (7)/(2)	(10) = (7)/(1)
Aleutians East Bor.	1,146	1,729	66.3 %	1,123.7	54.8	65.7	1,244.2	1.11	72.0 %	1.09
Aleutians West CA	1,598	4,144	38.6 %	1,573.3	271.1	96.5	1,940.9	1.23	46.8 %	1.21
Bristol Bay Bor.	353	1,706	20.7 %	350	98.4	29	477.4	1.36	28.0 %	1.35
Dillingham CA	415	4,828	8.6 %	409.1	159.3	29.5	597.9	1.46	12.4 %	1.44
Haines Borough	158	2,005	7.9 %	156.2	73.9	25.1	255.2	1.63	12.7 %	1.62
Ketchikan Gateway Bor.	520	10,521	4.9 %	514	41.2	70.7	625.9	1.22	6.0 %	1.20
Kodiak Island Bor.	2,002	9,037	22.2 %	1,966.5	516.4	253.3	2,736.2	1.39	30.3 %	1.37
Lake and Peninsula Bor.	176	1,093	16.1 %	173.5	16.1	7.2	196.8	1.13	18.0 %	1.12
Valdez-Cordova CA	566	7,023	8.1 %	557.2	109.3	65.3	731.8	1.31	10.4 %	1.29
Wrangell-Petersburg CA	349	4,438	7.9 %	343.7	117.5	60.6	521.8	1.52	11.8 %	1.50
Yakutat Borough	76	747	10.2 %	75.4	3.2	6.4	85	1.13	11.4 %	1.12
State of Alaska	*9,073*	*392,192*	*2.3 %*	*8,736.7*	*3,577.6*	*2,170.8*	*14,485.1*	*1.66*	*3.7 %*	*1.60*

Source: 1998 IMPLAN data

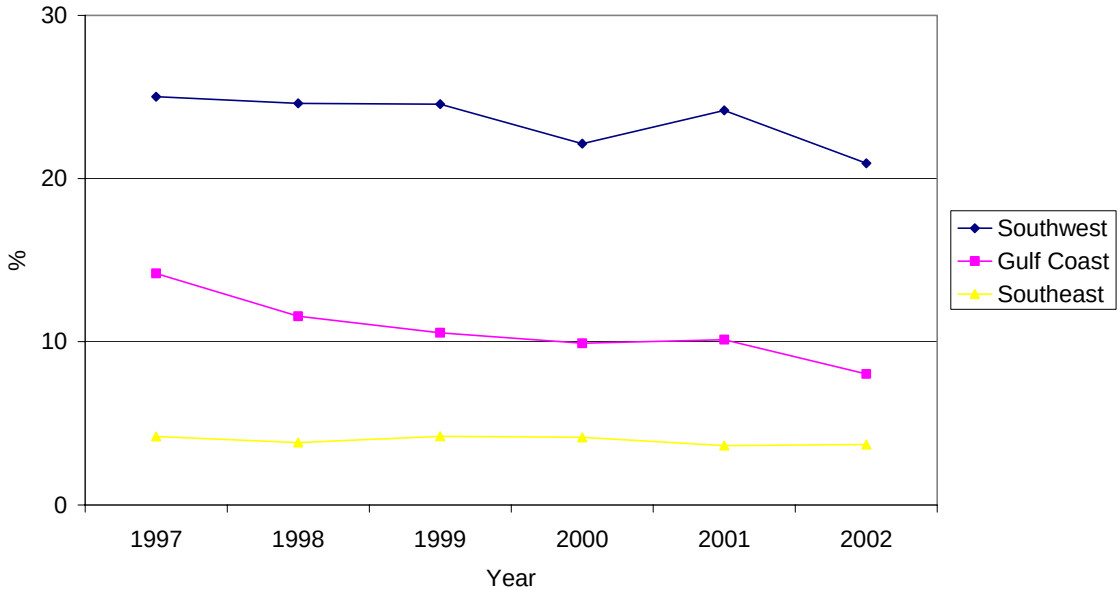
Note: Employment is in number of full- and part-time jobs. In addition to wage and salary employment, IMPLAN employment reported in this table includes self-employment and military employment. Many of the crew members/fishermen in the commercial fishing sector are excluded from the IMPLAN data.

Table 17 Processing Sector Labor Income, Total Regional Labor Income, and Processing-Dependent Labor Income by Area (1998)

AREA NAME	(1) Proc. sector labor income	(2) Total reg. labor income	(3) = (1)/(2)	Processing-dependent labor income						
				(4) Direct	(5) Indirect	(6) Induced	(7)Total = (4)+(5)+(6)	(8) Mult.= (7)/(4)	(9) = (7)/(2)	(10) = (7)/(1)
Aleutians East Bor.	32.7	50.7	64.4 %	32.1	1.7	1.7	35.4	1.10	69.8 %	1.08
Aleutians West CA	56.0	150.7	37.2 %	55.2	8.3	2.8	66.3	1.20	44.0 %	1.18
Bristol Bay Bor.	11.1	50.2	22.1 %	11.0	2.0	0.7	13.7	1.25	27.3 %	1.24
Dillingham CA	8.3	119.6	7.0 %	8.2	3.1	0.7	12.0	1.46	10.1 %	1.45
Haines Borough	6.2	57.7	10.7 %	6.1	1.5	0.6	8.2	1.34	14.1 %	1.32
Ketchikan Gateway Bor.	16.5	391.5	4.2 %	16.3	1.3	1.9	19.5	1.20	5.0 %	1.19
Kodiak Island Bor.	57.1	303.6	18.8 %	56.1	12.0	6.4	74.5	1.33	24.5 %	1.30
Lake and Peninsula Bor.	5.0	29.0	17.2 %	4.9	0.4	0.1	5.4	1.10	18.8 %	1.09
Valdez-Cordova CA	16.1	273.6	5.9 %	15.8	3.3	1.5	20.7	1.31	7.6 %	1.29
Wrangell-Petersburg CA	11.4	125.3	9.1 %	11.2	3.2	1.3	15.7	1.40	12.5 %	1.38
Yakutat Borough	2.3	21.0	10.9 %	2.3	0.1	0.1	2.4	1.04	11.6 %	1.07
State of Alaska	*271.7*	*14,187.7*	*1.9 %*	*261.7*	*93.0*	*60.4*	*415.1*	1.59	*2.9 %*	*1.53*

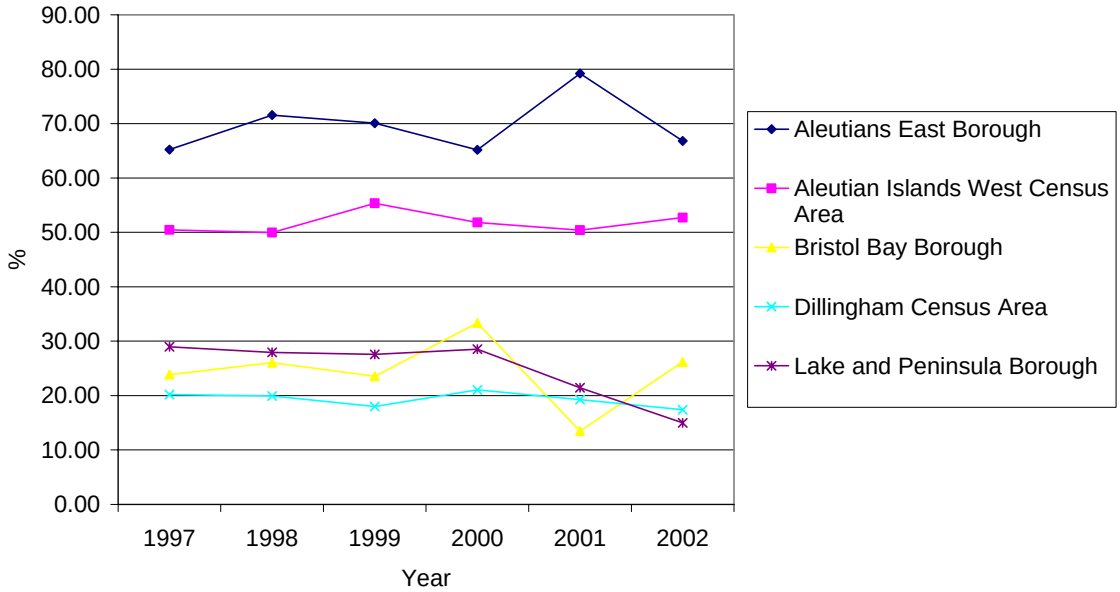
Source: 1998 IMPLAN data
Note: Labor income is in million dollars. Crew members/fishermen income is included from the IMPLAN data.

Figure 1 Seafood Processing Employemnt as Percentage of Total Regional Employment for Southwest, Gulf Coast, and Southeast Regions, 1997-2002



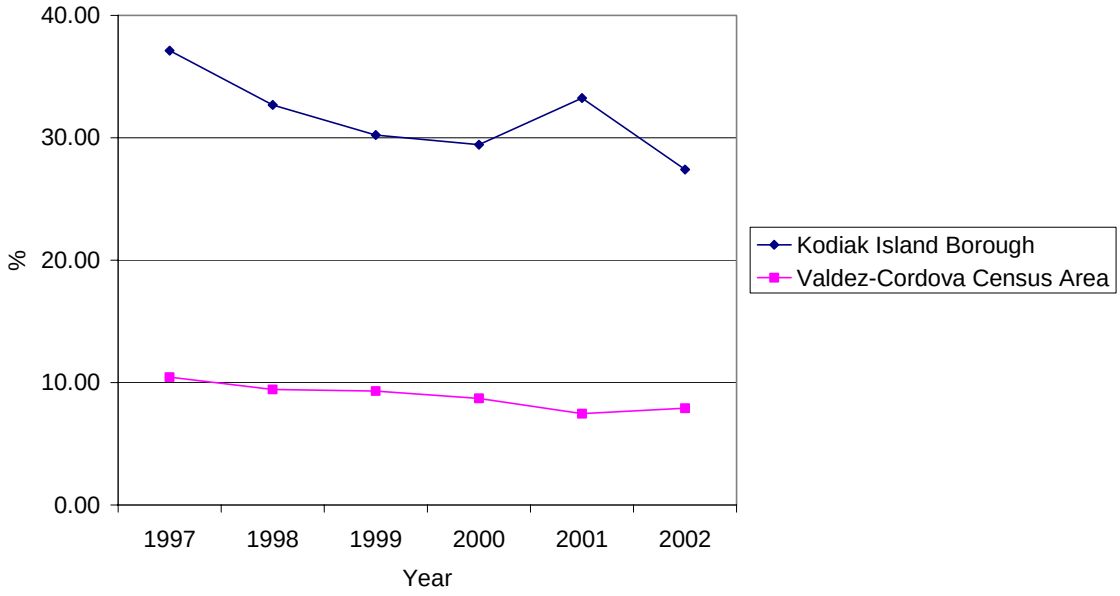
Source: ADOL data (Data Provided by Dan Robinson)

Figure 2 Seafood Processing Employment as Percentage of Total Regional Employment for Selected Areas in Southwest Region, 1997-2002



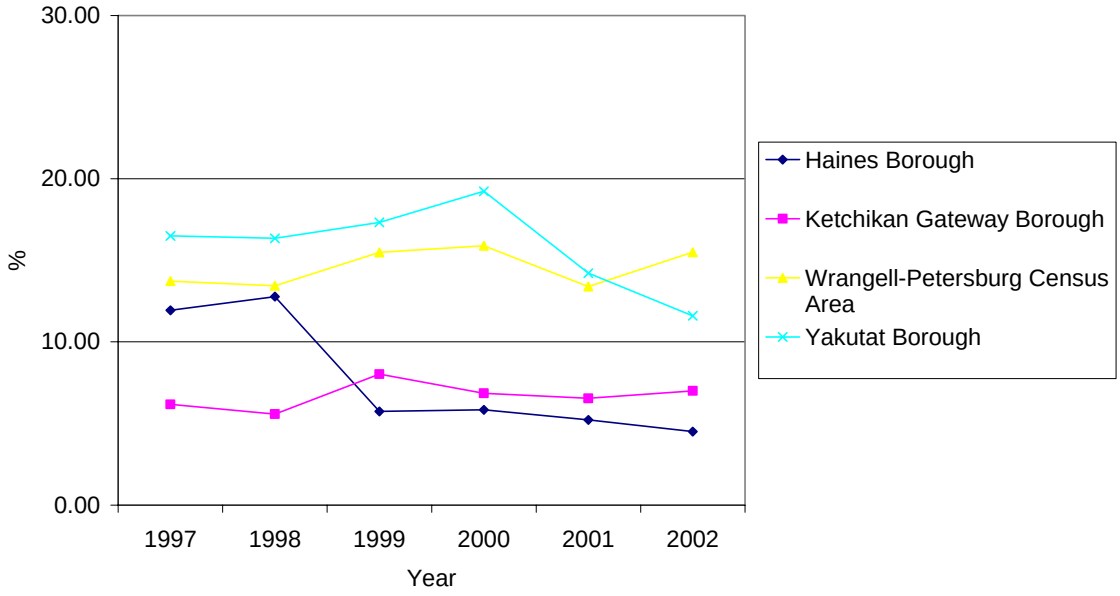
Source: ADOL data (Data Provided by Dan Robinson)

Figure 3 Seafood Processing Employment as Percentage of Total Regional Employment for Selected Areas in Gulf Coast Region, 1997-2002



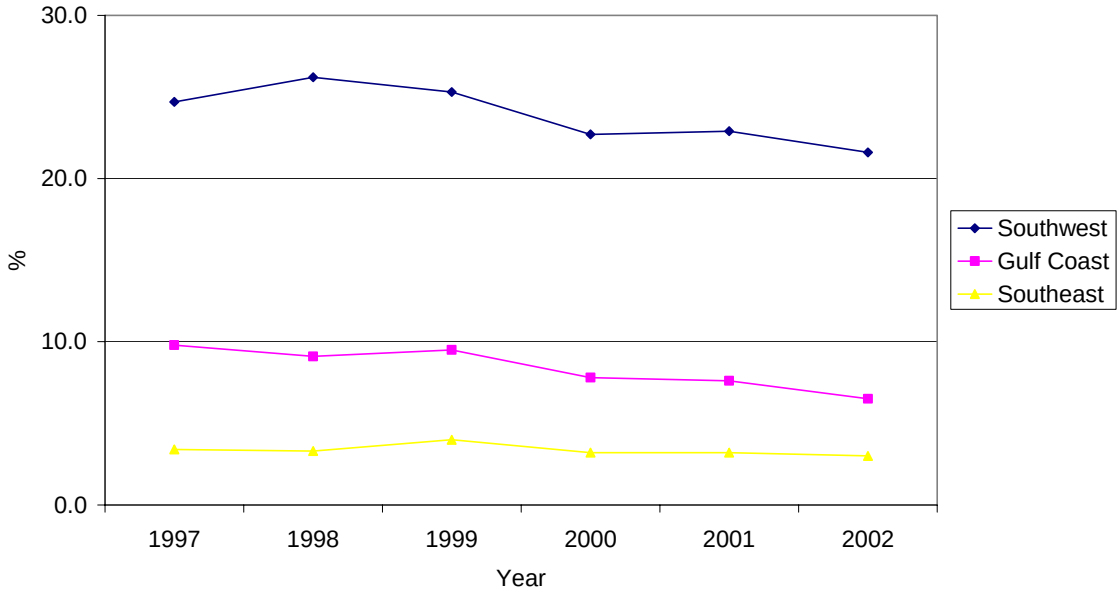
Source: ADOL data (Data Provided by Dan Robinson)

Figure 4 Seafood Processing Employment as Percentage of Total Regional Employment for Selected Areas in Southeast Region, 1997-2002



Source: ADOL data (Data Provided by Dan Robinson)

Figure 5 Seafood Processing Labor Income as a Percentage of Total Regional Labor Income for Southwest, GulfCoast, and Southeast Regions, 1997-2002



Source: ADOL data and data provided by Dan Robinson at ADOL