Report to the U.S. Congress and the Secretary of Commerce

Impacts of the American Fisheries Act

Prepared by the Staff of the North Pacific Fishery Management Council
Award Number NA96FC0339

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Executive Summary

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Executive Summary

The American Fisheries Act (AFA or the Act) was signed into law in October of 1998. The purpose of the AFA was to tighten U.S. ownership standards that had been exploited under the Anti-reflagging Act, and to provide the BSAI pollock fleet the opportunity to conduct their fishery in a more rational manner while protecting non-AFA participants in the other fisheries.

Congress anticipated that passage of the Act would result in substantial changes to the businesses and communities that rely on fishing, as well as the natural resources that support those fisheries. To provide a better understanding of the impacts resulting from the Act, Congress requested that the Council develop a report focused on specific changes brought about by the AFA. The congressional request was embedded within the language of the AFA. Section 213(d) of the AFA states that:

> "*...the North Pacific Council shall submit a report to the Secretary and to Congress on the implementation and effects of this Act, including the effects on fishery conservation and management, on bycatch levels, on fishing communities, on business and employment practices of participants in any fishery cooperatives, on the western Alaska community development quota program, on any fisheries outside of the authority of the North Pacific Council, and such other matters as the North Pacific Council deems appropriate.*"

Preliminary information suggests that the AFA has been largely successful in achieving its goals. Members of the BSAI pollock fishing community have stated that the AFA has allowed them to improve their fishing practices and operate their businesses in a more rational manner. Reduced bycatch, higher utilization rates, increased economic returns, and improved safety are among the direct benefits of AFA. They have also stated that the AFA has helped to mitigate the negative impacts of Steller sea lion (SSL) management measures as well as comply with the protection measures that were implemented. The flexibility provided by cooperatives, and by individual vessel allocations of pollock and other species has allowed the AFA fleet the ability to spread their effort in time and space to accommodate SSL conservation measures. They have also indicated that members of the pollock industry have never worked more closely together to make to fishery operate in an efficient manner. Finally the cooperative management structure has shifted more of the monitoring and enforcement burden to the cooperatives and their members, which has allowed the fishery to be managed more precisely.

Negative impacts of the AFA have also been reported. People that did not qualify to participate in the BSAI pollock industry have testified that they have been negatively impacted through the loss of access to the pollock fishery after having recent history in the fishery and having made substantial investments to retrofit their vessels to fish pollock. These vessel owners feel that the catch history of their vessels are now being fished by the remaining AFA catcher/processors and they received no compensation as did the nine vessels removed from the fishery. The owners of these vessels feel that the criterion used to determine qualification in section 208(e)(21) is not representative of the H&G catcher/processor's history in the fishery. When considering this problem at its February 2002 meeting, the Council concluded the following:

> *"[the Council] does not have the authority to restore access to the directed pollock fishery for non-AFA pollock catcher/processors with recent pollock history. However, the Council may consider other ways to allow maximum utilization of the non-AFA catcher/processors pollock history."*

An industry proposal regarding this issue is expected to be submitted for Council consideration later this year. Additional discussion of this issue is contained on page vi of this summary and in Sections 1.2 and 2.1.2.2 of the full report.

Spillover and safety impacts from pollock vessels fishing cod earlier in the year have been reported by at least three BSAI cod fishermen. Finally, some members of the fishing industry are concerned that the AFA has increased the rate at which other fisheries are moving towards "rationalization". Those people feel that other fisheries might not benefit as much from AFA style rationalization as the pollock fishery. They also feel that the lack of flexibility associated with locking people into specific fisheries will be detrimental to the fleet as the biomass of individual fish stocks increase and decrease over time.

It is not possible to determine the overall effectiveness of increasing the U.S. ownership requirements to 75 percent. Changing the U.S. ownership requirements has allowed two CDQ groups to buy into the American Seafoods Company. This is a positive result if more profits flow into the hands of U.S. citizens. On the other hand, 12 companies are appealing complying with the U.S. ownership requirements on the basis of treaties their country has with the U.S. The Maritime Administration was asked to consider the appeals of 23 vessels (one additional vessel is less than 100 feet and falls under the U.S. Coast Guards jurisdiction). The five vessels that have been ruled on to date have won the right to continue fishing without 75 percent U.S. ownership. If the ownership of those vessels changes in the future they will need to be sold to companies that meet the U.S. ownership requirements. Therefore, until all of those cases are settled, it is not possible to determine the overall effectiveness of that section of the AFA. However, given the limited number of vessel owners that have applied for exemptions relative to the total number of fishing vessels in the U.S., the program will likely be considered a success in the coming years.

Congress had requested that the report be completed by October 1, 2000. However, because the inshore and mothership sectors did not begin operating under the cooperative system until January of 2000, the report was delayed so that information on the first full year of fishing could be presented.

Brief History of Major Council Actions Since the passage of the AFA in October 1998, NMFS and the Council have undertaken an extensive public process to develop the management program proposed by the AFA (Amendments 61/61/13/8). Amendments 61/61/13/8 were developed and revised during the course of eleven Council meetings over a two year period and have been the subject of numerous additional public meetings held by the Council and NMFS to address specific aspects of the AFA. While the permanent management program proposed under Amendments 61/61/13/8 was under analysis and development by the Council and NMFS, the statutory deadlines in the AFA were met on an interim basis through several emergency interim rules.

At its December, 1998, meeting in Anchorage, the Council approved two emergency rules to implement required provisions of the AFA for the 1999 fishing year. The first emergency interim rule required two observers on all AFA-listed catcher/processors and established procedures for making inseason sideboard closures (64 FR 3435, January 22, 1999; extended at 64 FR 33425, June 23, 1999). The second emergency interim rule made several technical changes to the CDQ program regulations to accommodate the new requirements of the AFA (64 FR 3887, January 26, 1999; extended at 64 FR 34743, June 29, 1999).

At its June, 1999, meeting in Kodiak the Council reviewed Amendments 61/61/13/8 and after extensive public testimony, approved a suite of AFA-related recommendations including restrictions on the formation and operation of cooperatives, harvesting sideboards for catcher/processors and catcher vessels, and catch weighing and monitoring requirements. However, the Council was unable to reach a decision on two AFA-related issues; groundfish processing sideboards and excessive processing share caps. To address these issues, the Council established an industry committee to further examine alternatives and work with state and Federal managers to resolve implementation issues with the intent that the Council would review the committee's recommendations in October 1999.

At its December, 1999, meeting in Anchorage, the Council approved two emergency interim rules to implement required provisions of the AFA for the 2000 fishing year. These measures were necessary to meet certain statutory deadlines in the AFA while the comprehensive suite of permanent management measures under Amendments 61/61/13/8 continued to undergo development, revision, and analysis by the Council and NMFS. The first emergency interim rule set out permit requirements for AFA vessels, processors, and cooperatives (65 FR 380, January 5, 2000; extended at 65 FR 39107, June 23, 2000). The second emergency interim emergency rule established sector allocations, cooperative regulations, sideboards, and catch monitoring requirements for the AFA fleets (65 FR 4520, January 28, 2000; extended at 65 FR 39107, June 23, 2000).

At its June, 2000, meeting in Portland, the Council reviewed its analysis of proposed structural changes to the inshore cooperative program and recommended two changes related to retirement of vessels and allocation formulas that would supersede the measures set out in the AFA.

At its October 2000 meeting in Sitka, Alaska, the Council considered the issues of BSAI pollock excessive processing share limits and groundfish processing sideboard limits. The Council adopted a 30 percent excessive processing share limit for BSAI pollock that would be applied using the same 10 percent entity rules set out in the AFA to define AFA entities for the purpose of the 17.5 percent excessive harvesting share limit contained in the AFA.

The Council approved an FMP amendment at its June 2001 meeting that would allow catcher vessels that are members of inshore cooperatives to lease their allocation to other members of the inshore cooperatives that are not a part of their cooperative. Both the catcher vessel's cooperative and the processor associated with that cooperative would need to give their permission before the lease could take place. The Council also received a report from industry on efforts to reduce salmon bycatch. There proposal includes industry imposed penalties for individuals that exceed bycatch standards.

As might be conjectured from the meeting summaries above, implementing the AFA has consumed much of the Council's meeting time over the past two years. In total, developing documents and disseminating information has also consumed over 30 percent of the Council's staff time from November 1998 through October 2000. NMFS has also allocated substantial amounts of staff time to implementing the provisions outlined in the Act and related amendments approved by the Council and SOC. Even with all of the effort that has been expended ensuring that the AFA is successful, many of the impacts of the program are only now being realized. The catcher/processor sector of the pollock fishery has been operating under a cooperative system since the beginning of 1999. The mothership and inshore sectors have only been operating under a cooperative system since January 2000. Therefore, for two of the three industry sectors we have just slightly more than one year of experience on which to draw conclusions regarding impacts of the AFA.

Conservation Issues One of the goals of the AFA was to change the structure of the BSAI pollock fisheries to allow for improved fishing practices, which would lead to greater conservation of the North Pacific's fishery resources. Less than optimal fishing practices often result from too much fishing effort on the grounds, resulting in a faster fishing pace. Fishing faster often increases bycatch or reduces utilization rates of the fish that are processed. Slowing down the rate pollock is harvested and processed was one of the results of the AFA, especially during the non-roe seasons. Initial information indicates slower fishing has resulted in better fishing practices, including lower bycatch and higher utilization rates. However, other changes have occurred in the pollock fishery during this same time period, primarily as a result of Stellar sea lion regulations, making it difficult to separate AFA impacts (in terms of bycatch and other measures of conservation of the resource) from those caused by other management measures which were implemented at the same time. Nevertheless, it is clear that the nature of fishing under cooperatives created by the AFA has allowed the pollock fisheries to spread their catch spatially and temporally, consistent with Steller Sea Lion protection measures.

Fishing Practices The AFA has created opportunities for the fleet to spread the BSAI pollock harvest out over both time and space without being concerned over lose of harvest share. Greater flexibility in their fishing operations by eliminating the need to race to harvest BSAI pollock and the associated rush to process the raw fish. However, without additional regulations to those included in the AFA, the fleet would not have incentives to fish further from their processor or spread out the times of year when pollock are harvested beyond those that are economically efficient. From a processor's view point it would make little sense to slow the harvest of pollock to levels where their plants could not operate in an efficient and profitable manner; from a vessel's view point it would not make sense to harvest only partial loads or increase the time between deliveries for vessels. Variable operating costs increase as the season is lengthened. For example, it may cost vessel owners an additional month of insurance premiums and increase food costs to keep the crew on board for longer times. Increased waiting times would like make the crew unhappy because they would realize they could be making the same amount of money in less time. What does make sense is for vessel and processor owners to use less equipment more efficiently to harvest and process their BSAI pollock allocation. The AFA has provided the tools and incentives to remove the least efficient equipment from the fishery, which tends to reduce costs as well as overall harvesting and processing capacity.

Leasing BSAI pollock harvest rights enables less efficient operations to contract with more efficient ones to harvest their pollock allotment. The overall amount of quota leasing is expected to increase in the future from the levels reported in 2000, especially in the inshore sector[1]. Allowing inshore vessels to lease quota to vessels that are members of other inshore cooperatives and basing cooperative qualification on the last year fished, as opposed to the previous fishing year, should provide greater flexibility to members of that sector to retire vessels and result in more leasing.

Overall, the AFA has provided the tools and incentives for the BSAI pollock fleet to improve their fishing practices by ending the race for pollock. This has lead to improvements in fishing practices. However, the AFA creates few incentives for fishermen to modify their behavior when it results in lower profits being derived from harvesting a set quota.

Safety The AFA pollock fleet has indicated that the fishery is much safer now that it is operating under a cooperative system. Vessel owners and skippers no longer feel compelled to fish during bad weather. They know that under the AFA cooperative style of management their allotment of pollock will be waiting for them when the weather improves. Though no actual data exists regarding improvements in safety, members of the pollock industry have noted it during public testimony on

[1]Recall that the seven catcher vessels in the catcher/processor sector leased all their allotment in 2000, and six catcher/processors elected not to participate. In the mothership sector some consolidation may occur, but it is not expected to be as great as in the inshore sector.

numerous occasions. The CDQ communities have also noted that the safer working conditions made it is easier to recruit Western Alaska residents to work onboard the at-sea vessels. This has helped to provide acceptable jobs for the residents of communities with limited employment opportunities.

Cooperation Within the Fleet Participants in the BSAI pollock fishery stated that they have never worked more closely together, and with NMFS, as they are currently doing under the cooperative management system. Cooperatives and inter-cooperative agreements require that members of industry work together to solve problems as they arise. They also must police each other to ensure that the bylaws in the cooperative and inter-cooperative agreements are adhered to by all parties. These mechanisms developed by industry to manage their fishery have worked very well. According to persons intimately involved with the program they have worked better and been more effective than was anticipated.

Utilization of the Pollock Harvested Higher utilization rates have resulted from fishermen and processors being guaranteed a specific percentage of the BSAI pollock fishery. Since the approximate amount of pollock going into each processing plant is known at the beginning of the year, the only way to increase production is to better utilize the fish being delivered. Utilization rates have increased because the factories can operate slower, taking more care to extract useable products from the fish. Members of the AFA are keenly aware of the importance of utilization rates in terms of their own bottom line. Processors that are able to generate more product from a given amount of pollock will very likely[2] increase their revenues. This translates to increased profits for the firm, if they are able to produce that product for less than the cost of its production.

Processors from each of the three AFA sectors have been pleased to report the increases in pollock utilization rates that have occurred under the AFA. Comparing 1998 to 2000 production, the catcher/processor's pollock utilization rates increased about 35 percent, the inshore sector increased their utilization rate about 2.3 percent (and they still have the highest utilization rate of any of the processing sectors), and the mothership sector increased their utilization of the pollock resource about 29 percent. Each of the processing sectors had indicated that they felt they could increase utilization rates under a rational fishing system, such as the AFA, and the early results tend to confirm their predictions.

Management Issues Implementation of the AFA has been a major project for the Council and NMFS over the past 3 years. The Council has made recommendations to the U.S. Secretary of Commerce (SOC) on several issues that were left to their discretion. Those recommendations should be finalized in regulation for the 2002 fishing season, though many of them were implemented through the emergency rules being used to manage the fishery.

The cooperative management structure has shifted more of the monitoring and enforcement burden to the cooperatives and their members, which has allowed the fishery to be managed more precisely. Prior to the AFA, NMFS would close the fishery when they thought the fleets would reach their portion of the TAC. Relatively small overages and underages were common. Cooperatives have placed more of the enforcement burden on the fishermen themselves. Monitoring their own catch, vessels are able to individually (and in aggregate) come very close to harvesting exactly the amount of pollock they were allocated.

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[2]Revenues would not increase if the greater supply of products on the market caused the price to drop to a level where the increased production did not offset the decrease in price.

U.S. Ownership Standards Increasing the percentage of U.S. ownership in vessels operating in the territorial waters of the U.S. was a primary goal of the AFA. Implementation of the U.S. ownership standards prescribed in the AFA is the responsibility of the Maritime Administration (MarAd) within the U.S. Department of Transportation. MarAd was directed to amend section 12102(c) of Title 46 to require 75 percent U.S. ownership of vessels participating in fishery operations in U.S. waters. Final regulations implementing this portion of the AFA were published in the Federal Register on July 19, 2000, for vessels greater than 100 feet in registered length. Vessels that are less than or equal to 100 feet in length must register with the U.S. Coast Guard to prove they meet the 75 percent U.S. ownership requirement. The new ownership standard outlined in the AFA will go into effect on October 1, 2001. Vessels that do not meet that standard have reorganized their ownership, are in the process of reorganizing their ownership, or are applying for an exemption because of a conflict with some other existing law, treaty, or regulation. A total of 24 vessels have applied for exemptions to the 75 percent U.S. ownership requirements. Twenty-three of the vessels fall under MarAd's jurisdiction (vessels longer than 100 feet) and one falls under the U.S. Coast Guard (vessels less than or equal to 100 feet). Five of the vessels have been ruled on by MarAd to date and all have been granted exemptions to the U.S. ownership requirements until the vessel changes ownership.

An example of a company that restructured their ownership is American Seafoods. American Seafoods Company was the owner of several catcher/processor vessels prior to passage of the AFA. American Seafoods was principally owned by Aker RGI of Norway. Those vessels are now primarily owned by Centre Partners Management LLC. During the restructuring of American Seafoods, two CDQ groups were able to purchase part of the company. Their ownership interest in American Seafoods now represents the largest Alaskan ownership interest in the At-sea sector of the pollock industry.

It is estimated that the 75% U.S. ownership requirement resulted in six AFA catcher vessels altering their ownership structure between the beginning of 1999 and October of 2001. An estimated 35 additional AFA catcher vessel ownership transactions occurred during the same time period, 27 of which were thought to have been precipitated by implementation of the AFA.

Non-AFA Catcher Processors Owners of at least two non-AFA catcher/processors with limited history in the in the 1996-98 directed BSAI pollock fishery have stated that they have suffered financial losses as a result of the qualification criteria defined in Section 208(e)(21) of the Act. They feel that qualification requirement of 2,000 mt of pollock in the 1997 directed pollock fishery did not reflect a typical H&G catcher/processor's history. They also felt that when Congress removed the AFA sunset provision, in October 2001, they precluded the NPFMC from remedying their situation in the future, since Section 213(c) of the AFA prohibits the NPFMC from recommending to the Secretary of Commerce that changes be made to Section 208. Therefore, non-AFA catcher/processors with some recent history in the directed BSAI pollock fishery cannot be allowed to participate in that fishery without Congress modifying they AFA.

Other efforts are under way that may improve the non-AFA catcher/processors situation. An industry proposal which would help these vessel owners maximize their utilization of pollock bycatch is one such effort. However, that proposal seems to be viewed by the non-AFA catcher/processor owners as an insufficient solution to their problem, since it still precludes them from participating in the directed fishery.

AFA Participants Limiting participation in the BSAI pollock harvesting and processing sectors was also included as part of the AFA. Currently there are eight inshore processing plants eligible to participate in the BSAI pollock fishery (only seven are currently associated with a cooperative), 21 catcher/processors, three motherships, and 112 catcher vessels. Each of these vessels and cooperatives (processors) are reported by their name and the sector they belong to in Appendix I.

AFA Vessels That Did Not Fish BSAI Pollock in 2000

Ineligible Catcher/processors Nine catcher/processors listed by name in the Act were permanently removed from all fisheries conducted in U.S. waters through the AFA buyout provision. Eight of those vessels have been scrapped in a San Francisco shipyard. The ninth vessel no longer fishes.

Catcher/Processors Electing Not to Participate A total of 20 catcher/processors are listed by name in the AFA as being eligible to participate in harvesting and processing BSAI pollock. One additional Head and Gut (H&G) catcher/processor meet the requirements in the AFA that allows them to harvest and process up to 2,000 mt of BSAI pollock annually.

Six of the 20 catcher/processors listed in the AFA did not participate in the 2000 BSAI pollock fishery. One of those vessels is not eligible to reenter the fishery because its owner has sold the fishing rights assigned to the vessel and has given up the vessel's documentation rights. The other five vessels were idled by their owners because their remaining vessels were able to efficiently harvest the pollock. These vessels might be considered excess capacity at the TAC levels set for the 2000 fishery. Should the TAC increase, or some other structural changes occur in the fishery, some or all of these five vessels may reenter the fishery to ensure the quota is harvested.

Catcher Vessels in the Catcher/Processor Sector. Seven catcher vessels were assigned harvest rights to 8.5 percent of the catcher/processor sector's BSAI pollock allocation. In 2000, the seven catcher vessels leased all of their harvest rights back to the catcher/processors and did not fish for BSAI pollock. Two of those vessels were owned by the same entities that own catcher/processors. The other five vessels have no known ownership links with the catcher/processors. All seven catcher vessel owners presumably leased/transferred their pollock rights because it was more profitable to do so than harvesting the pollock themselves.

Mothership Sector. Two of the 20 catcher vessels in the mothership sector leased all of their BSAI pollock harvest rights in 2000. The two vessels were the Margaret Lyn and the Pacific Alliance. The Margaret Lyn participated in the open access portion of the inshore BSAI pollock fishery, and has joined the Akutan Cooperative in 2001. The Pacific Alliance has been replaced for the 2001 fishery, under the AFA standards, by the Morning Star (USCG number 618797).

Inshore Sector. Four inshore catcher vessels leased all of their BSAI harvest rights in 2000. Those vessels were the Pacific Monarch (Unisea), Hickory Wind (Westward), Messiah (Unalaska), and Miss Amy (Unalaska). Several other vessels leased most of their harvest rights, but elected to make at least one pollock landing to ensure they remained eligible for their cooperative. Now that the inshore cooperative structure has been modified so that vessels are not required to harvest pollock each year to remain eligible for their cooperative, it is likely that more vessels will elect to lease all of their inshore sector harvest rights in the future.

Repayment of Federal Loan by the Inshore Sector Repaying the federal loan resulting from the AFA should not have been a substantial economic burden for the inshore catcher vessels (and likely processors) during 2000. Preliminary information from the 2000 Commercial Operators Annual Reports (COAR) collected by the State of Alaska indicate that the pollock prices paid to catcher vessels in the inshore sector were approximately 11.5 cents per pound on average over the entire year. That is price is about 2 to 3 cents per pound higher than catcher vessels have been paid in the recent past[3]. Therefore, the higher prices received during 2000 and the increased allocation should more than off-set the 0.6 cent per pound fee charged against each pound of BSAI pollock harvested to repay the loan. Lower ex-vessel prices, should they exist in the future, will create more of an economic hardship for the inshore sector as catcher vessels and processors repay the loan.

The higher price in 2000 was reportedly a result of a strong roe market during the spring fishery. According to public testimony provided at the June 2000 Council meeting, pollock ex-vessel prices were reported to range between 15 and 20 cents per pound during the roe season. Whether that market will be as strong next year is unknown. Preliminary reports, based on discussions with members of the fishing industry, have suggested that ex-vessel prices during the non-roe season (summer and fall seasons) were 7.8 to 8.5 cents per pound.

Catcher/Processor Sideboard Restrictions The Council has developed protective measures for non-AFA fish harvesters. Some of the restrictions for catcher/processors were specified in the Act, while others were left to the Council to develop. The 20 catcher/processors listed in the Act are restricted from harvesting any GOA groundfish. These vessels have had limited participation in the GOA since the implementation of the Inshore/Offshore program in 1992 eliminated their directed fisheries for pollock and Pacific cod. These vessels had relatively small annual catches (between 2,000 and 3,500 mt) in the GOA during the 1995-97 time period. Forgoing their rights to the GOA fisheries should not impose a substantial economic burden to the members of that fleet. It will also ensure that the catch previously taken by these vessels will be available to the non-AFA fleet. Because the catcher/processors were willing to forgo the opportunity to fish the GOA, we may assume that they were able to increase revenues sufficiently from fishing in the BSAI under the AFA cooperative structure to make up for the revenues which are lost by not fishing in the GOA.

AFA catcher/processors are allowed to harvest no more than their traditional catch levels in the BSAI groundfish fisheries. Defining traditional catch and management of that harvest was left up to the Council and NMFS to determine. The Council originally defined traditional catch as the total catch in the non-pollock target fisheries of the 29 active and ineligible catcher/processors listed in the Act from 1995-97 divided by the total catch of all vessels fishing from that portion of the TAC. This definition was used for the 1999 though 2001 fishing seasons.

The Council amended their traditional harvest definition in 1999 to be the retained catch in 1995-97 from all fisheries by the 29 active and ineligible catcher/processors listed in the Act relative to the total catch. This definition is expected to be implemented in 2002, the year the final rule is implemented. Preliminary data from Amendment 61 to the BSAI indicated that the yellowfin sole cap would be reduced about 20 percent, Pacific cod less than 20 percent, rock sole about 65 percent, and other flatfish about 70 percent, using the revised definition of historic participation.

BSAI harvesting caps were sufficient to open directed fisheries for the Pacific cod, Atka mackerel, yellowfin sole, rock sole, and the other flatfish species fishery in 2000. All other BSAI species remained closed to directed fishing by the AFA catcher/processor fleet throughout 2000. A summary of the catcher/processor sector's fishing activities, in 2000, is included in their annual cooperative report. A copy of that report is attached to this document as Appendix II.

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[3]NMFS. 1999. Economic status of the Groundfish Fisheries off Alaska, 1998. Hiatt, T. and Terry, J. Reports ex-vessel BSAI polllock prices from 1993-97 to range from 6.6 cents to 9.8 cents per pound. A 1998 inshore price of 8.5 cents per pound was used in BSAI FMP Amendment 51. The preliminary 1999 ex-vessel price was reported to be less than 10 cents per pound based on personal communication with members of industry.

In 2000, the catcher/processors harvested only about 33 percent of their 11,034 mt BSAI Pacific cod cap. The fleet did not catch the entire sideboard amount in part because the nine vessels that were retired from the fleet were the primary cod vessels. It should be noted that the catcher/processor sector has indicated that they intend to catch more of the Pacific cod cap once they refine their cooperative fishing practices.

About 35 percent of both the yellowfin sole and rock sole sideboard caps were harvested by the AFA catcher/processors in 2000. The NMFS Blend data report that only 460 mt of rock sole was taken in a directed rock sole fishery during the first four months of the year. The remainder of the rock sole harvest came as bycatch in other fisheries. The yellowfin sole was primarily harvested during the month of April. In April the catcher/processors harvested about 7,650 mt of yellowfin sole. That equates to over 90 percent of the yellowfin sole harvested by AFA catcher/processors for the year.

No AFA catcher/processor sideboard caps were exceeded in 2000 for species where there was a directed fishery. They did however exceed four sideboard limits for species that could only be taken as bycatch. Those species are squid, other red rockfish in the Bering Sea, other rockfish in the Bering Sea, and Pacific Ocean Perch in the Bering Sea. The sideboard levels were exceeded for these species because the overall catch limit was based on the catcher/processor's historic catch in target fisheries other than pollock. These species are traditionally taken in higher quantities in the pollock fishery compared to the harvest of those species in all other BSAI target fisheries. Therefore, excluding the catcher/processor's bycatch of these species while targeting pollock did not generate a sideboard cap sufficient to cover their current bycatch needs in the pollock fishery. Had the catcher/processor's sideboards been based on total catch in all fisheries, they would have likely stayed within all of their sideboard caps.

The sideboard caps seem to be working well in terms of constraining the overall harvest of the AFA catcher/processors. However, the H&G[4] factory trawl sector has expressed concern over the impacts the AFA catcher/processors might have on their sector in terms of when the AFA sector harvests flatfish and the impacts they may have on their markets. Members of H&G industry remain concerned that additional effort in the flatfish fisheries, yellowfin sole for example, will increase production of those species to a point where the market will be saturated and the price will drop to a level that will not sustain their fleet. Members of the H&G fleet have proposed other protective measures for their fleet. The Council is now beginning to analyze those alternatives.

Catcher Vessels Sideboard Restrictions NMFS uses the same management approach for catcher vessel sideboard caps as catcher/processors. NMFS will close directed fisheries to AFA-listed catcher vessels when sideboard amounts are inadequate to support a directed fishery. The closures will be timed so that adequate amounts of the species are available for bycatch needs in other directed fisheries.

In 2000, NMFS allowed directed fishing by non-exempt AFA catcher vessels in the BSAI for only Pacific cod, yellowfin sole, flathead sole, rock sole, and other flatfish. In the GOA fisheries were only open for pollock in certain areas. NMFS sets a single catcher vessel sideboard cap for each sideboard species. That amount is then made available to all AFA catcher vessels in all sectors on a seasonal basis at the beginning of the year. After NMFS sets the cap, the cooperatives then divide the allocation among themselves and finally each cooperative determines how their portion of the

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[4]The Head and Gut (H&G) sector is comprised of catcher/processors that are generally considerably smaller than pollock catcher/processors and generally produce H&G and round products. There are approximately 28 vessels in that sector primarily harvesting flatfish, Atka mackerel, and Pacific cod.

cap is divided among member vessels. Because three separate catcher vessel sectors share the same sideboard cap, an inter-cooperative agreement was implemented to divide the cap among cooperatives and set penalties for exceeding the cap. The inter-cooperative agreement has reportedly worked very well in coordinating the efforts of the various cooperatives in which catcher vessels are members.

Catcher vessel sideboard amounts are based on their total catch in non-pollock target fisheries during the 1995-97 time period. If the sideboard calculations are based on retained catch in all fisheries in the future, it will have less impact on the catcher vessels than catcher/processors, because there is little difference in retained and total catch for catcher vessels. Alaska Department of Fish and Game Fishtickets are the official source of data when catcher vessels deliver inshore. Fishtickets are filed by the processor, and it has been determined that processors cannot be responsible knowing or reporting discards which occur at-sea. Discards made by the processor are not counted against the catcher vessel, because they delivered those fish and should not be penalized for actions of another entity. For these reasons there is often little difference in the official data between retained and total catch in the catcher vessel sector.

Current observer coverage levels combined with a system of electronic catcher vessel delivery reports should be adequate to monitor the aggregate activity of AFA-listed catcher vessels. However, NMFS will require that all fish be weighed on a certified scale capable of storing fish weights for confirmation by independent observers or other enforcement agents to ensure accurate reporting at the time fish are off-loaded. This paper trail is deemed necessary to verify that the sideboard caps and directed pollock harvests are not being exceeded by the AFA fleet.

Appendix II in the document contains information on the sideboard harvests by each of the vessels in the AFA fleet. In summary, the catcher vessel fleet was able to stay within their sideboard caps for the PSC and groundfish species. Overall the sideboard caps for the catcher vessels worked well. The primary complaints came from three Pacific cod fishermen they were concerned with changes in when pollock vessels entered the cod fishery and safety issues associated with more and larger vessels on the cod grounds.

Catcher/Processor PSC Sideboard Caps Paragraph 679.63(a)(2) of the emergency interim rule implementing AFA sideboards established a formula for calculating PSC cap amounts for unrestricted[5] AFA catcher/processors. These amounts are equivalent to the percentage of prohibited species bycatch limits harvested in the 1995 through 1997 non-pollock groundfish fisheries by the eligible AFA catcher/processors listed in subsection 208(e) and the ineligible catcher/processors listed in section 209 of the AFA. If a PSC cap is reached, NMFS has the authority to close directed fishing for non-pollock groundfish for unrestricted AFA catcher/processors.

AFA catcher/processors are capped at 8.4 percent of the halibut PSC allotment, 15.3 percent of the opilio PSC, 14.0 percent of the bairdi in Zone 1, and 5.0 percent of the Zone 2 bairdi crab each year. Recall that these percentages are caps and not allocations. If the overall PSC cap is reached before the AFA fleet harvests their cap amount the entire fleet will be required to stop fishing, so the AFA catcher/processor fleet is not guaranteed these PSC amounts.

[5]The term unrestricted catcher/processor refers to the 20 AFA catcher/processors that are currently eligible to fish pollock in the BSAI. It does not include the nine ineligible catcher/processors or the one catcher/processor (the Ocean Peace) that is limited to 2,000 mt of BSAI pollock harvest annually in the directed fishery.

In 2000 the AFA catcher/processors were able to stay well under all of their PSC caps except for red king crab. Catcher/processors were allowed to take up to 286 mt of halibut mortality and they only used 80 mt. In percentage terms, they only used about 28 percent of the cap that was available to them. They also used only about 7 percent of the opilio crab, 16 percent of the Zone 1 bairdi, and 2 percent of the Zone 2 bairdi crab cap available to them. They exceeded their red king crab cap by 3,412 crab. That equates to an overage of about 550 percent. However, because the cap was so low, the percentage is somewhat misleading in terms of the magnitude of the problem.

Catcher Vessel PSC Sideboard Restrictions Prohibited species catch (PSC) by the AFA catcher vessel fleet is being monitored based on the catch rates of observed vessels and not the actual amount of PSC taken by each catcher vessel. Those rates are then extrapolated and applied to unobserved catcher vessels fishing for the same species in the same area, as is currently being done for all fisheries where observer coverage is less than 100 percent. This system does not observe each haul and therefore may introduce discrepancies between a vessel's log book report and the official NMFS PSC estimate. However, without drastically increasing observer requirements, this is the only independent system of determining PSC amounts that NMFS feels is adequate to properly monitor the caps.

PSC bycatch limits for halibut in the BSAI and GOA, and each crab species in the BSAI, for which a trawl bycatch limit has been established, were defined as catcher vessel sideboard caps. Those sideboard limits are expressed as a percentage equal to the ratio of aggregate retained groundfish catch by AFA catcher vessels in each PSC target category from 1995 through 1997 relative to the retained catch of all vessels in that fishery from 1995 through 1997.

Halibut and crab caught by AFA catcher vessels participating in any non-pollock groundfish fishery will accrue against the 2000 PSC limits for the AFA catcher vessels. NMFS has the authority to close directed fishing for groundfish (except BSAI pollock) by AFA catcher vessels once a 2000 PSC limitation is reached.

PSC sideboards allocations for the catcher vessel sector are more complicated than they were for the catcher/ processors. For catcher vessels the PSC caps are broken down by target fishery and seasons. Summing the PSC fishery and seasonal caps yields a total catcher vessel cap of 1,217 mt tons of halibut, 20,537 red king crab, 664,788 opilio crab, 219,285 bairdi crab in Zone 1, and 490,084 bairdi crab in Zone 2.

Overall the AFA catcher vessels appear to have used about 733 mt (60 percent) of their halibut mortality cap in 2000. This is well below the 1,217 mt of halibut mortality that the sector was allotted under their sideboard cap. Most of the halibut usage occurred in the BSAI cod fishery. The cooperative reports indicate that about 675 mt (76 percent) of the halibut mortality cap was used by AFA catcher vessels in the BSAI cod fishery.

Only AFA catcher vessels have a PSC sideboard cap in the GOA. Catcher/processors are not allowed to harvest groundfish in the GOA under the AFA, so they do not require PSC sideboards. The AFA catcher vessel fleet has been capped at 410 mt of halibut in the GOA. That equates to 20.5 percent of the GOA trawl apportionment of halibut.

The PSC sideboard limits should enable the non-AFA fleet to continue harvesting their traditional levels of groundfish in the GOA and BSAI. Exemptions to the sideboards were also included in the Council's recommendations. Those exemptions may allow the AFA to increase their harvest of groundfish.

Groundfish Sideboard Exemptions for Catcher Vessels The Council approved specific exemptions to the sideboard caps for catcher vessels less than 125' LOA that landed less than 1,700 mt of pollock on average during 1995-97. These vessels were exempted from the BSAI Pacific cod sideboard caps if they made at least 30 landings in the BSAI Pacific cod fishery from 1995-97. In the GOA, catcher vessels meeting the vessel length and BSAI pollock harvest requirement were exempted from the sideboard caps if they made at least 40 GOA groundfish landings from 1995-97.

As of August 24, 2000 a total of 12 vessels had applied for the BSAI Pacific cod exemption and 14 vessels for the GOA exemption to groundfish sideboards. Estimating the impacts of exempting these catcher vessels from the sideboard caps is difficult. Because these vessels have relatively small BSAI pollock catch histories, they were most likely not full time BSAI pollock participants. If indeed the vessels were not full time BSAI pollock fishermen when that fishery was open to directed fishing, the impacts of exempting them from the sideboards will be less than if they had been full time pollock boats. Overall, exempting these vessels was expected to have minimal impacts on the non-AFA fishermen.

Crab Harvesting Sideboards AFA catcher vessel harvest restrictions have been developed for each of the primary BSAI crab species. Sideboard caps for the Bristol Bay Red King Crab (BRISTOL BAY RED KING CRAB) fishery restrict the AFA vessels that qualify to participate in this fishery to an aggregate cap, much as was done with groundfish sideboards. Currently there are 42 AFA catcher vessels holding a permit to participate in the BRISTOL BAY RED KING CRAB fishery. Assuming the BRISTOL BAY RED KING CRAB GHL is 11.2 million pounds, this equates to approximately 35,000 pounds per vessel. If the 1999 price of $6.25 per pound is applied to this catch it equates to over $200,000 per vessel. Allowing the 42 AFA vessels that have participated in the fishery to continue to do so at a limited poundage, should provide protections for the remaining non-AFA vessels.

Sideboard caps for the bairdi fishery are also managed by limiting the number of AFA catcher vessels that can participate in that fishery. NMFS data regarding AFA permit applications indicates that 28 vessels are currently permitted to harvest bairdi crab. These 28 vessels will be allowed to harvest up to the percentage of the GHL they accounted for, in aggregate, over the 1995 and 1996 seasons. Information presented in BSAI FMP Amendment 61 shows that these vessels accounted for about 7 percent of the GHL over that time period. Allowing the AFA catcher vessels to harvest up to 7 percent of the GHL should provide the necessary protection for the non-AFA fleet that is required by the Act. It is difficult to make any projection as to what 7 percent of the GHL will amount to in pounds or dollars when the fishery is opened. The bairdi fishery is currently closed to fishing because of low abundance and is not expected to open again in the near future.

The remaining crab sideboards limit the number of AFA catcher vessels that are allowed to participate, but not their total aggregate catch. A total of seven vessels are licensed for the opilio fishery, two for the St. Matthew fishery, and one for the Pribilof fishery. Given the relatively small number of AFA catcher vessels eligible to participate in these fisheries and the lengths of the king crab fisheries, it is unlikely that they will cause substantial negative impacts to the non-AFA vessels in the fleet.

Exemptions to Crab Harvesting Sideboards The Council approved an exemption to the crab harvesting sideboards for any vessels that can demonstrate participation in all opilio, bairdi, and BRISTOL BAY RED KING CRAB fisheries during the years 1991-97 and that have AFA pollock qualifying histories of less than 5,000 mt. This action is expected to affect only one vessel.

Allowing that vessel to be exempted from the crab harvesting sideboards should not cause any negative impacts to non-AFA crab fishermen, as a result pollock cooperatives.

Crab Processing Sideboards The crab processing sideboard components of the AFA regulations are based on the structure defined in the Act under Section 211(c)(2)(A) through the 2000 fishery. This section of the Act is specific to shorebased and mothership processors.

The impacts of crab processing sideboards are not yet fully understood. Public testimony taken during the June 2000 Council meeting showed that harvesters and AFA processors wanted to have the caps removed. Non-AFA processors still supported the caps that were put in place during the 2000 opilio season. The primary reason that catcher vessels wanted the caps removed was to increase competition for their product so they could potentially receive a higher price. They also felt that the reduced competition lead to longer offload time, which had the weather been worse[6] could have resulted in much higher deadloss.

AFA processors wanted the caps removed so they could purchase additional crab. Some of the AFA processors have added crab processing capacity since the end of the period used to determine processing history. Therefore, in the opilio fishery, the size of the processing sideboard cap is less than they had processed as a sector in recent years. Based on the public testimony and a discussion paper drafted for the Council, the Council changed the formula for calculating crab processing caps at their September 2000 meeting. The formula originally used the processing history of the AFA sector relative to the non-AFA sector over the years 1995-97. The new formula adds 1998 to the equation and gives that year double weight. The effect of that change is that the crab sideboards are increased slightly for most species. The opilio fishery had the largest increase (7.74 percent) from 58.15 percent of the GHL to 65.89 percent.

Groundfish Processing Sideboards The AFA directed the Council to develop protections for non-AFA processors, but did not specify a time frame for taking those actions. Measures to protect non-AFA processors have been considered by the Council, but further discussions and any Council action has been tabled until negative impacts are realized. The specific alternatives considered for processing sideboard caps may be found in the July 14, 2000 public review draft of the EA/RIR developed for this issue. The Council is also considering alternative methods to protect non-AFA processors, such as modifying the Improved Retention/Improved Utilization program for flatfish.

Processing restrictions applying to catcher/processors were included in the AFA, and have been implemented. Restrictions that are currently being enforced through the emergency rule include a prohibition on processing any fish harvested from NMFS management area 630 (part of the Central Gulf of Alaska). AFA catcher/processors are also prohibited from processing any BSAI crab. However, the Act does not preclude those vessel owners from using revenues generated through the pollock fishery to invest in another non-AFA vessel that could be used to harvest or process BSAI crab.

Cooperative Contracts and Reports The AFA requires that any contract implementing a fishery cooperative for the purpose of cooperatively managing directed fishing for BSAI pollock for processing by catcher/processors, motherships, or the inshore sectors and any material modifications to any such contract must be filed not less than 30 days prior to the start of fishing under the contract with the Council and with the Regional Administrator, together with a copy of a letter from a party

[6]The 2000 opilio season was moved from the winter to April as a result of the ice edge being further south than normal at the time of year the fishery normally starts, and because of the small GHL

to the contract requesting a business review letter on the fishery cooperative from the Department of Justice and any response to such request**.**

The Council and NMFS have required that specific elements be included in the cooperative contracts. Those elements include a list of parties to the contract, a list of all vessels and processors that will harvest and process pollock harvested under the cooperative, the amount or percentage of pollock allocated to each party to the contract, and penalties to prevent each non-exempt member catcher vessel from exceeding an individual vessel sideboard limit for each BSAI or GOA sideboard species or species group that is issued to the vessel by the cooperative.

The cooperative contracts also must state that pursuant to Section 210(f) of the AFA, the cooperative members agree to make payments to the State of Alaska for any pollock harvested in the BSAI pollock fishery which is not landed in the State of Alaska, in amounts which would otherwise accrue had the pollock been landed in the State of Alaska subject to any landing taxes established under Alaska law.

Each of the cooperatives have also voluntarily signed an inter-cooperative agreement that establishes regulations each of the cooperatives must follow. That contract also sets-up penalties that will be assessed if the regulations in the inter-cooperative agreement are not met. To date the inter-cooperative agreement has worked well. Members of industry have stated that the inter-cooperative agreement has met or exceeded their expectations, ensuring the fishery operates in a efficient and orderly manner.

Any fishery cooperative that is formed must also submit annual written reports on fishing activity to the North Pacific Fishery Management Council for public distribution. Those reports contain a wealth of information on the activities of each of the cooperatives. A copy of each cooperative report from the 2001 fishing year is included under Appendix II.

Leasing of Quota Among Cooperative Members The leasing of quota among members of a cooperative has allowed excess harvesting capacity to be removed from the BSAI pollock fishery, and has allowed for more efficient utilization of the remaining vessels. The Council in June of 2001 also approved an amendment that would allow members of inshore cooperatives to lease pollock to members of other inshore cooperatives. This may increase the amount of leasing that takes place. The Council also approved an amendment that removed the requirement that a vessel fish each year to remain eligible to join an inshore cooperative. This amendment will likely also result in increased leasing of BSAI pollock among cooperative members.

Trident Seafoods was the only[7] member of the catcher/processor sector to lease more than 5 mt of pollock to other cooperative members. Several members of the catcher vessel sector leased pollock in 2000. Proposed Amendment 69 to the BSAI Fishery Management Plan indicates that approximately 38,000 mt of pollock (7.8 percent of the inshore harvest) were leased by catcher vessels in the inshore sector during 2000. That same year several catcher vessels in the catcher/processor sector leased pollock, and by 2001 all of the vessels in that sector leased all of their quota. Several catcher vessels in the mothership sector also leased quota in 2000.

Bycatch and Discards The term “bycatch” is used in this document to describe fish that are harvested when targeting another species; the term “discards” will refer to fish that were not retained for processing. Discards are generally considered as either “economic” or “regulatory”. Economic

[7]Recall that the Endurance also sold all of its allocation and has left the fishery

discards occur when it costs more (including opportunity costs of the plant) to process fish than the market is willing to pay. These fish are often of poor quality, a size the market will not accept, or the plant being unable to efficiently process that fish. Most of the discards in Appendix III are economic discards. Regulatory discards occur when Federal or State regulations mandate that the fish be discarded. PSC are regulatory discards and so are groundfish harvested above the maximum retainable bycatch[8] (MRB) amounts.

Discards may result from either fish taken as bycatch in a directed fishery, or they may result from the species that was targeted being the wrong size or of a quality that the market would not accept. The term discard does not apply to parts of a fish that were not kept once the saleable products have been utilized. Some vessels do not have the capability to produce fishmeal, and after the flesh is removed the head, guts, and bones are often returned to the sea. This practice is not considered to be discarding.

This document has considered all of the biomass harvested , but not utilized, to be discards. Therefore, species such as jelly fish are included in the calculation. These are species that are not eaten and have no retail use. Including these species in the calculation increases the reported discard rate. For example, in the catcher/processor sector excluding these species would result in a discard rate of less than 1 percent. Including those species increases the discard rate to about 2 percent in 2000.

Overall the discard rates in the BSAI pollock fishery are among the lowest of any major fishery in the world. Discard rates have declined in the recent past because the Council has implemented regulations that were targeted at reducing bycatch and discards. With current discard rates for edible fish already at less than 1 percent, it is likely that only marginal improvements in bycatch and discard rates can be expected in the future.

Fishing Community Impacts At total of six regions were characterized for this analysis, four in Alaska and two the in the Pacific Northwest. These were the Alaska Peninsula/Aleutian Islands region, the Kodiak Island region, the Southcentral Alaska region, the Southeast Alaska region, the Washington inland waters region, and the Oregon coast region. Changes from the pre-AFA period to the present were described for all regions. Beyond the regional level general analysis, specific analysis focused on four individual communities, and these included both AFA and non-AFA communities. As a simplifying assumption, it was decided at the outset that three Alaskan communities and Seattle would be the focus of this effort, since they represent the range of community types. Unalaska/Dutch Harbor and Seattle were selected to represent AFA communities. Sand Point was chosen to represent communities that have been involved in the BSAI pollock fishery in the past, but because of the AFA, may be expected to participate less in this fishery that was previously the case. Finally, Kodiak was chosen to represent non-AFA communities that might be expected to experience inter-regional impacts. Limited fieldwork was conducted in all four of these communities. While fishing industry sector information is presented in regional format in order to provide a context for the interpretation of results and to provide information on the direction and relative order of magnitude of the types of changes that have been experienced as a result of the AFA, the focus of the impact analysis is on those four communities.

In overview:

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[8]MRBs are set for each target fishery, and define the amount of Pacific cod for example that may be retained in the directed pollock fishery. If those levels are exceeded and the Pacific cod fishery is closed (in this example) then the fishermen must either discard the excess fish or be in violation of fishing for species that are not open to directed fishing.

- AFA effects have been generally positive on an industry or sector basis as expected. There is some variability between sectors in this regard, with the gains seen in the mothership sector perhaps not as large as those seen in other sectors.

- AFA has resulted in ownership changes within different sectors, and this has led to some shifts in ownership between communities and regions.

- A common observation among fishery participants is that AFA has had the beneficial impact of helping to mitigate negative impacts that have been associated with post-AFA impacts of Steller sea lion related protection measures, but this is difficult to quantify.

- AFA may be related to a downturn in fishing support sectors in some communities, but this downturn is also part of: (1) other fishery dynamics; (2) 'rationalization' of the larger economies of the relevant communities; (3) less sharp 'peaks and valleys' in fishing seasons.

- A general level caveat, however, is that few post-AFA data are available. There has been only one full year under the onshore co-op system, and only two years under the offshore co-op system. This makes interpretations of changes apparently related to AFA problematic, due to normally occurring year-to-year changes in the fishery as well as the fact that fishery participants are still working out strategies, adaptations, and responses to AFA-influenced fishery conditions.

Little change from AFA is seen in the Southcentral and Southeast Alaska regions. Oregon coast region changes accrue nearly exclusively to regionally owned catcher vessels that are in turn concentrated in Newport, and these changes have been generally positive. Changes seen in the Alaska Peninsula/Aleutian Islands region tend to be focused in Unalaska/Dutch Harbor, Akutan, Sand Point, and King Cove. For the Kodiak Island region, impacts have been concentrated in the community of Kodiak. Washington inland waters region impacts have tended to focus on the greater Seattle area. The following are the main analytic points for the relevant study communities:

Unalaska/Dutch Harbor, Alaska Unalaska is the support port for the Bering Sea groundfish fisheries, and is the home to the major concentration of Bering Sea related shore-based processing. The industry is large relative to the overall local economy, the number of workers associated with the industry make up a significant portion of the population base, and the industry in its various sectors contributes a significant portion of the local tax revenue base for the community. As such, the community is likely to feel impacts that accrue to any sector associated with the Bering Sea groundfish fishery. Following are the primary AFA-related changes that have occurred in the community:

Population and Housing

- Peak population in the community is down with the spreading out of the fishing seasons, and this is in part attributed to AFA. While local leadership speculates that overall population may be down, quantitative data are not available to document this. School population has been stable.

- There has been a marked softening of the housing market in the community. While this is a trend that preceded AFA, AFA appears to have contributed to the continuation of this trend. Although assessed valuation has not declined, it has not kept pace with inflation.

Home sales have slowed, and rental vacancies are up. Clearly AFA is but one of a number of contributing factors in this situation.

Fishery Economic Sectors

- The direct fishery related portion of the economy has benefitted from AFA conditions, and especially the municipal revenue streams directly related to pollock landings. Pollock as a percentage of volume seafood processed locally increased from 1998 through 2000, and pollock processed value locally increased from $55.8 million to $79.7 million over this same period. (The community impacts of this were not as apparent as would have otherwise been the case because the value of crab processing in the community dropped from $85.6 million to $42.9 million during this same period for a variety of reasons unrelated to AFA.)

- In the catcher vessel sector, there is little community involvement in the AFA-influenced fisheries in terms of a 'residential fleet.' In 2000, Unalaska-based catcher vessel co-ops accounted for 52.6 percent of the inshore pollock total. Although a number of participating vessels are homeported in the community, no long-term residents of the community own or skipper these vessels. Whether or not the trend seen over the past several years of increasing processor ownership and/or control of catcher fleet making delivery to local plants has been altered by AFA conditions cannot be seen from available data in the brief post-AFA interval.

- In the processing sector, for local AFA plants employment changes have varied by individual entity. The processing seasons have slowed down and spread out to a degree, but at the same time there have been changes in product mix. For example, at one large plant one major processing line closed directly as a result of the slowing of the race for fish under AFA but the net number of workers increased. A number of the newly produced products, or products produced in greater or relatively greater volumes are relatively labor intensive. AFA employment impacts are difficult to ascertain or interpret because of the varying approaches of the different plants and the changes occurring in other fisheries. An example of this is that in 2001, some plants did not utilize a dedicated crab crew as in recent years, but rather, because of increased crew flexibility/availability under AFA conditions combined with lower crab volume, they were able to staff both functions with a single crew.

- Non-AFA local processing plants did experience change as a result of AFA, but this varied by plant type. The 'medium size' non-AFA plant in the community reported little change in operations. The two smaller plants, on the other hand, reported that AFA had negative impacts for their operations in several ways. These included: the ability of the larger plants to now pursue custom niche markets when they were not able to do so before; the implementation of crab caps on the AFA plants, which meant that cooperative endeavors with the smaller plants now result in a potential loss of volume for the larger plants due to the cooperative undertakings counting against the larger plant's cap; and, loss of flexibility of the smaller plants by preclusion of possible future opportunities of exploiting AFA regulated fisheries.

Support Service Sectors

- In terms of support service sector businesses, Unalaska is the major regional provider of fishery support services. AFA made the fishery more efficient in several ways, which is a positive benefit for a number of reasons and within a larger frame of reference, but the local support economy was based, to a significant degree, on inefficiencies in the fishery. In the past, in-season down time during the race for fish was a potentially catastrophic event, and local firms were structured (inventory, personnel, and number of providers) to respond to those circumstances. With AFA-associated changes in the pace in the fishery, cost of service and has became relatively more important than in the past, and immediate response capability does not override all other factors.

- Shoreplants have remained more-or-less self-contained, self-sufficient enterprises in the community. This varies from plant to plant, but operations tend to be of an industrial enclave nature, with a relatively low volume of purchases of goods and services from the local support sector.

- Vessel support businesses have experienced a range of AFA-related impacts. Employment is down, but this is a complex situation. Firms that have fewer positions have tended to just not bring in temporary/fishing season specific employees, and many businesses report a dropping off of total hours if not a drop in the number of permanent positions. In general, inventory has been reduced due to a drop in peak demand, and the number of support providers is down somewhat. The drop in providers has been more in the nature of a decline in the number of providers for any one service, rather than a decline in the range of services available locally. At the community level, these conditions are related to the local decline in crab landings as well as changes attributable to AFA, and different businesses have had different outcomes based on their relative dependency on different fleet sectors.

- Offshore support businesses have experienced a downturn with the reduction of the offshore fleet under AFA. Because of changes in the race for fish conditions, there has been some move from private to public facilities for shipping, and there has been some shift between communities due to ownership changes that may not be directly related to AFA conditions. Different businesses have been differentially impacted based on their client mix, with the businesses that relied most heavily on that portion of the fleet that was excluded (and/or retired/scrapped) experiencing the greatest impacts.

- Shipping enterprises in the community have felt impacts from AFA. The improved ability to predict shipping needs under non-race conditions has meant that there are different viable options now available to those with fisheries product to move. There has been a shift in market share between the two largest shipping firms in town, but this is likely as attributable to changes in and between the two firms as it is to AFA conditions. Relatively more product is moving by tramper than in the past, although this is difficult to quantify, and two new private dock facilities have been put into service during the post-AFA era. Union longshoring hours are down, but the relationship of this to total employment hours in the community is unclear due to a recent increase in non-union work volume.

Municipal other Community Level Impacts

- In terms of municipal revenues, the general fund revenues for Unalaska were $19.4 million in FY98, $19.1 million in FY99, and $19.4 million in FY00. Looking at the combination of the local raw fish tax, the fishery business tax, and the resource landing tax which, combined, represents all of the main fishery sectors, revenues to Unalaska totaled $7.7 million for each year FY96-FY99, inclusive, and rose to $8.1 million in FY00. Quantifying the role of AFA in this increase is somewhat problematic, given that the FY00 ended half-way through the first full calendar year of onshore co-ops, but it is clear that there has been a local benefit.

- In terms of other types of community changes seen over the relevant time period, the clinic patient count is down reflecting the decrease in demand for acute fishing season needs. Tourism is up in the community, but this remains a very small sector. Lodging demand is off at peak times, but has been spread out over a longer period. Demand at such basic retail establishments as the larger grocery stores is off, and "entrepreneurial" type businesses would appear to have declined somewhat, but quantitative data is not available to verify this common observation. The greatest challenge facing the community at present in terms of its fisheries economic base, and the sectors that are, in turn, dependent upon that base, is the outcome of the ongoing fishery management changes in response to Steller sea lion conservation concerns. This has created an atmosphere of uncertainty for many of the businesses in the community. The consolidation within the fishery sector that many expected to result from AFA has not yet occurred.

In sum, AFA has had impacts on the community of Unalaska. The larger pattern of AFA impacts would appear to be direct benefits to those aspects of the participating groundfish sectors present in the community, benefits to the municipality in terms of revenues, and a downward trend or mixed results among the support service sector. Not all difficulties faced by support service sector businesses are attributable to AFA. These support sector challenges and many of the other changes seen in the community, such as the drop in housing demand, are linked to a 'rationalization' or increase in efficiency of the community economy and a move away from an economy geared for a pulse demand cycle and inefficiencies within the commercial fisheries. AFA has played a significant a part in this general level change, but trends along these lines were apparent in the community prior to AFA.

Sand Point, Alaska Sand Point was chosen as a study community for the assessment of the social impacts of AFA due to the fact that it is a community that was engaged in the Bering Sea pollock fishery, that qualified as an AFA community (or, more accurately, the local shore processing plant qualified as an AFA entity), but did not qualify as a catcher vessel co-op community (or facility). Thus, Sand Point experienced a very different set of outcomes than Unalaska/Dutch Harbor as a result of AFA, and AFA caused a shift in the commercial fisheries base of the community. The main areas of impact may be summarized as follows:

- Less Bering Sea pollock is being processed in the community as a consequence of AFA in general and as a result of the local shore plant not qualifying for a catcher vessel co-op relationship in particular. Some pollock continues to come to the community as catcher vessels that are in co-ops (elsewhere) can still make limited (10 percent) deliveries to non-major partners. The plant can and does act as an overflow relief valve during the A/B season "natural" race for fish for a sister plant (owned by the same firm) on the Bering Sea that is qualified as an AFA co-op plant.

- A combination of negative factors hit the commercial fisheries of the community at the same time. These included Gulf of Alaska quota shifts from the western to the eastern Gulf, Area M salmon restrictions, and Steller sea lion related fishery restrictions. In addition to these immediate factors that have had a pronounced negative impact on the local commercial fishery, there are speculative concerns regarding BSAI vessels being able to expand to or focus more effort on the Gulf of Alaska than in the past due to advantages gained under

AFA. While apparently not actualized to date, these concerns are having an impact on the way local fishermen think about long-term strategies.

- It is difficult to assign causality, or degree of causality to AFA for several social impacts that have been realized in the community as a result of a constellation of factors. Further, there are a number of difficulties quantifying changes that are believed to be taking place in the community. Example indicators of change in the community (and the problems therewith) include the following:

- Municipal revenues appear to be dropping. Tax receipts were relatively steady through FY00, but a 20 percent dip is forecast for FY01. FY01 figures, however, are not yet available.

- Field interviews indicate there has been a dip in retail businesses, but tax data are not yet available to quantify this. Native Corporation business is down according to management staff.

- Local government officials believe that overall population is down, but data to quantify this change are unavailable.

- Commercial fishery data confidentiality restrictions preclude a detailed analysis of the relative role of AFA-linked impacts to overall community impacts, due to the fact that not enough entities exist in the community to allow trend analysis for local impacts of individual fisheries.

- The local fishery support service sector is small. Nearly all support services are provided by the local plant itself. In this case, under AFA conditions inventory has been reduced and there has been a reduction in labor hours for support service speciality personnel but again, this cannot be quantified due to confidentiality restrictions.

In short, Sand Point in the post-AFA time period has experienced a range of adverse fishery related impacts. While not the root cause of all of these changes, AFA is one of several elements that has contributed to a downward trend of key socioeconomic indicators for the community.

Kodiak, Alaska Kodiak was chosen as a community for analysis of the impacts of AFA due to the fact that it represents non-Bering Sea communities in Alaska that did not have a high historical level of involvement with Bering Sea pollock, but that could have potentially experienced AFA-related impacts in several ways. No Kodiak plants qualified as AFA plants. Impacts were indeed seen in both the local processing and harvesting sectors.

Processing

- One impact of AFA has been a situation where Gulf of Alaska open access processors have been put in a position of competing with BSAI co-op processors. This uneven rationalization has meant that open access entities are competing with the same products in the same markets with the rationalized entities without the structural benefits of the co-op system.

- Another impact is seen in the 'race for history' behaviors that have been seen among both processors and harvesters in anticipation of an AFA-like rationalization in the Gulf of

Alaska. This has led to strategic decisions that may not be economic in the short run, and may not be in the best interest of all local sectors or relationships between sectors, as different sectors (and different entities within individual sectors) strategize differently. Different entities have widely differing abilities to adapt to this 'irrational' strategic environment.

- These circumstances have had impacts on both new and long established processors.

Harvesting

- "Fishing for history" behaviors are also taking place among Kodiak-based catcher vessels. As among processors, this can include pursuing strategies that are uneconomic in the short term.

- There is speculation among catcher vessels that BSAI vessels will capitalize expansion into the Gulf of Alaska fisheries using both AFA gains and the temporal flexibility afforded by the AFA environment in the BSAI. Sideboards have been put in place specifically to address these types of concerns, and appear to be working in the short term. Whether or not there is more cause for concern in the long run remains to be seen.

In terms of general community level impacts, housing, tax revenues, and other community indices have changed over this period, there is no indication that there are community level impacts in Kodiak attributable to AFA.

Seattle, Washington As a community, Seattle is at once the most and the least involved in the AFA-influenced fisheries of the communities profiled. In absolute terms, Seattle is in one way or another 'home' to a very large proportion of the AFA-influenced fishery. In relative terms, this fishery is a negligible component of the overall economy of the Seattle area. In general, discussion of a distinct "fishing community" within the greater Seattle area is problematic, although there are areas of concentration of activity in Ballard, the Port of Seattle, and the Ballard/Interbay/Northend Manufacturing Center (BINMIC) planning area. For the purposes of this analysis, it is most useful to trace the intersections of particular sectors and the community. The following are summary points by sector:

Inshore Processing

- Under AFA, there was effectively an increase in volume (as a result of quota allocations to the associated catcher vessel co-ops, away from the offshore sector), but this was partially offset in the short term by compensation to the offshore sector.

- Employment and various other forms of activity of the sector took place primarily in the Alaska communities profiled, but ownership-derived economic benefits accrue to Seattle. Despite this significant accrual, there cannot be said to be Seattle community level impacts arising from AFA related changes to this sector.

Motherships

- This sector did experience AFA-related ownership changes, but ownership remains concentrated in Seattle.

- A major structural change resulting from AFA was the splitting off of motherships into their own sector with their own allocative pool separate from the offshore sector. While motherships are no longer in direct competition with catcher-processors, the quota assigned to motherships was somewhat less than recent harvest levels.

- The catcher vessels associated with the three entities in this sector were placed into a single co-op, and there has been movement of catcher vessels between entities within the co-op. This is a quite different situation than seen in the onshore sector, where vessels of competing entities are in separate co-ops and there are obstacles to free movement of vessels between co-ops.

- Expenses are reported to have increased under AFA and, while revenues may also have increased, they have not kept pace with expenses, according to sector participants. This cannot be independently verified with the data available.

- The three entities in this sector were structured very differently prior to AFA, and continue to have different adaptations post-AFA making sector generalizations difficult. It is clear, however, that whatever impacts have been experienced by individual operators, or the sector as a whole, have not resulted in community level impacts for Seattle.

Catcher-Processors

- Under AFA, by design, catcher-processors experienced a significant reduction in allocated quota and a reduction in the overall sector fleet.

- Loss of access by the sector was mitigated to a degree by compensation for the planned reductions under AFA. Employment losses, estimated at between 1,500 and 2,000 jobs, have not been regained. This is a large number within the fishery, when contrasted to the participant base. For example, the entire population of Unalaska/Dutch Harbor is 4,300 persons. Job loss was not localized in any particular community, as hiring patterns differed from entity to entity, workers came from a wide region, and the work aboard the mobile vessels did not take place 'in' a particular community or communities.

- The effect of employment loss varied from firm to firm. One large catcher-processor firm estimated their overall loss at between 600 and 700 jobs. With a 30 to 35 percent normative turnover in crew positions per year, this yielded a net displacement of around 400 individuals. Compensation packages were offered to displaced employees, and an estimated 25 to 30 percent of key crew has been rehired as remaining positions opened through attrition.

- There have been significant ownership changes within the sector as a result of AFA, with American ownership interest increasing by design. The CDQ portion of ownership of this sector has increased significantly post-AFA, which has increased direct CDQ entity involvement with the fishery.

- One major positive impact on the sector has been increased stability. Inefficient vessels were removed from the fleet, and those remaining are apparently on much more solid footing than was the case prior to AFA. This has had beneficial impacts to both public and private entities providing services to the fleet.

- Impacts to the sector resulting from AFA were immediate and drastic, but were not significant in terms of community level impacts.

Catcher Vessels

- One of the dramatic changes for the catcher vessel sector under AFA was the formation of co-ops. This fundamentally changed the structure of the catcher vessel business, and altered the relationship between catchers and processors. Former competitors are now in the same co-operative structure, and deliveries (and catcher vessel efforts) are structured to increase efficiencies in processing. Catcher vessel co-ops have tended to hire business managers that work with the processor to coordinate the fleet, and this has increased information flow between catchers and processors to a level that did not occur in the past due to competitive/business information tensions between the two sectors.

- How AFA has influenced the trend in recent years of processing entities acquiring increasing ownership and/or control of catcher vessels is unclear and will take a longer period of time to sort out as entities adapt to changed conditions under AFA.

- There has been some ownership change of catcher vessels under AFA, but these changes have not been extensive.

- Compensation structures within the sector have changed to a degree under AFA. Payments from processors to vessels is reported to be more based on the value of the finished product than in the past. There is also some indication that in at least a few instances crew compensation has gone away from a traditional crew share format to a wage labor or salary format as a result of different ownership structure and/or changes in the risk/uncertainty environment under AFA.

- Catcher vessel asset value has increased under AFA. At the same time, there has been an effective loss in flexibility in business operations due to the impediments to free movement under the co-op system.

- Leasing of quota, and the accompanying retirement or sidelining of excess capital within the shoreside co-ops has not taken place to the degree that many predicted. Vessels have remained protective of their catch history, and protective of continuing to accrue catch history. Of the four vessels that are known to have leased quota and are cited in the report, two moved between co-ops, one was purchased by co-op members and had its quota share divided among the other vessels, and one leased quota in the Bering Sea and concentrated on operations in the Gulf of Alaska. The pattern is very different for catcher vessels that prior to AFA delivered to the catcher-processor fleet. All of these vessels have leased their quota to the catcher-vessel fleet.

- Another major structural change within the catcher vessel sector has been the cooperation seen under the Intercooperative Agreement. This has lead to coordination between co-ops on both the primary and the sideboard species and areas, as well as to a 'co-management' approach to data collection to support federal management of the fishery.

- AFA has slowed the fishery for the catcher vessels, and has arguably made the fishery safer for owners and crews as it is now easier to make decisions to avoid extreme weather, sea, or other unsafe conditions. The short time that has passed since AFA went into effect does not allow a statistical evaluation of this issue, but anecdotal evidence would indicate that a reduction of injuries has occurred.

- In terms of social impacts on specific communities, the catcher vessel fleet is too dispersed to for these generally beneficial impacts of AFA to be felt at a community level.

When all of the sectors that have links to Seattle are taken in aggregate, locating a 'footprint' of the fishery for the purposes of a social impact assessment is still problematic. For example, if the Port of Seattle is examined, moorage fees associated with the catcher-processor fleet are down as size of the fleet has been reduced and the remaining vessels spend more time at sea. According to Port representatives, however, while this has resulted in short-term fiscal impacts, it actually represents a long-term strengthening of the Port revenue base as the remaining operations are stable and can remain in place for coming years. As for the Ballard/BINMIC area, there are no updated data available that would indicate there are localized AFA impacts occurring in this area, nor are there qualitative indications that such changes are taking place. There are some changes seen for fishery support services in this area, but these are generally more attributable to land valuation changes than any changes seen in the fishery. In sum, while changes have been experienced by the individual sectors located in Seattle, and there have been changes in some of the areas of Seattle that host these sectors, there are no significant community level social impacts for Seattle that have resulted from AFA.

Summary: AFA Social Impacts There are several general points regarding social impacts of AFA.

These are:

- Social or community level impacts of AFA differ widely by community.

- The impacts of AFA have been generally positive.

- The slowing of the race for fish, and the increased economic efficiency of the fishery have had impacts on fishery support service sector businesses.

- The slowing of the race for fish and better utilization of the resource has long-term benefits for the fishery and thus the communities engaged in or dependent upon the fishery.

- It is difficult to isolate the impacts of AFA in a dynamic environment. Other changes occurring at the same time complicate the picture, with the most notable of these being those associated with Steller sea lion conservation-related management measures.

- While difficult to quantify, the co-operation within and between sectors that AFA has fostered has replaced a much higher level divisiveness seen in earlier quota allocation approaches. This has had positive if subtle social impacts in the communities.

- Change is still occurring as all sectors and communities are still in the process of adapting to the post-AFA environment.

Business Practices Business practices of the BSAI pollock fleets are largely defined in their cooperative agreements (Appendix II). The cooperative agreements are attached as part of each of the cooperative reports submitted to the Council. Those documents define the terms each member of a cooperative agrees to abide by when operating their business. If a cooperative member does not fulfill the terms of their contract, they are subject to fines and sanctions imposed by the cooperative. If the violations reach a level such that the cooperative does not meet the regulatory requirements set out by NMFS, then they are also subject to Federal sanctions. These sanctions can be very severe, including the loss of the offending parties right to participate in the BSAI pollock fishery.

In 2000, any[9] pollock history that was not assigned a vessel joining a cooperative went into the open access pool of the pollock fishery. The open access pool included the history of vessels that elected to join the open access pool as well as vessels that did not qualify for the inshore sector of the AFA (unassigned catch history). The relatively large open access pool enticed some vessels to opt out of cooperatives and remain in the open access fishery. During the June 2000 Council meeting an amendment was approved to change the allocation formula such that the unassigned catch would be distributed among the inshore sector vessels in proportion to their catch history relative to other members of the inshore sector. Had this change been in place for 2000 it would have resulted in the open access pool being reduced from 6.145 percent of the inshore allocation to 2.229 percent, or a 19,000 mt decrease in the open access pool allocation. Those 19,000 mt would have then been redistributed among the vessels comprising the inshore cooperatives. Given the revised allocation formula, only four vessels (there were 14 vessels in 2000) opted to join the open access pool in 2001 (see Appendix I for cooperative affiliation and cooperative allocation percentages in 2001). Changes to the allocation formula and the reduction in the number of vessels in the open access pool resulted in only 0.39 percent of the inshore pollock allotment being allocated to open access vessels in 2001.

Members of the inshore sector join cooperatives affiliated with the processor where they deliver pollock. Therefore, a separate cooperative was formed around the vessels that deliver to a particular[10] processor operating within the inshore sector. The cooperative's membership is comprised of the catcher vessels delivering to that processor. Members of the open access pool are free to deliver to the processor of their choice. Member of this fleet would then be allowed to join the cooperative associated with the processor that it delivered the majority of the BSAI pollock to the previous year.

One of the most contentious issues for the Council was the structure of the inshore cooperatives, particularly whether vessels in a cooperative would be required to deliver 90 percent of their collective allocation to the processor associated with the cooperative as outlined in the AFA. Catcher vessel owners wanted to be allowed to deliver their BSAI pollock catch to the processor willing to pay the highest price or offer the best terms for their deliveries. The catcher vessel owners were concerned that processors would have more market power and be in a better position to dictate the ex-vessel price if they were required to deliver to a single processor. After much debate the Council elected not to change the inshore structure. As reported earlier, the roe season prices paid to inshore catcher vessels were higher than normal in 2000 while non-roe season prices were about the same or slightly lower than seen in the recent past. The higher roe season prices were a result of a strong roe market and the formula negotiated by the catcher vessel owners and processors to set the roe price. It is still too early to determine if the extent that the current inshore structure will impact the price paid to catcher vessel owners in the long run.

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[9]Unclaimed catch refers to pollock catch delivered to processors in the inshore sector during 1995-97 that was harvested by vessels that are not permitted to fish in the inshore sector. These catcher vessels may be operating as one of the seven catcher vessels in the catcher/processor sector, vessels that elected not to join the AFA, or vessels that landed some pollock but not enough to meet the inshore qualification criteria specified in the AFA.

[10]Trident has a processing plant in Sand Point that is AFA qualified but is not associated with a cooperative. That plant does take deliveries from some vessels that are members of the Akutan cooperative.

NMFS does not allocate sideboard species by cooperative. A single sideboard cap for each species/area is determined for all[11] AFA catcher vessels. NMFS then monitors the overall caps to ensure that the catcher vessel fleet does not exceed its cap.

Employment Employment in the catcher/processor sector declined as a result of reducing the number of vessels participating the BSAI pollock fishery. Persons that were displaced by the AFA retiring nine vessels were helped in finding employment with other catcher/processor companies or were offered training to develop skills that would allow them to obtain another job. Discussions with members of the catcher/processor sector indicate that the number of jobs (work opportunities) that were lost in the catcher/processor sector as a result of the AFA is probably about 1,500[12], given that nine catcher/processors were retired as part of the Act and six eligible catcher/processors were not used to fish pollock by their owners in the 1999 fall fisheries and in 2000. Of the 1,500 jobs that were lost it is estimated that 800 were because the AFA retired the nine vessels. The remaining job were removed because catcher/processors made business decisions to idle boats in order to remove excess capacity from the fishery.

The approximately 3,325 jobs that do remain in the catcher/processor sector likely have more stable and/or increased wages. Wages would be expected to increase since the pollock wages are divided among fewer employees in the sector, and crew members are often paid based on a percentage of the vessel's revenues and fewer vessels means more revenue per vessel.

It is more difficult to detail the employment impacts that the AFA has had on the catcher vessel sector. Additional time is required to see how the catcher vessel owners will react to modifications made to the inshore AFA cooperative structure. More vessels will likely be removed from the fishery now that the Council has approved a motion that changes the definition of a qualified inshore vessel. Before this change, catcher vessels were qualified for the cooperative based on where they delivered the majority of their pollock the previous year. Vessels that did not participate in the BSAI pollock fishery were ineligible to join a cooperative.

Information contained in the High Seas Catchers' Cooperatives annual report indicates that all seven catcher vessels in that sector did not participate in the 2000 BSAI pollock fishery. Two of those vessels were reported as having made no landings in any of the BSAI or GOA fisheries under the Authority of the North Pacific Council. The remaining five vessels did participate in other fisheries, so the harvesting crew jobs on those vessels were not eliminated completely. Typically trawl catcher vessels have crews of 4 to 6. If we assume that 5 crew members were employed by these vessels and those vessels did not participate in fisheries outside the jurisdiction of the NPFMC, it means that 10 jobs were eliminated in the North Pacific.

Five other vessels in the inshore and mothership sectors leased all of their pollock. Some of those vessels participated in other fisheries and some were completely retired. Therefore, it is likely that an additional 10 to 15 jobs were removed from the fishery in the inshore and mothership sector.

Currently little can be said regarding the in the inshore and mothership processing sectors. At least one of the inshore processors has closed a pollock processing line. The impact of this closure on

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[11]This includes catcher vessels in the inshore, mothership, and catcher/processor sectors.

[12]This number is estimated based on a total of 15 vessels not participating during 2000 and each vessel employing about 100 persons. The At-sea Processor's Association web site indicates that the larger catcher/processors in their organization that are currently operating employ 137 persons on average.

employment is not yet known. The inshore sector's allocation of the TAC was increased under the AFA so these processors are processing a larger percentage of the BSAI pollock allocation than they were prior to passage of the Act. Therefore, the total number of hours required to process the pollock allocation should have increased, resulting in either more jobs or longer employment for the workers that held those jobs.

Employment in the support sector of the pollock fishery has likely decreased as a result of the AFA. Removing vessels from the fleet was done to reduce costs. Lowering costs to the fishing industry results in less money being spent in support of their fishing operations. These cost savings to fishermen are revenue reductions to the support industries, and since the support sectors are doing less business they may require fewer employees.

Community Development Quota Program In the short period of time since the AFA has been implemented there is no doubt that the impact on the Bering Sea/Aleutian Island (BSAI) groundfish industry has been profound. Along with other industry members, CDQ groups have benefitted from the shift away from the "race for fish" Olympic style fishery towards a more rationalized approach that is more stable, has less vessels, higher recovery rates, reduced fixed costs, safer, and generally speaking has generated an increase in profit margins. CDQ groups have benefitted by realizing higher returns on their CDQ pollock quota and on their equity investments, many of which were made in 1999 and 2000.

AFA has provided the opportunity for CDQ groups to invest in top performing offshore industry participants. By 2000, all six CDQ groups had acquired equity shares in offshore pollock vessels. One group, Yukon Delta Fisheries Development Association has purchased an equity interest in the Golden Alaska LLC, which owns the Golden Alaska Mothership.

The primary benefit to the CDQ program from the AFA has been the increase in CDQ pollock quota from 7.5 percent to 10 percent of the BSAI Total Allowable Catch (TAC). Pollock quota represents over 80 percent of the CDQ program royalty stream. This was partially due to a higher overall pollock TAC and higher than normal pollock roe prices. In 1998 the average price for pollock CDQ quota was $236 per metric ton. In 2000, the average increased to over $292 per metric ton. All CDQ groups agreed that AFA played a role in higher pollock values primarily because of the shift away from the Olympic style fishery. CDQ group revenues and assets have increased significantly in 1999 and 2000. In terms of aggregate value, pollock CDQ royalties increased from approximately $20 million in 1998 to over $33 million in 2000.

Increasing the CDQ pollock quota from 7.5 percent to 10 percent has also raised the value of CDQ groups as business partners. This has enabled CDQ groups to have more bargaining power when negotiating royalty agreements and employment/training programs with industry partners. CDQ groups also indicated that the AFA, in some cases, has increased their leverage when negotiating royalty agreements for other species such as Pacific cod, sablefish, and crab.

Another major impact of AFA is the requirement that virtually all vessel-owning entities be at least 75 percent owned and controlled by U.S. citizens by October 1, 2001. This opportunity eventually enabled Coastal Villages Regional Fund and Central Bering Sea Fishermen's Association to complete the purchase of minority ownership interests in American Seafoods L.P. It also provided Yukon Delta Fisheries Development Association with a better negotiating position in their purchase of the Golden Alaska, LLC. Clearly the U.S Ownership requirements in AFA made these transactions much more attractive to American Seafoods and Golden Alaska, both of which were foreign owned and controlled. By the end of 2000, all six CDQ groups had acquired ownership interests in the pollock fishery.

The number of western Alaska residents employed in CDQ-related jobs increased from 1,350 in 1998 to 1,834 in 2000. Wages earned by CDQ residents increased during the same period from $8.2 million to $12.5 million. These increases are the result of many factors that would be difficult to attribute solely to the implementation of AFA. Most of the increases are in the seafood-processing sector; however, many groups have also seen more local residents take advantage of education programs and become permanent employees within the management of the organization.

As a result of the slower paced pollock fishery, western Alaska residents have been able to rely on a more structured schedule, which allows residents to take jobs in the fishery but continue to participate in important traditional subsistence activities back home. The slower pace of the pollock fishery has also allowed resident access to training opportunities onboard catcher vessels. The frenetic nature of the previous derby style fishery made it difficult to train new processing workers who frequently had to be trained while on the job.

The issue of safety is a big concern for the workforce in western Alaska. With AFA resulting in slower pollock fisheries and the ability for vessels to stand-down during bad weather, CDQ group recruiters are able to tout safer working conditions on offshore pollock vessels. This enables CDQ groups to more effectively recruit village residents, many of whom have never been outside of local river systems, to leave their communities and take advantage of potentially lucrative seafood processing and harvesting jobs.

In general AFA has increased revenues for CDQ groups, which has made more money available to fund various scholarship and endowment funds. All CDQ groups agreed that AFA has played a positive role in increasing educational and training opportunities for local residents. CDQ groups showed 1,177 people trained in 1998 and 1,128 trained in 2000. Training expenditures increased from $1.4 million in 1998 to $1.47 million in 2000.
According to the Aleutians East Borough, in part because of AFA and the increased quota to the onshore sector, Akutan has seen an increase in contributions to the local tax base from the Trident Seafood plant, which processes pollock and other species within Akutan city limits. The deliberate pace of the pollock-fishing activity has also acted to spread out the financial benefits from Akutan's Trident facility more evenly throughout the year. However, they also noted concern that the AFA will make it difficult for Bering Pacific Seafoods in False Pass or the proposed processing facility in St. George to process pollock if it is determined to be an economically feasible and desirable activity. Currently they would only be allowed to process fish from the CDQ fishery, which historically has been primarily processed off-shore.

State Fisheries AFA vessels typically do not participate in harvesting species managed by the State except for crab and scallops . Crab was discussed earlier, and only one AFA catcher vessel is allowed to participate in the scallop fishery, and its harvest of scallops is capped under the sideboard program. It is also interesting to note that the scallop fishery has formed a cooperative on their own. The majority of the remaining catcher vessel fleet does not participate in any of the State fisheries. The possible exceptions are the smallest catcher vessels in the AFA fleet. These vessels are often owned by Alaska residents. Vessels in this category may participate in some salmon or herring fisheries.

Pacific Coast Fisheries The Pacific Fishery Management Council (PFMC) issued a Federal Register notice[13] of a September 16, 1999 control date. The control date was passed by a unanimous vote of the Council, and it was intended to notify AFA vessels that they may be subject to regulations that do not currently exist and that their catch after September 16, 1999 may not be counted towards the qualification criteria necessary for the new fishing regulations that may be enacted. The control date was published to discourage AFA vessels from increasing effort in the Pacific Coast groundfish fisheries. The notice also signaled AFA vessels that the PFMC intends to begin development of regulations that would restrict participation of AFA vessels off the Pacific coast.

A control date of June 29, 2000 was issued in the Federal Register[14] for AFA motherships and catcher/processors. Motherships were noticed that they may be required to meet specific participation thresholds in the 1998 or 1999 regular Pacific whiting fisheries to be allowed to participate in the future. For catcher/processors the criterion being considered is that vessels must have been licensed to harvest groundfish in 1997, 1998, or 1999 (through September 16).

Rationalization of GOA Fisheries Rationalizing the BSAI pollock fishery, through the AFA, has resulted in members of other industry sectors to pursue similar programs for their fisheries. Some of these programs are currently under development by the Council and committees formed by the Council to develop options to better manage those fisheries. Some members of those fisheries want those programs to be implemented as soon as possible, while others would rather continue the status quo management measures.

Participants in GOA fisheries have requested that the Council develop measures similar to the AFA for all of the Gulf fisheries. Other members of the Gulf fishing community are not convinced that the AFA structure is the correct model for their area and are proposing alternative measures. It is likely that the Council will be working with these groups to develop a rational management scheme for the Gulf fishermen in the near future.

Rationalization of Other BSAI Groundfish Fisheries Other BSAI groundfish fisheries that are likely to move toward a more rational approach in the future are the Pacific cod and flatfish/Atka mackerel fleets. These fleets have been impacted by recent Steller sea lion management actions and would benefit from improved efficiencies.

Freezer longline vessels in the BSAI have been allocated their own portion of the fixed gear cod TAC. A follow-up amendment to that TAC allocation reduced the number of vessels licensed to harvest cod as a freezer longliner. Tighter definitions of who can harvest cod from the freezer longline apportionment will likely lead to the development of a more rational management system in the future.

Finally, the scallop fleet has implemented their own cooperative. This was done without going through the formal Council process. They were able to reach an agreement among themselves because of the limited number of scallop licenses that were issued.

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[13]Federal Register Notice of Proposed Rules, Vol. 64, No. 226, Wednesday, November 24, 1999

[14]Federal Register Notice of Proposed Rules, Vol. 65, No. 178, Wednesday, November 13, 2000

Rationalization of the BSAI Crab Fisheries With the support of Congress and the Council, members of the BSAI crab fleet have held several meetings to develop a long term rationalization program. The Council is currently working to develop an amendment package for management of the crab fishery. That package is focusing on an IFQ or coop approach and is scheduled for initial review at the April 2002 Council meeting. A preferred alternative could then be selected in June 2002; pending Congressional authorization the program could be finalized later in the year.

1.0 INTRODUCTION

The American Fisheries Act (AFA or the Act) was signed into law during the fall of 1998. The purpose of the AFA was to tighten U.S. ownership standards that have been exploited under the Anti-reflagging Act, and to provide the BSAI pollock fleet the opportunity to conduct their fishery in a more rational manner while protecting non-AFA participants in the other fisheries.

Congress anticipated that passage of the Act would result in substantial changes to the businesses and communities that rely on fishing, as well as the natural resources that support those fisheries. To provide a better understanding of the impacts resulting from the Act, Congress requested that the Council develop a report focused on specific changes brought about by the AFA. The congressional request was embedded within the language of the AFA. Section 213(d) of the AFA states that:

> "*...the North Pacific Council shall submit a report to the Secretary and to Congress on the implementation and effects of this Act, including the effects on fishery conservation and management, on bycatch levels, on fishing communities, on business and employment practices of participants in any fishery cooperatives, on the western Alaska community development quota program, on any fisheries outside of the authority of the North Pacific Council, and such other matters as the North Pacific Council deems appropriate.*"

This document will provide a review of the effects that the Act has had on various sectors of the North Pacific Fishing industry (a list of the participants is provided in Section 2.1.2.2) and those communities that have historically relied on the fisheries off Alaska's coast. A summary of the implementation and management of the AFA by (National Marine Fisheries Service) NMFS and the North Pacific Fishery Management Council (Council) is also included in this report.

The report is designed to be a history of what has happened in the fisheries since the AFA was passed. It is not intended to be rigorous scientific paper that would allow the reader to determine the economic costs and benefits of the program. Therefore, the paper is not designed to meet the standards of a formal Regulatory Impact Review that is required for implementing an amendment to the Council's Fishery Management Plans or regulations currently in place.

Congress had requested that the report be completed by October 1, 2000. However, because the inshore and mothership sectors did not begin operating under the cooperative system until January of 2000, the report was delayed so that information on the first full year of fishing could be presented.

1.1 History of Council Actions

Since the passage of the AFA in October 1998, NMFS and the Council have undertaken an extensive public process to develop the management program proposed under Amendments 61/61/13/8. Amendments 61/61/13/8 were developed and revised during the course of eleven Council meetings over the past two years and have been the subject of numerous additional public meetings held by the Council and NMFS to address specific aspects of the AFA. While the permanent management program proposed under Amendments 61/61/13/8 was under analysis and development by the Council and NMFS, the statutory deadlines in the AFA were met on an interim basis through several emergency interim rules. The following timeline provides a summary of the two-year public process through which NMFS and the Council developed Amendments 61/61/13/8.

November 1998**.** After the passage of the AFA in October 1998, the Council held a special meeting in November, 1998, in Anchorage to address among other things, the new requirements of the AFA and the effect of the AFA on the fisheries under the jurisdiction of the Council. The Council made various recommendations to NMFS regarding the regulation of cooperatives in the catcher/processor sector and the management of sideboards for AFA catcher/processors for the upcoming 1999 fishery and began the process of identifying issues and alternatives for upcoming AFA-related actions.

December 1998. At its December, 1998, meeting in Anchorage, the Council approved two emergency rules to implement required provisions of the AFA for the 1999 fishing year. The first emergency interim rule required two observers on all AFA-listed catcher/processors and established procedures for making inseason sideboard closures (64 FR 3435, January 22, 1999; extended at 64 FR 33425, June 23, 1999). The second emergency interim rule made several technical changes to the CDQ program regulations to accommodate the new requirements of the AFA (64 FR 3887, January 26, 1999; extended at 64 FR 34743, June 29, 1999). After extensive public testimony and input from the Council's Advisory Panel (AP) and Scientific and Statistical Committee (SSC) the Council identified a suite of alternatives for the management program that subsequently became known as Amendments 61/61/13/8.

February 1999. At its February, 1999, meeting in Anchorage, the Council finalized sideboard and AFA management measure alternatives with the intent that a draft analysis would be reviewed at the April 1999 meeting with a final decision scheduled for June 1999 to allow the Council to meet the July 1999 deadline imposed by the AFA for recommendation of sideboard measures. The Council also began preparation of a separate discussion paper to examine the structure of the inshore cooperative program. This separate analysis was in response to a proposal by a group of independent catcher vessel owners who advocated a change in the program to allow the formation of an independent vessel cooperative that would not be tied to a particular processor. A draft analysis was scheduled for review in June, 1999, with further discussion in October, 1999.

April 1999. At its April, 1999, meeting in Anchorage, the Council reviewed its draft analysis for Amendments 61/61/13/8, and received extensive public testimony regarding alternatives and issues that should be considered under Amendments 61/61/13/8. The Council directed staff to make various revisions and additions to the analysis with the intent that the amendment package would be before the Council for final action in June 1999. The Council also reviewed its discussion paper on the structure of the inshore cooperative program and the proposed independent catcher vessel cooperative and requested that a broader analysis be prepared for initial review at the October 1999 meeting. In addition, the Council formed an inshore cooperative implementation committee to advise NMFS on many of the technical issues related to the formation and management of inshore cooperatives.

May 1999. The Council's inshore cooperative implementation committee held a public meeting with NMFS on May 10-13 in Seattle to examine alternative management approaches for inshore catcher vessel cooperatives. The approach to implementing and managing inshore cooperatives developed at this meeting formed the basis of the inshore cooperative management program contained in the proposed rule.

June 1999. At its June, 1999, meeting in Kodiak the Council reviewed Amendments 61/61/13/8 and after extensive public testimony, approved a suite of AFA-related recommendations including restrictions on the formation and operation of cooperatives, harvesting sideboards for catcher/processors and catcher vessels, and catch weighing and monitoring requirements. However, the Council was unable to reach a decision on two AFA-related issues; groundfish processing sideboards and excessive processing share caps. To address these issues, the Council established an industry committee to further examine alternatives and work with state and Federal managers to resolve implementation issues with the intent that the Council would review the committee's recommendations in October 1999.

August 1999. The Council's processing sideboard industry committee held a public meeting in Seattle to examine alternatives for processing sideboards and excessive processing share caps. The committee was unable to reach a consensus and recommend an approach for implementing processing sideboard caps. However, the committee did develop some general recommendations for the Council and provided the Council with some requests for additional analysis and information.

October 1999. At its October, 1999, meeting in Seattle, the Council reviewed its analysis on the structure of the inshore cooperative program including the proposal to allow formation of independent catcher vessel cooperatives and received extensive public discussion on this issue. However, the Council voted to postpone action until February 2000 and requested further analysis on this issue. The Council also re-examined its June 1999 catcher vessel sideboard exemption recommendations and requested that NMFS delay implementation of these measures until the Council had the opportunity to analyze and discuss possible revisions to its recommended catcher vessel sideboard exemptions. The Council announced that it would be revising its sideboard exemption recommendations at its December 1999 meeting. Finally, the Council reviewed what had now become a separate analysis of groundfish processing sideboards and excessive processing share caps. After extensive discussion and public comment on this issue, the Council chose to expand and revise its analysis with intent to review the issue again in February 2000 with final action scheduled for June 2000.

December 1999. At its December, 1999, meeting in Anchorage, the Council approved two emergency interim rules to implement required provisions of the AFA for the 2000 fishing year. These measures were necessary to meet certain statutory deadlines in the AFA while the comprehensive suite of permanent management measures under Amendments 61/61/13/8 continued to undergo development, revision, and analysis by the Council and NMFS. The first emergency interim rule set out permit requirements for AFA vessels, processors, and cooperatives (65 FR 380, January 5, 2000; extended at 65 FR 39107, June 23, 2000). The second emergency interim emergency rule established sector allocations, cooperative regulations, sideboards, and catch monitoring requirements for the AFA fleets (65 FR 4520, January 28, 2000; extended at 65 FR 39107, June 23, 2000).

February 2000. At its February, 2000, meeting in Anchorage, the Council reviewed its revised analysis of groundfish processing sideboards and excessive share processing caps and requested analysis of several additional issues with the intent that the analysis would be reviewed again in June 2000. The Council postponed action on proposed changes to the structure of the inshore cooperative program and independent catcher vessel proposal until June 2000. Finally, at this meeting, the Council and NMFS decided it would be appropriate to expand the environmental assessment (EA) prepared for Amendments 61/61/13/8 into an EIS given the magnitude of the proposed management program to implement the AFA.

April 2000. At its April, 2000, meeting in Anchorage, the Council received extensive testimony from industry on several elements of Amendments 61/61/13/8. Catcher vessel owners requested that the Council consider revising several of its recommendations related to catcher vessel sideboards, retirement of vessels, and the formula for calculating inshore cooperative allocations. The Council requested preparation of a supplemental analysis of these issues for consideration in June 2000. The Council also received testimony from crab fishermen who opposed the crab processing caps implemented in 2000 through emergency interim rule. The Council announced its intent to examine alternatives for crab processing caps at its June 2000 meeting with final action on any changes scheduled for September 2000. In addition, the April Council meeting was used as a scoping meeting to solicit input from the public on issues and alternatives that should be addressed in the EIS under preparation for Amendments 61/61/13/8.

June 2000. At its June, 2000, meeting in Portland, the Council reviewed its analysis of proposed structural changes to the inshore cooperative program and recommended two changes related to retirement of vessels and allocation formulas that would supersede the measures set out in the AFA. These changes were incorporated as revisions to Amendments 61/61/13/8. The Council also examined the issue of groundfish processing sideboards and excessive processing share caps and voted to release its analysis for public review with intent to take final action on these measures at its October 2000 meeting. The Council's original intent was to include groundfish processing sideboards and excessive processing share caps in Amendments 61/61/13/8. However, due to the extensive additional analysis required for these two issues, the Council has decided not to address these issues under Amendments 61/61/13/8 but rather submit them as separate amendments at a later date.

September 2000. At its September, 2000, meeting in Anchorage the Council voted to add 1998 to revise the basis years used to calculate crab processing sideboard amounts by adding 1998 and giving it double-weight. In other words, 1995-1998 would be used to determine crab processing history with the 1998 year counting twice. This change represented the Council's final revision to Amendments 61/61/13/8 before official submission of the Amendments to the Secretary of Commerce for review and approval.

October 2000. At its October 2000 meeting in Sitka, Alaska, the Council considered the issues of BSAI pollock excessive processing share limits and groundfish processing sideboard limits. The Council adopted a 30 percent excessive processing share limit for BSAI pollock that would be applied using the same 10 percent entity rules set out in the AFA to define AFA entities for the purpose of the 17.5 percent excessive harvesting share limit contained in the AFA. This action represents the Council's final revision to Amendments 61/61/13/8 before official submission of the Amendments to the Secretary of Commerce for review and approval. With respect to groundfish processing sideboards, the Council took no action. The Council believed that placing non-pollock groundfish processing limits on AFA processors could have negative effects on markets for both AFA and non-AFA catcher vessels. In addition, the Council concluded that its suite of harvesting sideboard restrictions on AFA catcher vessels and catcher/processors also served to protect non-AFA processors in the BSAI which are primarily non-AFA catcher processors. Instead of imposing non-pollock processing limits on AFA processors, the Council indicated its intent to explore revisions to its Improved Retention/Improved Utilization (IR/IU) program that could provide a more level playing field for non-AFA catcher/processors.

April 2001. The Council reviewed an FMP amendment that would allow catcher vessels that are members of inshore cooperatives to lease their allocation to other members of the inshore cooperatives that are not a part of their cooperative. Both the catcher vessel's cooperative and the processor associated with that cooperative would need to give their permission before the lease could take place. The Council also received a report from industry on efforts to reduce salmon bycatch. There proposal includes industry imposed penalties for individuals that exceed bycatch standards. The Council commended them on their efforts to reduce bycatch and encouraged them to move forward with implementing the program.

June 2001. The Council approved the amendment to allow members of the inshore sector to lease their BSAI pollock allocation to members of another inshore cooperative. The Council also initiated analyses to study the impacts of allowing inshore floating processors to operate in more than one geographic location in the BSAI during a year. They also indicated they would start working, once again, on proposals to protect non-AFA processors from negative impacts which may result from the AFA.

1.2 Recent Congressional Actions

During October 2001 Congress eliminated the December 31, 2004 sunset date included in the original AFA and replaced it with a September 30, 2004 reauthorization date (Section 211, P.L. 107-77). The conference report language provided below indicates that Congress intends to have a thorough review of the program at that time.

> *"Sec. 211.—The conference agreement includes a new section 211 that amends section 213 of Public Law 105–277, the American Fisheries Act. This change would delete a sunset provision and instead authorize an annual appropriation, making permanent the prohibition on direct pollock fishing by non-American Fisheries Act(AFA) catcher/processors, even though this sector has some pre-AFA pollock history. The conferees understand that North Pacific groundfish fishermen and processors have agreed to work together on a proposal for consideration by the North Pacific Fishery Management Council for non-AFA catcher/processors to maximize utilization of their historic pollock catch. The conferees request that the appropriate Committees be notified immediately should the Secretary determine that the AFA statute precludes the Council from developing a regulation implementing the aforementioned agreement. The substitution of a September 30, 2004 reauthorization date for the original December 31, 2004 sunset date is intended to ensure a full Congressional review of the AFA within six years of its passage, as originally planned. This will also allow consideration of AFA issues during the reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act. Further, the conferees expect that any further authorization changes to the AFA will be addressed through the authorization committee process."*

The Council may request that the Secretary of Commerce enact an agreement which allows non-AFA catcher/processors to maximize their utilization of their pollock catch history, so long as the agreement does not recommend that they be allowed to participate in the directed pollock fishery. That is prohibited since Section 213(c)(1) of the AFA prohibits the Council from modifying Section 208 of the AFA. Recall that section 208(e)(21) defines the eligibility requirements for AFA catcher/processors not listed by name earlier in Section 208(e).

1.3 Timing of the Report

As might be conjectured from the meeting summaries above, implementing the AFA has consumed much of the Council's meeting time over the past two years. In total, developing documents and disseminating information has also consumed over 30 percent of the Council's staff time from November 1998 through October 2001. NMFS has also allocated substantial amounts of staff time to implementing the provisions outlined in the Act and related amendments approved by the Council and SOC. Even with all of the effort that has been expended ensuring that the AFA is successful, many of the impacts of the program are only now being realized. The catcher/processor sector of the pollock fishery has been operating under a cooperative system since the beginning of 1999. The mothership and inshore sectors only been operating under a cooperative system since January 2000. Therefore, for two of the three industry sectors we have just two years of experience on which to draw conclusions.

2.0 Impacts Resulting from Implementation of the AFA

This chapter is organized using the same topic headings that were requested in the AFA by Congress. The first section will provide information on conservation and management. Section two provides a summary of how bycatch rates have changed under the cooperative fishing system. Section three provides information on the various fishing communities. The fourth section discusses impacts resulting from the fleet's business and employment practices. Section five provides a discussion of the impacts on the CDQ communities. Section six provides a discussion of impacts on fisheries outside the Council's jurisdiction. Finally, the last section focuses on other issues not specifically requested in the language of the AFA, but that were thought to be of interest to Congress and the Secretary of Commerce.

2.1 Conservation and Management

2.1.1 Conservation Issues

One of the goals of the AFA was to change the structure of the BSAI pollock fisheries to allow for improved fishing practices. Less than optimal fishing practices often result from too much fishing effort on the grounds. As more harvesting capacity is added to a fishery, vessel operators are compelled to fish faster in order to maintain their historic share of the harvest. To maintain their share of a fishery fishermen may invest in additional equipment to harvest fish faster, which leads to other vessel owners upgrading their equipment to compete. This cycle leads vessel owners to invest more capital into the fishery than is needed to optimally harvest the available catch.

Fishing faster often increases bycatch or reduces utilization rates of the fish that are processed. The old adage "haste makes waste" could well be applied to pre-AFA BSAI pollock fishery. Slowing down the rate pollock is harvested and processed was one of the results of the AFA, especially in the non-roe seasons. Initial information indicates it has resulted in better fishing practices. However, other changes have occurred in the pollock fishery during this same time period, as a result of Steller sea lion regulations, making it difficult to separate AFA impacts from those caused by Steller sea lion management measures. Members of the BSAI pollock fishery have indicated that while the Steller sea lion management measures require spreading out the fishery in time and space, it was AFA that allowed members of the fishery to comply with those requirements in a rational manner. Members of the BSAI pollock fishery credit the AFA with lessening the negative impacts of Steller sea lion protection measures. Many small catcher vessel owners have indicated that without the AFA it would have been very difficult to compete with the larger vessels as the fishery was pushed farther offshore to avoid critical foraging areas and haul outs used by Steller sea lions.

The AFA mandated that two observers be onboard catcher/processors in the BSAI pollock fishery. Prior to implementation of the AFA, catcher/processors were required to carry one observer 100 percent of the time. Now they are required to carry two observers 100 percent of the time. That means there should be an observer collecting information on each haul. Before the AFA the observer would need to sleep and have time off from his/her duties. Therefore, some of the hauls were made without an observer present. Increased observer coverage should provide better information on the actual harvest.

The AFA also mandated use of scales to more accurately weigh fish in the catcher/processor sector. Prior to the use of scales on all vessels, NMFS would estimate the catch, in some cases, using product weights and converting those products back to whole fish using product recovery rates. In 2000, all weights in the official NMFS catch data set for catcher/processors and motherships came from observers/scales. Inshore data was still being derived from products that were produced. However, NMFS is moving forward with a standardized scale program for the inshore sector. Once implemented it will provide information similar to that collected from the catcher/processors and motherships.

Public reporting of vessel-by-vessel catch and bycatch and the peer pressure that is associated with having those reports made public is viewed by many persons involved in the fisheries as a positive result of the AFA. Members of the industry can use the information to work closely together to avoid areas of high bycatch. Persons monitoring the fishery from outside the industry know exactly what each vessel is harvesting. The openness of the reporting ensures that the public has access to how and by whom the resource is being used.

2.1.1.1 Fishing Practices

Background: The North Pacific Council manages the groundfish fisheries (including pollock) by setting a Total Allowable Catch (TAC), based on the estimated stock size of each species or species group. TACs have been set conservatively over the years, which has helped those species to remain healthy levels of abundance. For some species conservative management means that the TAC is set below the Allowable Biological Catch (ABC).

The Council has also implemented a self imposed 2 million metric ton annual harvest limit for the BSAI. Therefore even when the best biological information indicates that a groundfish harvest of more than 2 million metric tons would be acceptable, the NPFMC elects to never set TACs that will in aggregate exceed that number. These management practices have helped to ensure that no groundfish species are overfished, and that the groundfish stocks continue to remain healthy.

Steller Sea Lions: The AFA has created opportunities for the fleet to spread the BSAI pollock harvest out over both time and space. These actions were proposed in the "Authorization of BSAI Atka mackerel, and BSAI and GOA walleye pollock under the FMP between 1999-2002: Biological Opinion 1" (BiOp1) and the "Revised Final Reasonable and Prudent Alternatives" (RFRPA) which were designed to help aid the recovery of the Steller sea lion population in the North Pacific. Implementation of the AFA likely helped the fleet in their effort to comply with the mandates imposed in the BiOp1 and RFRPA by providing BSAI pollock fleet greater flexibility in their fishing operations by eliminating the need to race to harvest BSAI pollock. However, without additional regulations to those included in the AFA, the fleet would not have had incentives to fish outside of Steller sea lion critical habitat or spread out the times of year when pollock are harvested. The fleet would be inclined to decrease catch rates to levels where the vessels and plants can operate most efficiently. From a processor's view point it would make little sense to slow the harvest of pollock to levels where their plants could not operate in an efficient and profitable manner; from a vessel's view point it would not make sense to harvest only partial loads or increase the time between deliveries for vessels. Variable operating costs increase as the season is lengthened. For example, it may cost vessels an additional month of insurance premiums and increase food costs to keep the crew on board for longer times. Increased waiting times would like make the crew unhappy because they would realize they could be making the same amount of money in less time. What does make sense is for vessel and processor owners to use less equipment more efficiently to harvest and process their BSAI pollock allocation. The AFA has provided the tools and incentives to remove the least efficient equipment from the fishery, which has reduced overall harvesting and processing capacity.

Implementation of the AFA alone would not have created economic incentives for the fleet to meet the mandates required to protect the Steller sea lion population. Without additional regulations such as those contained in the BiOp1, economic incentives would have still existed for the fleet to fish inside Steller sea lion critical habitat. The primary reason they would continue to want to fish inside sea lion area is to reduce fishing costs (assuming pollock catch rates are the same or greater inside those areas). Sea lion protection areas are closer to the plants in Unalaska and Akutan and therefore less time and fuel would be required when fishing in those areas. The fleet would also prefer to harvest more pollock during the roe season when the females bearing prime roe are most valuable.

Overall, the AFA has provided the tools and incentives for the BSAI pollock fleet to improve their fishing practices by ending the race for pollock. However, the AFA creates few incentives for fishermen to modify their behavior when it results in increased costs or lowers the overall revenues they could derive from harvesting a set quota.

Safety: The AFA pollock fleet has indicated that the fishery is much safer now that it is operating under a cooperative system. Vessel owners and skippers no longer feel compelled to fish during bad weather. They know that under the AFA cooperative style of management their allotment of pollock will be waiting for them when the weather improves. Though no actual data exists regarding improvements in safety, members of the pollock industry have noted it during public testimony. The CDQ communities have also noted that the safer working conditions made it is easier to recruit Western Alaska residents to work onboard the at-sea vessels (see Section 2.5.1). This has helped to provide acceptable jobs for the residents of communities with limited employment opportunities.

Cooperation Within the Fleet and With NMFS: Participants in the BSAI pollock fishery have stated that they have never worked more closely with each other and with NMFS than they are currently doing under the cooperative management system. Cooperatives and inter-cooperative agreements have required that industry work together to solve problems that arise in their industry. They also must police each other to ensure that the bylaws included in the cooperative and inter-cooperative agreements are adhered to by the parties which signed the contract. These mechanisms developed by industry to manage their fishery have worked very well. According to persons intimately involved with the program they have worked better and been more effective than was anticipated.

Quota Management: Fishing practices under the cooperative structure have allowed more precise harvests of the pollock TAC to occur without exceeding the total allowable catch. Prior to the AFA NMFS would shut the fishery down when they predicted the TAC would be harvested. Now it is up to the cooperatives and the individuals within each cooperative to ensure their portion of the harvest allotment is not exceeded. If an individual does over harvest their allowance, then they are subject to fines and sanctions by their cooperative. If a cooperative exceeds their allocation, they are subject to sanctions imposed by NMFS. Both sets of sanctions have been set a levels that encourage compliance by the fleet.

2.1.1.2 Utilization of the Pollock Harvested

Higher utilization rates have resulted from fishermen and processors being guaranteed a specific percentage of the BSAI pollock fishery. Since the approximate amount of pollock going into a processing plant is known at the beginning of the year, the only way to increase production is to better utilize the fish being delivered. Slowing the rate pollock can be harvested while still allowing vessels and processors to maintain their share of the fishery has resulted in more product being produced. This occurred because the factories can operate slower, taking more care to extract useable products from the fish that are harvested.

Members of the AFA are keenly aware of the importance of utilization rates in terms of their own bottom line. Processors that are able to generate more product from a given amount of pollock would likely[15] increase their revenues. This also translates to increased profits for the firm, if they are able to produce that product for less than the cost of production.

Great emphasis was placed on better utilization of the pollock resource during the Inshore/Offshore-3 allocation debate. Therefore processors have been pleased to report the increases in utilization rates that have occurred under the AFA. According to information presented in the catcher/processors's cooperative report, utilization rates in their sector increased about 26 percent from 1998 to 1999 (the overall utilization rate in 1999 was just over 25 percent) and about 35 percent from 1998 to 2000 (the overall utilization rate in 2000 was just over 27 percent). This indicates that companies in the catcher/processor sector are indeed utilizing more of the resource that they have been given the right to harvest under the AFA. It also indicates that the factory managers of these processing facilities are becoming even more important members of the company's staff than they were prior to implementation of the AFA.

The inshore sector also increased their utilization rate of BSAI pollock after cooperatives were implemented. Members of the inshore sector increased their utilization rate about 2.3 percent from 1999 to 2000. Their overall utilization rates increased from 35.8 percent in 1999 to 36.6 percent in 2000 (their utilization rate was about the same in 1998 as it was in 1999). While their increase was not as great as that seen in the catcher/processor sector, it still indicates they were able to produce about 4,000 mt more product in 2000 relative to what they would have produced had their utilization rate remained at the 1999 levels.

The mothership sector was able to produce a total of 26,302 mt of products from the 98,284 mt of pollock they harvested in 2000. That equates to a utilization rate of 26.8 percent. In 1999 the mothership sector was able to produce 18,053 mt of product from a harvest of 86,601 mt of pollock.

[15]Revenues would not increase if the greater supply of products on the market caused the price to drop to a level where the increased production did not offset the decrease in price.

Calculating the utilization rate indicates that the 20.8 percent of the harvested pollock was converted to saleable products. The mothership sector's pollock utilization rate in 1998 (20.7 percent) was almost exactly the same as it was 1999. Comparing the utilization rates before cooperatives were in place in 1999 and after they were implemented shows that utilization rates increased by almost 29 percent.

Table 2.1.1-1 shows a summary of the impacts of the AFA on pollock utilization rates. It shows that each sector was able to increase their utilization of the pollock they harvested after cooperatives were implemented. Utilization rate increases were most dramatic in the mothership and catcher/processor sectors. However, the inshore sector still produces the most product from each ton of pollock harvested.

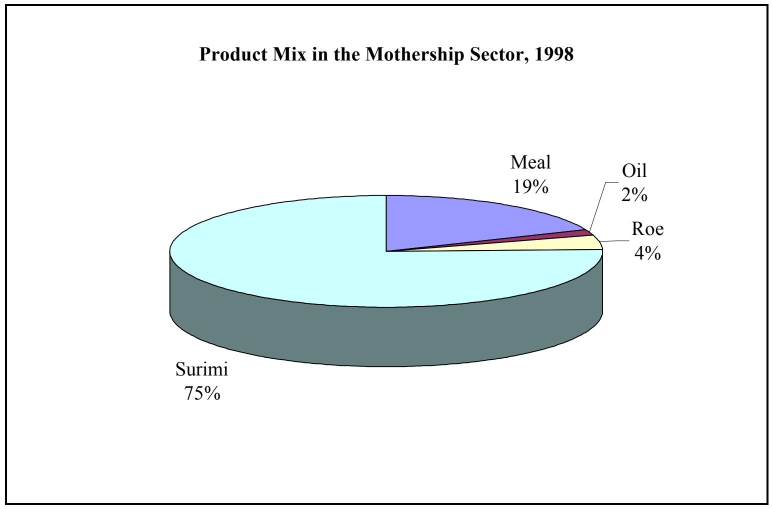
Table 2.1.1-1. Pollock utilization rate (percent) by sector from 1998-2000.

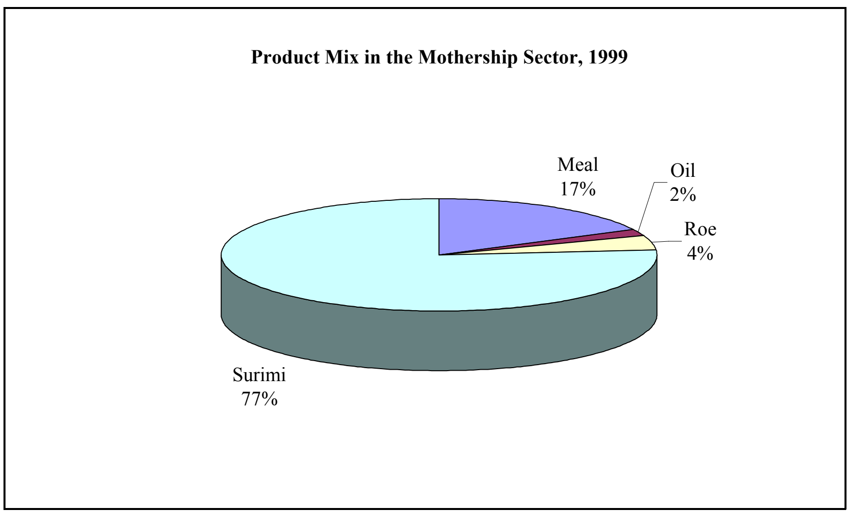
Sector	1998	1999	2000
Catcher/Processor	20.3%	**25.5%**	**27.5%**
Inshore	35.7%	35.8%	**36.6%**
Mothership	20.7%	20.8%	**26.8%**

Source: NMFS Weekly Production Reports and Blend data from 1998-2000.
Note 1: Bolded numbers represent years when that sector was operating under a cooperative structure.
Note 2: In 2000, all of the Blend data for the catcher/processor and mothership sectors was derived from Observer data, while about 98 percent of the inshore catch was calculated by converting product weights (Weekly Production Report data) to round weight.

A summary of the product mix produced by each of the AFA processing sectors are provided below. The pie charts show the percentage of each product made from pollock during the years 1998-2000. Those charts indicate that the inshore sector produces the most diverse suite of product while the mothership sector concentrates its efforts on surimi, roe, meal, and oil.

Figure 2.1.1-1 Mothership Product Mix, 1998-2000





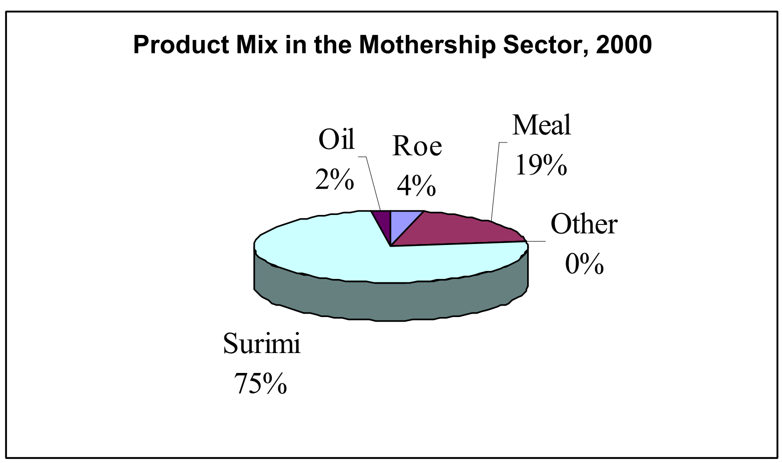
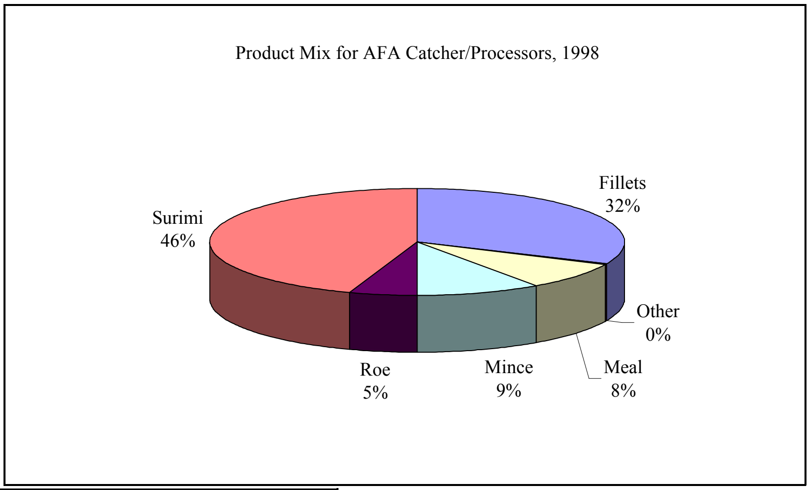
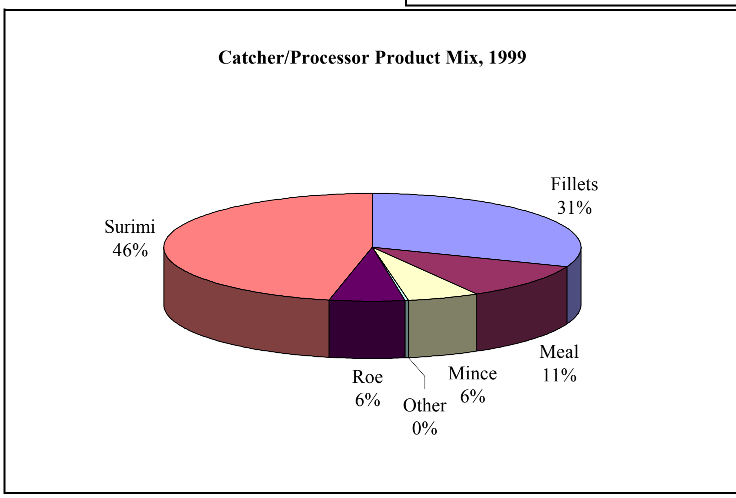


Figure 2.1.1.-2 Catcher/Processor Production, 1998-2000





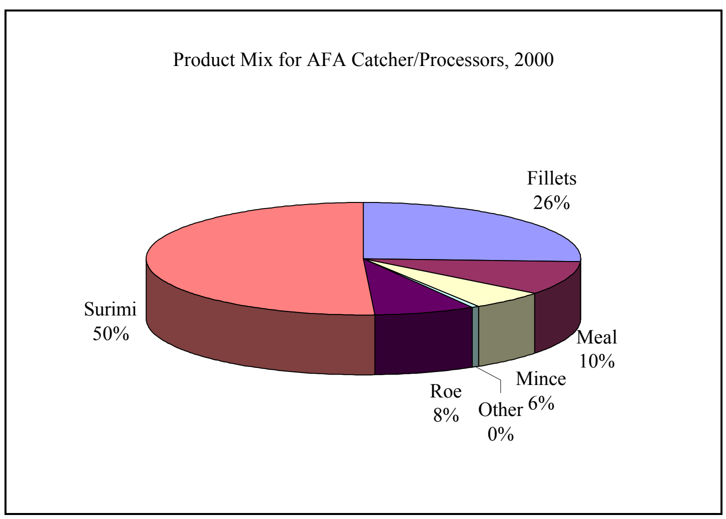
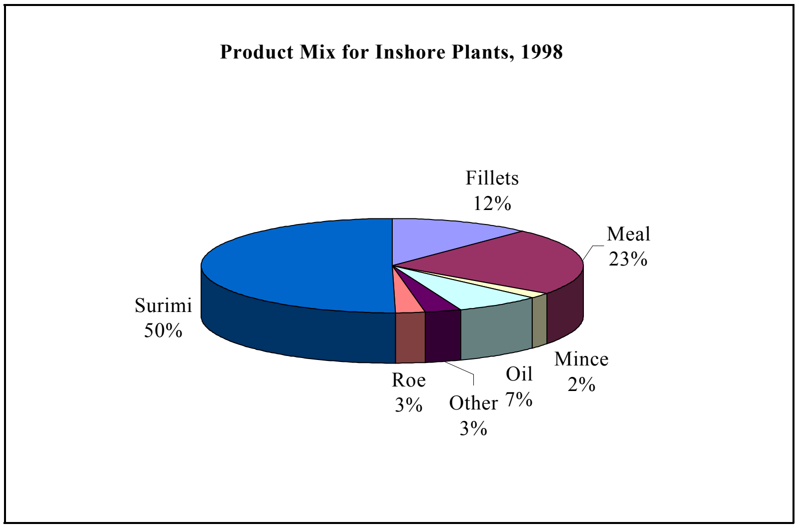
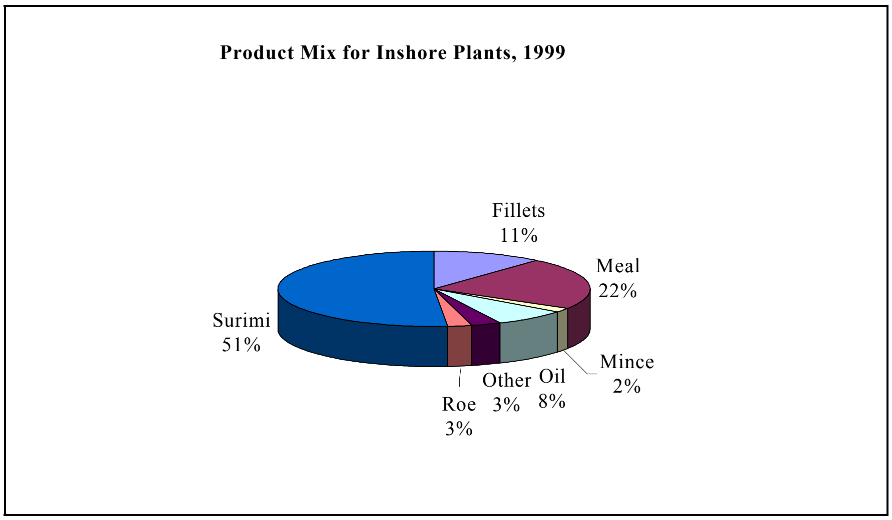
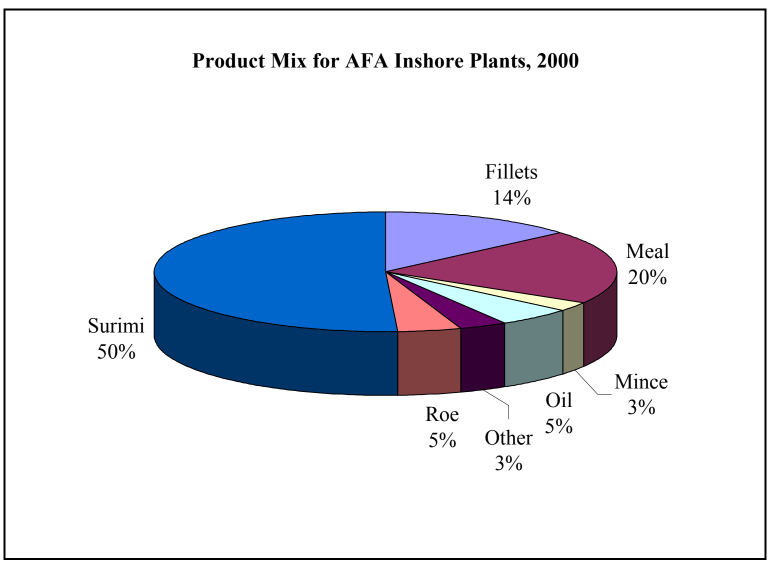


Figure 2.1.1-3 Inshore Processing Plant Production, 1998-2000







2.1.2 Management Issues

Implementation of the AFA has been a major project for the Council and NMFS over the past 2 ½ years. The Council has made recommendations to the U.S. Secretary of Commerce (SOC) on several issues that were left to their discretion. A summary of the actions taken at various Council meetings was provided in Section 1.1. Developing the regulations necessary to implement cooperatives in the inshore and mothership sectors by the start of the 2000 fishing season was a monumental undertaking. However, the Council and NMFS were able to implement those regulations on schedule through the emergency rule process. Since January 2000 all sectors of the BSAI pollock fishery have been operating under cooperatives, and according to most reports, the cooperative fishing structure made possible through the passage of the AFA has been successful.

2.1.2.1 U.S. Ownership Standards

Increasing the percentage of U.S. ownership in vessels operating in the territorial waters of the U.S. was a primary goal of the AFA. Implementation of the U.S. ownership standards prescribed in the AFA is the responsibility of the Maritime Administration (MarAd) within the U.S. Department of Transportation. MarAd was directed to amend section 12102(c) of Title 46 to require 75 percent U.S. ownership of vessels participating in fishery operations in U.S. waters. Final regulations implementing this portion of the AFA were published in the Federal Register on July 19, 2000, for vessels greater than or equal to 100 feet in registered length. The new ownership standards outlined in the AFA will go into effect on October 1, 2001. Vessels that do not meet that standard have reorganized their ownership, are in the process of reorganizing their ownership, or are applying for an exemption because of a conflict with an existing law, treaty, or regulation. A list of the vessels that have applied for exemptions to the AFA are provided on the MarAd web site (http://www.marad.dot.gov/afa.html).

Information obtained from MarAd indicates that a total of 24 vessels have applied for an exemption to the 75 percent U.S. ownership requirements because of treaties the vessel owner's country has with the U.S. Those vessels are listed in Table 2.1.2-1. The first column of the table shows the number of vessel owners. Note that some of the owners control more than one vessel. The second and third columns are the vessel's name and official number, respectively. The fourth column lists the country with whom the U.S. has a treaty and which the owners are petitioning under. The fifth column lists the interest the country has in the vessel. Finally, the last column provides comments on the status of the petition or other relevant information.

To date, a total of six vessel's petitions have been ruled on by MarAd. Those six vessels have been allowed to continue to participate in the fishery under their current ownership. However, when their ownership changes they will be required to sell to U.S. owners that meet the AFA requirements.

An example of a company that restructured their ownership is American Seafoods. American Seafoods Company was the owner of several catcher/processor vessels prior to passage of the AFA. American Seafoods was owned by Aker RGI of Norway. Passage of the AFA required that American Seafoods restructure their ownership. The vessels previously owned by American Seafoods are now primarily owned by Centre Partners Management LLC. Other groups holding interest in the company are Coastal Villages Regional Fund[16] (22 percent), Central Bering Sea Fishermen's Association (4 percent), and Aker RGI (less than 10 percent). Other companies also were require to restructure their ownership to comply with the new requirements. Currently all pollock vessels fishing in Alaska waters must meet the mandated ownership standards.

Table 2.1.2-1 Petitions filed with MarAd for relief from the 75 percent U.S. ownership requirements.

AFA - Section 213(g) Petitions					
Owner	**Vessel Name**	**Off. No.**	**Treaty**	**Owner/Mort.**	**Comments**
1	PACIFIC KNIGHT	561771	Japan	Owner	Determination Issued
2	ARCTIC STORM	903511	Korea	Owner	Determination Issued
	SEA STORM	628959	Korea	Owner	Determination Issued
	ARCTIC FJORD	940866	Korea	Manager	Determination Issued
	NEAHKAHNIE	599534	Korea	Manager	Determination Issued
3	ARICA	550139	Denmark	Owner	Determination Issued
4	ALASKA ROSE	610984	Japan	Owner/Mort.	
	BERING ROSE	624325	Japan	Owner/Mort.	
	SEA WOLF	609823	Japan	Owner/Mort.	
5	FRONTIER SPIRIT	951441	Japan	Owner/Mort.	
	FRONTIER MARINER	951440	Japan	Owner/Mort.	
	FRONTIER EXPLORER	975015	Japan	Owner/Mort.	
6	GREAT PACIFIC	608458	Japan	Owner/Mort.	
7	MORNING STAR	610393	Japan	Owner/Mort.	
8	PACIFIC PRINCE	697280	Japan	Guarantee	Mortgagee Issues will not be ruled on in light of amendments to AFA
	CAITLAN ANN	960836	Japan	Guarantee	Vessel < 100' (USCG must rule on vessels less than 100')
9	DEFENDER	554030	Japan	Mortgagee	Mortgagee Issues will not be ruled on in light of amendments to AFA
10	WESTWARD I	615165	Japan	Owner	(Maruha Vessels)
	VIKING	565017	Japan	Owner	
	CHELSEA K	976753	Japan	Owner	
	ALASKAN COMMAND	599383	Japan	Owner	
11	SEAFISHER	575587	Japan	Owner/Mort.	H&G - Outside Pollock
12	PAPADO II	536161	Japan	Mortgagee	Mortgagee Issues will not be ruled on in light of amendments to AFA
	ALYESKA	560237	Japan	Mortgagee	Mortgagee Issues will not be ruled on in light of amendments to AFA

Source: U.S. Department of Transportation - Maritime Administration

[16]Additional information on the impacts of the new ownership requirements are reported in the CDQ section of this report (Section 2.5)

2.1.2.2 Non-AFA Catcher/Processors That Had Recent History in the BSAI Pollock Fishery

Some members of the H&G fleet (non-AFA catcher/processors) had participated in the directed BSAI pollock fishery from 1996-98, but did not meet the AFA's landings requirement defined in Section 208(e)(21). By not meeting the Section 208(e)(21) landing requirement, these vessels are currently prohibited from participating in the directed BSAI pollock fishery. The owners of some of these vessels feel that provision is too restrictive because it defines eligibility based on a single year of participation and sets a tonnage minimum that exceeds the participation levels of a typical H&G catcher/processor vessel. They also feel that they were not compensated for their losses in the directed pollock fishery as were the nine retired catcher/processors, and that they continue to suffer financial losses because of their lack of access to the directed pollock fishery.

Owners of the excluded catcher/processors also feel that the October 2001 AFA amendment (Section 211, P.L. 107-77) compounded the adverse effects of section 208(e)(21) by removing the AFA's sunset provision. Removal of the sunset clause made the program permanent, but scheduled a review of the program for September 30, 2004. The conference report (H.Rpt. 107-278) accompanying that legislation stated that it makes

> *"permanent the prohibition on directed pollock fishing by non-American Fisheries Act (AFA) catcher/processors, even though this sector has some pre-AFA pollock history. The conferees understand that North Pacific groundfish fishermen and processors have agreed to work together on a proposal for consideration by the North Pacific Fishery Management Council for non-AFA catcher/processors to maximize utilization of their historic pollock catch. The conferees request that the appropriate Committees be notified immediately should the Secretary determine that the AFA statute precludes the Council from developing a regulation implementing the aforementioned agreement*."

Since the sunset provision was removed from the AFA the Council has concurred that they have no authority to alter the list of AFA eligible vessels, because the eligibility criterion is contained in one of the two sections of the Act that the Council is prohibited from modifying. However, the Council has gone on record stating that they may consider other ways to allow maximum utilization of the pollock history of non-AFA catcher/processors.

2.1.2.3 AFA Participants

Limiting participation in the BSAI pollock harvesting and processing sectors was also included as part of the AFA. Currently there are eight inshore processing plants eligible to participate in the BSAI pollock fishery (only seven are currently associated with a cooperative), 21 catcher/processors, three motherships, and 112 catcher vessels. Each of these vessels and cooperatives (processors) are reported by their name and the sector they belong to in Appendix I.

2.1.2.4 AFA Vessels That Did Not Fish BSAI Pollock in 2000.

2.1.2.4.1 Ineligible Catcher/processors

Nine catcher/processors were permanently removed from all fisheries conducted in U.S. waters through the AFA buyout provision. Those vessels have not been operating in any fishery since the end of 1998, pursuant to the requirements of the AFA. Eight of those vessels have been scrapped in a San Francisco shipyard. A list of the vessels removed from the fishery are:

1). American Empress (United States Official Number 942347)
2). Pacific Scout (United States Official Number 934772)
3). Pacific Explorer (United States Official Number 942592)
4). Pacific Navigator (United States Official Number 592204)
5). Victoria Ann (United States Official Number 592207)
6). Elizabeth Ann (United States Official Number 534721)
7). Christina Ann (United States Official Number 653045)
8). Rebecca Ann (United States Official Number 592205)
9). Browns Point (United States Official Number 587440)

The nine ineligible catcher/processors accounted for approximately 10 percent of the overall BSAI pollock harvest prior to implementation of the AFA. That is about two-thirds of the amount of BSAI pollock given up by the catcher/processor sector relative to the amount it harvested in the years prior to the AFA, though about the same percentage of the BSAI pollock fishery, relative to what they would have been allocated under the proposed Inshore/Offshore-3 amendment package. The value of 10 percent of the BSAI pollock TAC was used to determine the compensation that the inshore sector would pay[17] the owners of the ineligible catcher/processors for the right to harvest that additional 10 percent of the pollock TAC. In total, two companies in the catcher/processor sector were paid $95 million by the U.S. government to retire the above vessels or to relinquish part of their BSAI pollock catch history to the inshore sector. Seventy-five million dollars was in the form of a loan and the remaining $20 million was a Federal grant and did not require repayment.

2.1.2.4.2 Catcher/Processors Not Participating in 2000

A total of 20 catcher/processors are listed by name in the AFA as being eligible to participate in harvesting and processing BSAI pollock. One additional Head and Gut (H&G) catcher/processor meet the requirements in the AFA that allows them to harvest and process up to 2,000 mt of BSAI pollock annually and was active in the 2000 fishery.

During the 2000 fishing season only 14 of the 20 listed catcher/processors actively participated in the BSAI pollock fishery. The owners of Alaska Trawl Fisheries, Inc. sold their harvest rights to other members of the Pollock Conservation Cooperative[18] (PCC) prior to the 2000 fishing season. Their vessel, the Endurance, has left the fishery and reflagged to another country. Under the AFA, it has been made permanently ineligible for a fishery endorsement, so it cannot participate in the

[17] The Inshore sector is required to pay a fee of 0.6 cents for each pound of pollock they harvest in order to repay the $75 million federal loan that was part of the AFA.

[18] PCC is comprised of all of the owners of the listed catcher/processors in the AFA.

BSAI pollock fishery or any other U.S. fishery which requires a fishery endorsement. Two of the five remaining vessels that did not participate (the American Dynasty and Katie Ann) are owned by American Seafoods. They were able to harvest their allocation of 162,017 mt plus an additional 8,010 mt of BSAI pollock with their five remaining vessels. The three remaining vessels (American Enterprise, Seattle Enterprise, and US Enterprise) are owned by Trident Seafoods. Trident harvested 61,200 mt of BSAI pollock with their two active catcher/processors and leased the balance (5,515 mt) of their allocation.

In summary, 6 of the 20 listed catcher/processors in the AFA did not participate in the 2000 BSAI pollock fishery. One of those vessels was permanently removed from the fishery because it has reflagged to another country and thereby been rendered permanently ineligible under the AFA for a fishery endorsement. The other five vessels were idled by their owners because their remaining vessels were able to harvest their assigned pollock more efficiently. These vessels might be considered excess capacity at the TAC levels set for the 2000 fishery. Should the TAC increase these vessels may reenter the fishery to ensure the quota is harvested. However, these vessels are also being kept available in case the AFA is not renewed or the cooperative system of management fails. If either should occur, the vessel owners would want to have the idled vessels ready to reenter an open access style fishery.

In addition to the nine catcher/processors listed as ineligible in the AFA, there were also other catcher/processors that are excluded from participating in the BSAI pollock fishery. The owner of two such vessels (American No. 1 and U.S. Intrepid) submitted comments to the Council indicating that despite their histories in the pollock fishery they were excluded from future participation. They also indicated that they had made major investments to purchase and retrofit a vessel, anticipating continued access to the BSAI pollock fishery. Since they were prevented from participating in the fishery, they estimated that they had lost "millions of dollars in unharvested pollock."

The owners of these vessels feel that the legislative process by which vessels were qualified under the AFA was "patently unfair", and that the process was driven by a few self-appointed industry representatives. They continue to feel as though they were "ejected" from the fishery by their competitors, and that they would have been allowed to participate in the fishery if the management had been left to the Council process.

2.1.2.4.3 Catcher Vessels not Participating in 2000

Catcher/Processor Sector. Seven catcher vessels were assigned harvest rights for 8.5 percent of the catcher/processor sector's BSAI pollock allocation under the AFA. In 2000, the seven catcher vessels leased all of their harvest rights back to the catcher/processors and did not fish for BSAI pollock. Two of those vessels were owned by the same entities that own catcher/processors. The other five vessels have no know ownership links with the catcher/processors. All seven catcher vessel owners presumably leased/transferred their pollock rights because it was more profitable to do so than harvesting the pollock themselves. There is no information available to the Council on the compensation that was paid to the catcher vessels for the leased pollock.

Mothership Sector. Two of the 20 catcher vessels in the mothership sector leased all of their BSAI pollock harvest rights in 2000 and did not participate in that fishery. The two vessels were the Margaret Lyn and the Pacific Alliance. The Margaret Lyn did participate in the open access portion of the inshore BSAI pollock fishery in 2000. That vessel has joined the Akutan Cooperative in 2001.

The Pacific Alliance has been replaced for the 2001 fishery, under the AFA standards, by the Morning Star (USCG number 618797).

Inshore Sector. The structure of inshore cooperatives has made it more difficult for vessels to retire from the fishery than it was for vessels in other sectors. However, changes have been made to the inshore cooperative structure which determines the cooperative vessels qualify to join. Those changes will be discussed in more detail later in this document. Because of the uncertainty surrounding those changes several vessels have leased only part of their harvest rights to ensure that they would qualify for their cooperative in 2001. Four inshore catcher vessels leased all of their BSAI harvest rights in 2000. Those vessels were the Pacific Monarch (Unisea), Hickory Wind (Westward), Messiah (Unalaska), and Miss Amy (Unalaska). Several other vessels leased most of their harvest rights, but elected to make at least one pollock landing to ensure they remained eligible for their cooperative. Now that the inshore cooperative structure has been modified so that vessels are not required to harvest pollock each year to remain eligible for their cooperative, it is likely that more vessels will elect to lease all of their inshore sector harvest rights in the future.

2.1.2.5 Repayment of Federal Loan by the Inshore Sector

Paying the 0.6 cent fee for each pound of pollock harvested to repay the federal loan should not have been a substantial economic burden for the inshore catcher vessels (and likely processors) during 2000. Preliminary information from the 2000 Commercial Operators Annual Reports (COAR) collected by the State of Alaska indicate that the pollock prices paid to catcher vessels in the inshore sector were approximately 11.5 cents per pound on average over the entire year. That is price is about 2 to 3 cents per pound higher than catcher vessels have been paid in the recent past[19]. Therefore, the higher prices received during 2000 and the increased allocation should more than off-set the fee charged to repay the loan. Lower ex-vessel prices, should they exist in the future, will create more of an economic hardship for the inshore sector as catcher vessels and processors repay the 0.6 cents per pound fee.

The higher price in 2000 was reportedly a result of a strong roe market during the spring fishery. According to public testimony provided at the June 2000 Council meeting, pollock ex-vessel prices were reported to range between 15 and 20 cents per pound during the roe season. Whether that market will be as strong next year is unknown. Preliminary reports, based on discussions with members of the fishing industry, have suggested that ex-vessel prices during the non-roe season (summer and fall seasons) were 7.8 to 8.5 cents per pound. The difference between the roe and non-roe season prices reflect the strong market for roe while to the market for other products such as surimi and fillets was less robust. Overall, prices reported in a less formal manner seem to comport fairly well with the ex-vessel pollock price of 11.5 cents per pound that was reported in the COAR data for the entire season.

If ex-vessel pollock prices are lower in future years it will create more of an economic hardship for the inshore catcher vessels as they and their processors pay the 0.6 cents per pound fee that is collected to repay the $75 million Federal loan. However, since we do not have cost information to

[19]NMFS. 1999. Economic status of the Groundfish Fisheries off Alaska, 1998. Hiatt, T. and Terry, J. Reports ex-vessel BSAI polllock prices from 1993-97 to range from 6.6 cents to 9.8 cents per pound. A 1998 inshore price of 8.5 cents per pound was used in BSAI FMP Amendment 51. The preliminary 1999 ex-vessel price was reported to be less than 10 cents per pound based on personal communication with members of industry.

determine the profitability of firms in the industry, it is not possible to determine the ex-vessel price where firms would be projected to break-even.

2.1.2.6 Protecting Other Fishery Participants

Protecting participants in other U.S. fisheries, that could be negatively impacted by the BSAI pollock fleet, is required by the AFA. Development of these protective measures can be divided into two basic sections. The first section describes protections for persons/companies that harvest fish and are not part of the BSAI pollock fleet as defined in the AFA, and the second section is protection of non-AFA fish processors.

2.1.2.6.1 Catcher Processor Sideboard Restrictions

Protections the Council has developed for non-AFA fish harvesters differ depending on whether they are applied to AFA catcher vessels or catcher/processors. Some of the restrictions were specified in the Act, while others were to be developed by the Council. Most of the restrictions specified in the AFA apply to the catcher/processor sector.

Gulf of Alaska: The 20 catcher/processors listed in the Act are restricted from harvesting any GOA groundfish. These vessels have had limited participation in the GOA since the implementation of the Inshore/Offshore program in 1992. Inshore/Offshore restrictions limited processing by catcher/processors and motherships defined as offshore[20] to only 10 percent of the GOA Pacific cod allocation. No allocation of GOA pollock was make available to the offshore sector. Given that the Pacific cod allocation only covered bycatch needs in other fisheries, the two primary GOA target fisheries for larger trawl catcher/processors were closed with the passage of Inshore/Offshore. However, members of that fleet have had limited participation in other GOA fisheries since 1992.

Since the AFA catcher/processors have had relatively small annual catches (between 2,000 and 3,500 mt) in the GOA during the 1995-97 time period, primarily as a result of Inshore/Offshore regulations, forgoing their rights to the GOA fisheries should not impose a substantial economic burden to the members of that fleet. It will also ensure that the catch previously taken by these vessels will be available to the non-AFA fleet. The AFA catcher vessels will be subject to their own harvest restrictions in the GOA.

With the passage of the AFA, catcher/processors will forgo the economic benefits they generated from fishing in the GOA for the right to become a member of the BSAI pollock fleet. Because the catcher/processors were willing to forgo the opportunity to fish the GOA, we may assume that they were able to increase revenues sufficiently from fishing in the BSAI under the AFA cooperative structure to make up for the revenues which are lost by not fishing in the GOA.

Bering Sea/Aleutian Islands: AFA catcher/processors are allowed to harvest no more than their traditional catch levels in the BSAI groundfish fisheries. Defining traditional catch and management of that harvest was left up to the Council and NMFS to determine. The Council originally defined traditional catch as the total catch in the non-pollock target fisheries of the 29 active and ineligible

[20] Offshore processors are those that process less than 126 mt of round fish during a week and are less than 125 feet in length. All of the AFA catcher/processors and motherships were considered offshore under Inshore/Offshore regulations.

catcher/processors listed in the Act from 1995-97 divided by the total catch of all vessels fishing from the available TAC those years. This original definition of traditional catch has been used for the 1999, 2000, and 2001 fishing seasons. Therefore, NMFS has based the sideboard cap amounts on the total catch of the 29 catcher/processors[21] in groundfish fisheries other than pollock and managed the fisheries using directed fishery closures. In the case of Atka mackerel, the sideboard amounts (expressed as a percentage of TAC) are in the language of the AFA.

The Council amended their traditional harvest definition in 1999 to be the retained catch in 1995-97 from all fisheries by the 29 active and ineligible catcher/processors listed in the Act relative to the total catch. Including only the catcher/processor's retained catch would exclude credit for any fish that were discarded. Excluding discards from their catch history substantially reduced the size of the sideboard caps for some species that were traditionally discarded when compared to total catch. Preliminary data from Amendment 61 to the BSAI indicated that the yellowfin sole cap would be reduced about 20 percent, Pacific cod less than 20 percent, rock sole about 65 percent, and other flatfish about 70 percent. This magnitude of change may result in NMFS not opening some of these fisheries at the beginning of the year, when they might have under the original definition.

BSAI harvesting caps were sufficient to open directed fisheries for the Pacific cod, Atka mackerel, yellowfin sole, rock sole, and the other flatfish species fishery in 2000. The quantity of these species available to the catcher/processors, the maximum percent of the TAC they are allowed to catch, and their total catch are reported in Table 2.1.2-2 All other BSAI species remained closed to directed fishing by the AFA catcher/processor fleet throughout 2000. A summary of the catcher/processor sector's fishing activities, in 2000, is included in their annual cooperative report. A copy of that report is attached to this document as Appendix II.

The AFA catcher/processors harvested only a portion of their 2000 BSAI Pacific cod cap and did not reach their halibut PSC cap. At the end of the year only about 33 percent of their 11,034 mt BSAI Pacific cod cap was harvested. The fleet did not catch the entire sideboard amount in part because the nine vessels that were retired from the fleet were the primary cod vessels. The remaining AFA vessels did not harvest the entire cod sideboard in the spring when cod are schooled for spawning. Once the cod disperse the catch rates drop and the fishery is no longer economical for large scale catcher/processor operations. So after May, the AFA and non-AFA catcher/processors seldom find cod in large enough concentrations to warrant a directed fishery. Therefore, much of the cod that was remaining after the spring fishery was rolled over from the trawl sector to the fixed gear allocation in the fall. It is expected based on public testimony that the three catcher/processor companies with history in the cod fishery intend to harvest more of their cod sideboards once they are more comfortable with the pollock fishery under cooperatives. Increases in the pollock TAC during 2000 and 2001 have likely caused the transition period to be longer than it would have otherwise. These vessel owners weighed the benefits of retaining the history of nine retired vessels when they were negotiating the AFA. Since that catch was important in the negotiations it should be expected that they would intend to utilize that history to increase revenues in the future.

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[21]This is the original definition of historic catch by the catcher/processor fleet used by the Council. NMFS will begin using the revised definition passed by the Council the year following formal approval by the SOC and implementation of those regulations.

About 35 percent of both the yellowfin sole and rock sole sideboard caps were harvested by the AFA catcher/processors in 2000. The NMFS Blend data report that only 460 mt of rock sole was taken by AFA qualified vessels in a directed rock sole fishery during the first four months of the year. The remainder of the rock sole harvest came as bycatch in other fisheries. The yellowfin sole was primarily harvested during the month of April. In April the AFA catcher/processors harvested about 7,650 mt of yellowfin sole. That equates to over 90 percent of the yellowfin sole harvested by AFA catcher/processors for the year.

In 1999, the catcher/processor sector also left substantial amounts of directed fishery species unharvested. For example, 3,558 mt of cod remained unharvested under their sideboard cap, meaning they harvested about 65 percent of the available cod sideboard amount. They also only harvested about 28 percent of their yellowfin sole cap, 13 percent of the rock sole cap, and about 8 percent of their other flatfish cap. As shown in Table 2.1.2-2, they harvested slightly less of their cod cap in 2000 and more of their flatfish caps.

Table 2.1.2 - 2. BSAI sideboard caps for the AFA catcher/processor fleet in 2000.

Species	Percent of TAC	2000 Harvest Cap (mt)	Harvest Amount (mt)	Percent of Cap Harvested
Pacific Cod	26.30%	11,034	3,602	32.64%
Atka Mackerel (West. AI)	20.00%	2,747	0	0.00%
Atka Mackerel (Cent. AI)	11.50%	1,314	3	0.23%
Yellowfin Sole	23.30%	24,412	8,589	35.18%
Rock Sole	7.30%	8,362	2,943	35.19%
Other Flatfish	13.10%	9,333	841	9.01%

Source: January 28, 2000 Federal Register Notice Titled "Fisheries of the Exclusive Economic Zone off Alaska; Emergency Interim Rule to the Implement Major Provisions of the American Fisheries Act" and the Pollock Conservation Cooperative's annual report.

As can be seen from the table above, no AFA catcher/processor sideboard caps were exceeded for species where there was a directed fishery in 2000. They did however exceed four sideboard limits for species that could only be taken as bycatch. Those species are squid, other red rockfish in the Bering Sea, other rockfish in the Bering Sea, and Pacific Ocean Perch in the Bering Sea. The sideboard levels were exceeded for these species because the overall catch limit was based on the AFA catcher/processors' historic catch in target fisheries other than pollock. These species are traditionally taken in higher quantities in the pollock fishery compared to the harvest of those species in all other BSAI target fisheries. Therefore, excluding the catcher/processors bycatch of these species while targeting pollock did not generate a sideboard cap sufficient to cover their current bycatch needs in the pollock fishery. Had the catcher/processor's sideboards been based on total catch in all fisheries, they would have likely stayed within all of their sideboard caps.

A complete listing of the catcher/processor sideboard caps and harvest amounts can be found in the PCC report to the Council that is included under Appendix II. From that report it can be seen that the catcher/processor sector stayed well within their sideboard caps for most species

One reason that the catcher/processor sector was able to stay well within their sideboard caps is that the catch history from the nine retired catcher/processors was included in the calculation of the caps (see catch by fishery in Appendix III). Those nine vessels had traditionally participated in fisheries other than pollock in addition their main pollock fishery. Including their catch history tended to increase the overall sideboard levels, especially for species which they had targeted in the past. Had the history of the nine catcher/processors not been included the sideboard caps, those caps would have been much smaller for species like Pacific cod.

The sideboard caps seem to be working well in terms of constraining the overall harvest of the AFA catcher/processors. However, the H&G[22] factory trawl sector has expressed concern over the impacts the AFA catcher/processors might have on their sector in terms of when the AFA sector harvests flatfish and the impacts they may have on their markets. Members of the H&G industry remain concerned that additional effort in the flatfish fisheries, yellowfin sole for example, will increase production of those species to a point where the market will be saturated[23] and the price will drop to a level that will not sustain their fleet. The relation between quantity and first wholesale prices cannot be estimated with data that are currently available, therefore it is not possible to document the validity of those concerns in a quantitative manner. The members of this fleet are thought to operate on relatively small profit margins. Minimal decreases in first wholesale price may completely eliminate any profits they are generating in the fishery. Decreases in prices would be expected if their markets are as sensitive to increases in quantity as they reported in the past.

2.1.2.6.2 Catcher Vessels Sideboard Restrictions

NMFS uses the same management approach for catcher vessel sideboard caps as they did catcher/processors. NMFS will close directed fisheries to AFA-listed catcher vessels when sideboard amounts are inadequate to support a directed fishery. The closures will be timed so that adequate amounts of the species are available for bycatch needs in other directed fisheries. This is done to help ensure that no sideboard caps are exceeded. NMFS will only open directed fishing for a species when adequate sideboard amounts exist at the start of the fishing year to cover both the bycatch needs of that species in other fisheries and the directed fishery harvests. Basically what NMFS will do is determine the bycatch of each species that is required in all of the catcher vessel target fisheries. Then they will subtract that amount from the available sideboard cap. The remainder is the amount of a species the catcher vessel sector could use in a directed fishery. If that amount is too small to manage as a target fishery, NMFS would issue a closure notice at the beginning of the year and directed fishing for that species would not open.

Current observer coverage levels combined with a system of electronic catcher vessel delivery reports should be adequate to monitor the aggregate activity of AFA-listed catcher vessels. However, NMFS will require that all fish be weighed on a certified scale capable of storing fish weights for confirmation by independent observers or other enforcement agents to ensure accurate

[22]The Head and Gut (H&G) sector is comprised of catcher/processors that are generally considerably smaller than pollock catcher/processors and generally produce H&G and round products. There are approximately 28 vessels in that sector primarily harvesting flatfish, Atka mackerel, and Pacific cod.

[23]Some members of the H&G sector have indicated in public comment that this could occur even when the entire TAC is not harvested.

reporting at the time fish are off-loaded. This paper trail is deemed necessary to verify that the sideboard caps and directed pollock harvests are not being exceeded by the AFA fleet.

In 2000, NMFS prohibited directed fishing by non-exempt AFA catcher vessels for the species in the specified areas set out in Table 2.1.2-3. The Regional Administrator made this determination based on the AFA catcher vessel sideboard amounts listed in Tables 2.1.2-4 and 2.1.2-5. The decision was based on the criteria that the sideboard amounts were necessary as incidental catch to support other anticipated groundfish fisheries for the 2000 fishing year. Therefore, in accordance with § 679.20(d)(1)(iii) of the FMP, only directed fisheries other than those listed in Table 2.1.2-3 were opened on January 20.

Table 2.1.2-3. AFA catcher vessel sideboard directed fishing closures[1].

Species	Area	Gear
Pacific cod	BSAI	fixed, jig
Sablefish	BSAI	trawl
Atka mackerel	BSAI	all
Greenland Turbot	BSAI	all
Arrowtooth flounder	BSAI	all
Pacific ocean perch	BSAI	all
Other red rockfish	BSAI	all
Sharpchin/northern rockfish	AI	all
Shortraker/rougheye rockfish	AI	all
Other rockfish	BSAI	all
Squid	BSAI	all
Other species	BSAI	all
Pollock	620, 630 outside Shelikof Strait	all
Pollock[2]	610, Shelikof Strait	all
Pacific cod	GOA	all
Deep water flatfish	GOA	all
Flathead sole	GOA	all
Shallow water flatfish	GOA	all
Arrowtooth flounder	GOA	all
Sablefish	GOA	trawl
Pacific ocean perch	GOA	all
Shortraker/rougheye rockfish	GOA	all
Other rockfish	GOA	all
Northern rockfish	GOA	all
Demersal shelf rockfish	GOA	all
Thornyhead rockfish	GOA	all
Other species	GOA	all

[1]Maximum retainable percentages may be found in Tables 10 and 11 to 50 CFR part 679. Note: These closures took effect 1/20/2000 except for pollock in area 610 and in the Shelikof Strait conservation zone which closes, 1/21/2000 and last through, 12/31.

Table 2.1.2-4. Interim 2000 BSAI AFA Catcher Vessel (CV) Sideboard Cap Amounts (mt).

Species	Fishery by Area /Season/ Proc./ Gear	Ratio 95-97 AFA CV catch to TAC	2000 Initial TAC	2000 CV Sideboard Caps
Pacific cod	BSAI			
	jig	0.0000	3,571	0
	fixed gear			
	Jan 1 - Apr 30	0.0006	65,000	39
	May 1 - Aug 31	0.0006	0	0
	Sept 1 – Dec 31	0.0006	26,048	16
	trawl gear			
	C/V	0.7291	41,953	30,588
	C/P	0.0000	41,953	0
Sablefish	BS trawl gear	0.0006	624	0
	AI trawl gear	0.0608	515	31
Atka mackerel	Eastern AI/BS			
	jig gear	0.0031	152	0
	other gear			
	Jan 1 - Apr 15	0.0031	7,509	23
	Sept 1 - Nov 1	0.0031	7,509	23
	Central AI			
	Jan - Apr 15	0.0001	11,424	1
	inside CH	0.0001	7,654	1
	Sept 1 - Nov 1	0.0001	11,424	1
	inside CH	0.0001	7,654	1
	Western AI			
	Jan - Apr 15	0.0000	13,736	0
	inside CH	0.0000	7,829	0
	Sept 1 - Nov 1	0.0000	13,726	0
	inside CH	0.0000	7,829	0
Yellowfin sole	BSAI	0.0712	104,773	7,460
Rock sole	BSAI	0.0255	114,546	2,921
Greenland Turbot	BS	0.0405	5,764	233
	AI	0.0021	2,839	6
Arrowtooth	BSAI	0.0583	111,350	6,492
Other flatfish	BSAI	0.0558	71,242	3,975
POP	BS	0.1018	2,210	225
	Eastern AI	0.0048	2,886	14
	Central AI	0.0011	3,247	4
	Western AI	0.0000	5,245	0
Other red rockfish	BS	0.0280	165	5
Sharpchin/northern	AI	0.0015	4,764	7
Shortraker/roughey	AI	0.0011	819	1
Other rockfish	BS	0.0379	314	12
	AI	0.0031	583	2
Squid	BSAI	0.3885	1,675	651
Other species	BSAI	0.0283	26,656	754

Source: NMFS January 28, 2000 Federal Register Notice. Emergency interim rule to implement major provisions of the American Fisheries Act.

Table 2.1.2-5. Interim 2000 GOA AFA Catcher Vessel (CV) Sideboard Caps (mt).

Species	Apportionments by Area/ Season/ Processor/ Gear	Ratio of 1995-97 AFA CV catch to 1995-1997 TAC	2000 TAC	2000 CV sideboards
Pollock[1]	A Season (W/C areas only)			
	Shelikof Strait	0.1672	14,366	2,402
	Shumagin (610)	0.6238	5,465	3,409
	Chirikof (620) (outside Shelikof)	0.1262	3,352	410
	Kodiak (630) (outside Shelikof)	0.1984	4,278	849
	B Season (W/C areas only)			
	Shelikof Strait	0.1672	7,183	1,201
	Shumagin (610)	0.6238	2,732	1,704
	Chirikof (620) (outside Shelikof)	0.1262	1,626	205
	Kodiak (630) (outside Shelikof)	0.1984	2,139	424
	C Season (W/C areas only)			
	Shumagin (610)	0.6238	11,506	7,177
	Chirikof (620)	0.1262	6,847	864
	Kodiak (630)	0.1984	9,008	1,787
	D Season (W/C areas only)			
	Shumagin (610)	0.6238	9,588	5,981
	Chirikof (620)	0.1262	5,706	720
	Kodiak (630)	0.1984	7,506	1,489
	Annual			
	E. GOA	0.3642	8,800	3,205
Pacific cod[2]	W inshore	0.1310	14,850	1,945
	offshore	0.1026	1,650	169
	C inshore	0.0542	24,538	1,330
	offshore	0.0721	2,726	197
	E inshore	0.0000	2,887	0
	offshore	0.0078	321	3
Flatfish	W	0.0000	280	
deep-water	C	0.0620	2,710	168
	E	0.0021	2,310	5
Rex sole	W	0.0043	1,230	5
	C	0.0117	5,660	66
	E	0.0026	2,550	7
Flathead sole	W	0.0129	2,000	26
	C	0.0097	5,000	49
	E	0.0008	2,060	2
Flatfish	W	0.0260	4,500	117
shallow-water	C	0.0420	12,950	544
	E	0.0106	1,950	21
Arrowtooth	W	0.0047	5,000	24
Flounder	C	0.0206	25,000	515
	E	0.0016	5,000	8
Sablefish	W. trawl gear	0.0023	368	1
	C. trawl gear	0.0384	1,146	44
	E .trawl gear	0.0236	288	7
Pacific Ocean	W	0.0051	1,240	6
Perch	C	0.0692	9,240	639
	E	0.0225	2,540	57
Shortraker/	W	0.0000	210	0
Rougheye	C	0.0145	930	13
	E	0.0105	590	6

Species	Apportionments by Area/ Season/ Processor/ Gear	Ratio of 1995-97 AFA CV catch to 1995-1997 TAC	2000 TAC	2000 CV sideboards
Other Rockfish	W	0.0000	20	0
	C	0.0410	740	3
	E	0.0000	4,140	0
Northern rockfish	W	0.0005	630	0
	C	0.0307	4,490	138
Pelagic shelf	W	0.0004	550	0
Rockfish	C	0.0000	4,480	0
	E	0.0066	1,350	9
Demersal shelf Rock.fish	SEO	0.0000	340	0
Thornyhead	Gulfwide	0.0118	2,360	28
Atka mackerel	Gulfwide	0.0443	600	27
Other species	Gulfwide	0.0067	14,215	95

[1]Pollock sideboard limits are based on pollock harvest restrictions implemented under the emergency interim rule published concurrently with this action that implements Steller sea lion RPA measures for the BSAI and GOA pollock fisheries.
[2]Sideboard harvest limits for Pacific cod are based on the initial TAC.

Catcher vessel sideboard amounts are based on their total catch in non-pollock target fisheries during the 1995-97 time period. If the sideboard calculations are based on retained catch in all fisheries in the future, it will have less impact on the catcher vessels than catcher/processors. The impact is smaller on catcher vessels because they deliver unsorted cod ends to motherships and catcher/processors. All of the catch that is harvested is considered retained for those vessels. Any discards that occur are assigned to the processor. Fishtickets are the official source of data when catcher vessels deliver inshore. Fishtickets are filed by the processor, and it has been determined that processors cannot be responsible knowing or reporting discards which occur at-sea. Information on at-sea discards is only reported on a voluntary basis. For these reasons there is often little difference in the official data between retained and total catch in the catcher vessel sector. Because there is little difference in the official data, the size of the sideboards do not change appreciably when they are based on either retained or total catch.

NMFS sets a single catcher vessel sideboard cap for each species. That amount is then made available to all AFA catcher vessels on a seasonal basis at the beginning of the year. After NMFS sets the cap, the cooperatives then divide the allocation among themselves and finally each cooperative determines how their portion of the cap is divided among member vessels. Because three separate catcher vessel sectors share the same sideboard cap, an inter-cooperative agreement was implemented to divide the cap among cooperatives and set penalties for exceeding the cap. The inter-cooperative agreement has reportedly worked very well in coordinating the efforts of the various cooperatives in which catcher vessels are members.

Appendix II includes information presented by the cooperatives on individual vessel harvests in 2000. Those reports indicate that the catcher vessel sector stayed within the sideboard caps that were set. Therefore, no enforcement actions against the cooperative were taken by the State of Alaska or the NMFS. The Westward cooperative report does indicate that the fishing vessel Hickory Wind leased their BSAI pollock quota and fished in excess of their historic levels in the GOA. Because that vessel had a GOA sideboard exemption, that practice is not allowed. The possibility of cooperative sanctions against the vessel owner are being considered.

Catch records from the official State and Federal data cannot be reported on a vessel by vessel basis due to confidentiality requirements of the State of Alaska and the NMFS. Because that information cannot legally be disclosed, the reader is referred to the public information reported by each of the cooperatives in Appendix II. Those reports provide a excellent summary of the participation and harvests of each vessel in the cooperative.

Catcher Vessel Sideboard Concerns: Concerns that have been expressed regarding the effectiveness of the AFA catcher vessel sideboards have primarily come from a group of cod fishermen that use trawl gear. These fishermen have testified before the Council that they have been negatively impacted by pollock fishermen entering the cod fishery earlier than they have traditionally. Their testimony indicates that the increased competition has increased safety concerns by making the fishing grounds more crowded and forcing the cod vessels to fish in winter weather conditions in which they normally would not fish. The dedicated cod vessels tend to be smaller that the pollock catcher vessels. Therefore, the cod fishermen have indicated that they are sometimes forced to leave an area when larger boats are present. They are also less able to safely contend with harsh winter weather in the BSAI.

The cod fishermen and the AFA catcher vessel fleet have been working together to resolve some these problems. If they are unable to reach a solution among themselves, the Council has indicated that they would intervene.

2.1.2.6.3 Catcher/Processor PSC Sideboard Caps

Paragraph 679.63(a)(2) of the emergency interim rule implementing AFA sideboards established a formula for calculating PSC cap amounts for unrestricted[24] AFA catcher/processors. These amounts are equivalent to the percentage of prohibited species bycatch limits harvested in the 1995 through 1997 non-pollock groundfish fisheries by the eligible AFA catcher/processors listed in subsection 208(e) and the ineligible catcher/processors listed in section 209 of the AFA. Prohibited species amounts harvested by these catcher/processors in BSAI non-pollock groundfish fisheries from 1995 through 1997 are shown in Table 2.1.2-5. These data were used to calculate the relative amount of prohibited species catch harvested by pollock catcher/processors. The percentage of PSC catch to total PSC available was then used to determine the percentage PSC harvested by the AFA catcher/processors. That percentage was then multiplied by the PSC available in the current year to determine the prohibited species harvest limits for unrestricted AFA catcher/processors.

PSC that is caught by unrestricted AFA catcher/processors participating in any non-pollock BSAI groundfish fishery shall accrue against the 2000 PSC limits for the listed catcher/processors. This ensures that catcher/processors, except the one restricted catcher/processor participating in the BSAI pollock fishery, have their PSC applied against the cap. If a PSC cap is reached, paragraph 679.21(e)(3)(v) of the emergency interim rule implementing sideboards provides NMFS the authority to close directed fishing for non-pollock groundfish for unrestricted AFA catcher/processors once a 2000 PSC limitation listed in Table 2.1.2-6 is reached. Therefore the restricted catcher/processor can continue fishing after a PSC cap is reached.

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[24]The term unrestricted catcher/processor refers to the 20 AFA catcher/processors that are currently eligible to fish pollock in the BSAI. It does not include the nine ineligible catcher/processors or the one catcher/processor (the Ocean Peace) that is limited to 2,000 mt of BSAI pollock harvest annually in the directed fishery.

The ratio column in Table 2.1.2-6 shows the maximum percent of each PSC species allotment that catcher/processors will be allowed to harvest. PSC sideboards are also caps so there is no guarantee that catcher/processors will be allowed to catch that amount. If the overall PSC cap is taken before they reach the cap both the AFA and non-AFA fleets will be issued closure notices and be required to stop fishing.

Crab or halibut PSC that is caught by unrestricted AFA catcher/processors while fishing for pollock will accrue against the bycatch allowances annually specified for either the mid-water pollock or the pollock/Atka mackerel/other species fishery categories. This is the traditional method of accounting for PSC bycatch in the pollock fishery.

Table 2.1.2-6. Unrestricted AFA Catcher/Processor Prohibited Species Sideboard Amounts

PSC species	1995-97 PSC catch	1995-97 PSC Total	Ratio	2000 PSC Limits	2000 C/P PSC Caps	2000 C/P PSC Harvest
Halibut mortality	955	11,325	0.084	3,400	286 mt	**80 mt**
Red king crab	3,098	473,750	0.007	89,725	628 crab	**4,040 crab**
C. opilio	2,323,731	15,139,178	0.153	4,023,750	615,634 crab	**40,317 crab**
C. bairdi:						
Zone 1	385,978	2,750,000	0.140	767,750	107,485 crab	**17,637 crab**
Zone 2	406,860	8,100,000	0.050	2,331,000	116,550 crab	**3,435 crab**

Source: NMFS Emergency Rule and PCC report to the Council.

The data in Table 2.1.2-6 shows that the AFA catcher/processors will be capped at 8.4 percent of the halibut PSC allotment, 15.3 percent of the opilio PSC, 14.0 percent of the bairdi in Zone 1, and 5.0 percent of the Zone 2 bairdi crab. Recall that these percentages are caps and not allocations. If the overall PSC cap is reached before the AFA fleet harvests their cap amount the entire fleet will be required to stop fishing, so the AFA catcher/processor fleet is not guaranteed the PSC amounts listed in Table 2.1.2-6.

Table 2.1.2-6 shows that the catcher/processors were able to stay well under all of their PSC caps except for red king crab. Catcher/processors were allowed to take up to 286 mt of halibut mortality and they only used 80 mt. In percentage terms, they only used about 28 percent of the cap that was available to them. They also used only about 7 percent of the opilio crab, 16 percent of the Zone 1 bairdi, and 2 percent of the Zone 2 bairdi crab cap available to them. The red king crab cap was exceeded 3,412 crab. That equates to an overage of about 550 percent. However, because the cap was so low, the percentage is somewhat misleading in terms of the magnitude of the problem.

2.1.2.6.4 Catcher Vessel PSC Sideboard Restrictions

Prohibited species catch (PSC) is being monitored based on the rates of observed vessels and not the actual amount of PSC taken by each catcher vessel. Those rates are then extrapolated and applied to unobserved catcher vessels fishing for the same species in the same area, as is currently being done for all fisheries where observer coverage is less than 100 percent. This system does not observe each haul and therefore may introduce discrepancies between a vessel's log book report and the official NMFS PSC estimate. However, without drastically increasing observer requirements, this is the only independent system of determining PSC amounts that NMFS feels is adequate to properly monitor the caps.

Paragraph 679.63(b) of the emergency interim rule implementing the AFA established a formula for calculating PSC sideboards for AFA catcher vessels. PSC bycatch limits for halibut in the BSAI and GOA, and each crab species in the BSAI, for which a trawl bycatch limit has been established, were defined. Those sideboard limits are expressed as a percentage equal to the ratio of aggregate retained groundfish catch by AFA catcher vessels in each PSC target category from 1995 through 1997 relative to the retained catch of all vessels in that fishery from 1995 through 1997. These amounts are listed in Tables 2.1.2-7 and 2.1.2-8.

Halibut and crab caught by AFA catcher vessels participating in any non-pollock groundfish fishery listed in Tables 2.1.2-7 or 2.1.2-8 will accrue against the 2000 PSC limits for the AFA catcher vessels. Paragraphs 679.21(d)(8) and (e)(3)(v) of the emergency interim rule implementing sideboards provide authority to close directed fishing for groundfish (except BSAI pollock) by AFA catcher vessels once a 2000 PSC limitation listed in Table 2.1.2-7 for the BSAI or Table 2.1.2-8 for the GOA is reached. PSC that is harvested by AFA catcher vessels while fishing for pollock in the BSAI will accrue against either the midwater pollock or the pollock/Atka mackerel/other species fishery categories.

PSC sideboard tables for the catcher vessel sector are more complicated than they were for the catcher/ processors. For catcher vessels, the PSC caps are broken down by target fishery and seasons. Summing the PSC fishery and seasonal caps in the table yields a total catcher vessel cap of 1,217 mt tons of halibut, 20,537 red king crab, 664,788 opilio crab, 219,285 bairdi crab in Zone 1, and 490,084 bairdi crab in Zone 2.

When the catcher vessel and catcher/processor caps are combined they represent the maximum amount of a PSC species that can be harvested by the AFA fleet. Halibut PSC limits are most likely to cause fisheries to be closed, since when other PSC species catch limits are reached they close specific areas to fishing, but they do not close the entire fishery. Combined the AFA trawl fleet was allowed to harvest 1,503 mt of halibut, in 2000. The total halibut PSC apportionment for the trawl fishery was 3,675 mt, so the AFA is allowed to take up to 40.9 percent of the total. This guarantees that the non-AFA trawl fleet will have access to a minimum of 59.1 percent of the halibut PSC allotment in the BSAI. Freezing the AFA fleet's halibut PSC cap at 40.9 percent of the total could provide benefits to the non-AFA fleet. Because halibut often closes directed flatfish fisheries and sometimes cod fisheries access to halibut PSC often determines how much of the directed fishery can be harvested.

Overall the AFA catcher vessels appear to have used about 733 mt of their halibut mortality cap in 2000. This is well below the 1,217 mt of halibut mortality that the sector was allotted under their sideboard cap. In total, they used about 60 percent of the BSAI halibut mortality that was available.

Most of the halibut usage occurred in the BSAI cod fishery, where the inshore sector came closer to using the 887 mt of halibut mortality that was assigned to that fishery. The cooperative reports indicate that about 675 mt (76 percent) of the halibut mortality cap was used by AFA catcher vessels in the BSAI cod fishery.

Only AFA catcher vessels have a PSC sideboard cap in the GOA. Catcher/processors are not allowed to harvest groundfish in the GOA under the AFA, so they do not require PSC sideboards. The AFA catcher vessel fleet has been capped at 410 mt of halibut in the GOA. That equates to 20.5 percent of the GOA trawl apportionment of halibut. Therefore, the non-AFA trawl fleet is assured of at least 79.5 percent of the halibut PSC allocation in the GOA.

The PSC sideboard limits should enable the non-AFA fleet to continue harvesting their traditional levels of groundfish in the GOA and BSAI. Exemptions to the sideboards were also included in the Council's recommendations. Those exemptions may allow the AFA to increase their harvest of groundfish, and they will be discussed in the next section of this document.

Table 2.1.2-7. AFA Catcher Vessel BSAI Prohibited Species Catch (PSC) Sideboard Amounts[1]

PSC species	Target fishery category[2] And season	Ratio of 1995-1997 AFA CV retained catch to total retained catch	2000 PSC Limit	2000 PSC Sideboard Cap
Halibut	**Pacific cod trawl**	0.6183	1,434	887
	Pacific cod fixed	0.0022	748	2
	Yellowfin sole			
	Jan. 20 - Mar. 31	0.1144	262	30
	Apr. 1 - May 20	0.1144	195	22
	May 21 – July 3	0.1144	49	6
	July 4 - Dec. 31	0.1144	380	43
	Rock sole/Flathead sole/Oth. flat			
	Jan. 20 - Mar. 31	0.2841	448	127
	Apr. 1 - July 3	0.2841	163	46
	July 4 - Dec. 31	0.2841	167	47
	Turbot/Arrowtooth/Sablefish	0.2327	0	0
	Rockfish	0.0245	70	2
	Pollock/Atka mackerel/Other sp.	0.0227	232	5
Red King Crab	**Pacific cod**	0.6183	11,655	7,207
Zone 1	**Yellowfin sole**	0.1144	11,655	1,333
	Rock sole/Flathead sole/Oth. flat	0.2841	42,090	11,958
	Pollock/Atka mackerel/Other sp.	0.0227	1,711	39
C. opilio	**Pacific cod**	0.6183	123,530	76,383
COBLZ[3,4]	**Yellowfin sole**	0.1144	2,876,578	329,067
	Rock sole/Flathead sole/Oth. flat	0.2841	869,934	247,154
	Pollock/Atka mackerel/Other sp.	0.0227	71,622	1,626
	Rockfish[5]	0.0245	41,043	1,006
	Turbot/Arrowtooth/Sablefish	0.2327	41,043	9,552
C. bairdi	**Pacific cod**	0.6183	158,547	98,035
Zone 1	**Yellowfin sole**	0.1144	288,750	33,032
	Rock sole/Flathead sole/Oth. flat	0.2841	309,326	87,882
	Pollock/Atka mackerel/Other sp.	0.0227	14,818	336
C. bairdi	**Pacific cod**	0.6183	279,041	172,540
Zone 2	**Yellowfin sole**	0.1144	1,514,683	173,272
	Rock sole/Flathead sole/Oth. flat	0.2841	504,894	143,444
	Pollock/Atka mackerel/Other sp.	0.0227	25,641	582
	Rockfish	0.0245	10,024	246

[1] Halibut amounts are in metric tons of halibut mortality. Crab amounts are in numbers of animals.
[2] Target fishery categories are defined in regulation at § 679.21(e)(3)(iv).
[3] C. opilio Bycatch Limitation Zone. Boundaries are defined at § 679.21 (e)(7)(iv)(B).
[4] The Council at its December 1999 meeting limited red king crab for trawl fisheries within the RKCSS to 35 percent of the total allocation to the rock sole, flathead sole, and other flatfish fishery category (§ 679.21(e)(3)(ii)(B)).
[5] The Council at its December 1999 meeting apportioned the rockfish PSC amounts from July 4 - December 31, to prevent fishing for rockfish before July 4, 2000.

Table 2.1.2 -8. AFA Catcher Vessel Prohibited Species Catch (PSC) Sideboard Amounts for the GOA.

PSC species	Target fishery and season	Ratio of 1995-1997 AFA CV retained catch to total retained catch	2000 PSC Limit	2000 AFA catcher vessel PSC sideboard Caps
Halibut (mortality in mt)	**trawl 1st seasonal allowance**			
	Shallow water targets	0.3400	500	170
	deep water targets	0.0700	100	7
	trawl 2nd seasonal allowance			
	Shallow water targets	0.3400	100	34
	deep water targets	0.0700	300	21
	trawl 3rd seasonal allowance			
	Shallow water targets	0.3400	200	68
	deep water targets	0.0700	400	28
	trawl 4th seasonal allowance			
	all targets	0.2050	400	82

2.1.2.6.5 Sideboard Exemptions for Catcher Vessels

The Council approved specific exemptions to the sideboard caps for catcher vessels less than 125' LOA that landed less than 1,700 mt of pollock on average during 1995-97. These vessels were exempted from the BSAI Pacific cod sideboard caps if they made at least 30 landings in the BSAI Pacific cod fishery from 1995-97. In the GOA, catcher vessels meeting the vessel length and BSAI pollock harvest requirement were exempted from the sideboard caps if they made at least 40 GOA groundfish landings from 1995-97.

The catch history of exempt vessels will not be included when NMFS determines the overall sideboard cap amounts. Since their historic catch is not included in the caps, the future catch of these vessels will not count towards the caps nor will the exempt catcher vessels be required to stop fishing when the sideboard cap is reached, if the directed fishery is open to non-AFA trawl catcher vessels.

As of August 24, 2000 a total of 12 vessels had applied for the BSAI Pacific cod exemption and 14 vessels for the GOA exemption to groundfish sideboards. Estimating the impacts of exempting these catcher vessels from the sideboard caps is difficult. Because these vessels have relatively small BSAI pollock catch histories they were most likely not full time BSAI pollock participants. If indeed the vessels were not full time BSAI pollock fishermen when that fishery was open to directed fishing, the impacts of exempting them from the sideboards will be less than if they had been full time pollock boats. The requirement that the vessels must have made 30 landings in the BSAI Pacific cod fishery and 40 landings in the GOA were included to ensure that vessels were active participants in those fisheries before being exempted. However, it is possible that vessels that were exempted from the sideboards may find a way to increase effort in those fisheries (perhaps through pollock leasing provisions in the inshore sector), but the increased effort should not be dramatic given their historic participation patterns.

The Council intended that catcher vessel sideboard caps apply to all vessels that were issued an AFA permit under sections 208(a)-(c) of the Act regardless of participation in a cooperative, if they did not meet the above exemption criteria. Any non-exempt vessel determined by NMFS to be eligible to participate in a cooperative will be bound by the sideboard caps outlined by the Council. The Council considered applying these caps only to vessels that participate in a cooperative (exempting vessels that apply for the AFA, but fish in the open access portion of the fishery). However, the Council felt that based on the direction provided by Congress in section 211(c)(1)(A) of the Act, which states that the Council shall recommend measures to *"prevent the catcher vessels eligible under subsections (a), (b), and (c) of section 208 from exceeding in the aggregate the traditional harvest levels of such vessels in other fisheries under the authority of the North Pacific Council as a result of fishery cooperatives in the directed pollock fishery...*", they should apply the sideboards to all eligible catcher vessels to afford protection to the non-AFA eligible vessels. A discussion of this issue is included chapter 7 of Amendments 61/61 to the GOA and BSAI FMPs. The section concludes that this decision will likely have the greatest impact on catcher vessels with smaller pollock catches, which were more diversified into other fisheries.

NMFS implemented the AFA to allow vessels 'opting out' of the BSAI pollock fishery entirely (i.e., those vessels that met the qualification criteria of the AFA but did not apply for an AFA permit) to be excluded from the sideboard cap regulations. From both an economic and equatability standpoint this is a reasonable approach. Vessels that do not apply for AFA eligibility will not be allowed to participate in the BSAI pollock fishery. Since the vessel owners elected not to apply, they are technically non-AFA vessels, and rules limiting the harvesting rights of AFA vessels should not apply to them.

2.1.2.6.6 Crab Harvesting Sideboards

AFA catcher vessels harvest restrictions have been developed for each of the primary BSAI crab species. Sideboard caps for the Bristol Bay Red King Crab (BRISTOL BAY RED KING CRAB) fishery restrict the AFA eligible vessels to an aggregate harvest level based on historical participation, much as was done with groundfish sideboards. However, a longer time period was included to define participation (1991 through 1997 as opposed to only 1995 through 1997), expanding the time period included years of larger harvest by those vessels which increased their sideboard cap from about 9% up to nearly 13% of the available quota.

Currently there are 42 AFA catcher vessels holding a permit to participate in the BRISTOL BAY RED KING CRAB fishery. Assuming the BRISTOL BAY RED KING CRAB GHL is 11.2 million pounds, this equates to approximately 35,000 pounds per vessel. If the 1999 price of \$6.25 per pound is applied to this catch it equates to over \$200,000 per vessel. Allowing the 42 AFA vessels that have participated in the fishery to continue to do so at a limited poundage, should provide protections for the remaining non-AFA vessels. However, the protections will not be as strict as they would have been if the 1995-97 time period were used to determine the sideboard cap.

Sideboard caps for the bairdi fishery are also managed by limiting the number of AFA catcher vessels that can participate in that fishery as well as the total amount of bairdi crab they may harvest. NMFS data regarding AFA permit applications indicates that 28 vessels are currently permitted to harvest bairdi crab. These 28 vessels will be allowed to harvest up to the percentage of the GHL they accounted for, in aggregate, over the 1995 and 1996 seasons. Information presented in BSAI FMP Amendment 61 shows that these vessels accounted for about 7 percent of the GHL over that time period. Allowing the AFA catcher vessels to harvest up to 7 percent of the GHL should provide the necessary protection for the non-AFA fleet that is required by the Act. It is difficult to make any projection as to what 7 percent of the GHL will amount to in pounds or dollars when the fishery is opened. The bairdi fishery is currently closed to fishing because of low abundance and is not expected to open again in the near future.

The remaining crab sideboards limit the number of AFA catcher vessels that are allowed to participate, but not their total aggregate catch. A total of seven vessels are licensed for the opilio fishery, two for the St. Matthew fishery, and one for the Pribilof fishery. Given the relatively small number of AFA catcher vessels eligible to participate in these fisheries and the lengths of the king crab fisheries, it is unlikely that they will cause substantial negative impacts to the non-AFA vessels in the fleet.

As discussed under the groundfish sideboard section, there were some AFA vessels that had the majority of their income from fisheries other than pollock - specifically there were three AFA vessels identified that had significant and long-term participation in the opilio crab fisheries. Subjecting these vessels to an aggregate sideboard limit (shared with the other AFA vessels) would have resulted in disproportionate and negative impacts to those vessels - essentially they would lose their ability to continue their historical fishing practices. To mitigate these impacts, the regulations represent a compromise that restricted the number of AFA vessels that are allowed to participate in the opilio fishery, but allowed AFA catcher vessels with a substantial historic dependence on the fishery to continue participating without any poundage caps. Specifically the alternatives only allow AFA vessels to fish opilio if they participated in that fishery a minimum of four years between 1988 and 1997.

2.1.2.6.7 Exemptions to Crab Harvesting Sideboards

The Council has approved a specific exemption to the crab harvesting sideboards for any vessels that can demonstrate participation in all opilio, bairdi, and BRISTOL BAY RED KING CRAB fisheries during the years 1991-97 and that have AFA pollock qualifying histories of less than 5,000 mt. This action is expected to affect only one vessel. By meeting the criteria outlined above, that vessel has demonstrated a long historic dependence on the crab fisheries. Allowing that vessel to be exempted from the crab harvesting sideboards should not cause any negative impacts to non-AFA crab fishermen, as a result pollock cooperatives. Given the vessel's historic participation, the vessel's owner would have likely chosen to participate in the crab fisheries instead of pollock even under an open access pollock fishery in the BSAI.

2.1.2.6.8 Crab Processing Sideboards

The crab processing sideboard components of the AFA regulations are based on the structure defined in the Act under Section 211(c)(2)(A) through the 2000 fishery. This section of the Act is specific to shorebased and mothership processors. Recall that catcher/processors are precluded from processing any crab under the AFA. The AFA language in the Act under Section 211(c)(2)(A) is as follows:

(2) BERING SEA CRAB AND GROUNDFISH.—

> *(A) Effective January 1, 2000, the owners of the motherships eligible under section 208(d)and the shoreside processors eligible under section208(f) that receive pollock from the directed pollock fishery under a fishery cooperative are hereby prohibited from processing, in the aggregate for each calendar year, more than the percentage of the total catch of each species of crab in directed fisheries under the jurisdiction of the North Pacific Council than facilities operated by such owners processed of each such species in the aggregate, on average, in 1995, 1996, 1997. For the purposes of this subparagraph, the term ''facilities''means any processing plant, catcher/processor, mothership, floating processor, or any other operation that processes fish. Any entity in which 10 percent or more of the interest is owned or controlled by another individual or entity shall be considered to be the same entity as the other individual or entity for the purposes of this subparagraph.*

The impacts of crab processing sideboards are not yet fully understood. Public testimony taken during the June 2000 Council meeting showed that harvesters and AFA processors wanted to have the caps removed. Non-AFA processors still supported the caps that were put in place during the opilio season. The main reason that catcher vessels wanted the caps removed was to increase competition for their product so they could potentially receive a higher price. They also felt that the reduced competition lead to longer offload time, which had the weather been worse[25] could have resulted in much higher deadloss.

AFA processors wanted the caps removed so they could purchase additional crab. Some of the AFA processors have added crab processing capacity since the end of the period used to determine processing history. Therefore, in the opilio fishery, the size of the processing sideboard cap is less than they had processed as a sector in recent years. This information was presented to the Council in discussion papers prepared for the June 2000 and September 2000 Council meetings.

Based on the public testimony and the discussion paper drafted for the Council's September meeting, the Council changed the formula for calculating crab processing caps at their September 2000 meeting. The formula originally used the processing history of the AFA sector relative to the non-AFA sector over the years 1995-97. The new formula adds 1998 to the equation and gives that year double weight. The effect of that change is that the crab sideboards are increased slightly for most species, with the largest increase being in the opilio fishery which increased by 7.74 percent from 58.15 percent of the GHL to 65.89 percent. This change was made to better reflect the processing conditions that existed prior to passage of the AFA.

2.1.2.6.9 Groundfish Processing Sideboards

The AFA directed the Council to develop protections for non-AFA processors, but did not specify a time frame for implementing those changes. The specific AFA language outlining processor sideboards is taken from Section 211(c)(2)(B) and provided below:

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[25]The 2000 opilio season was moved from the winter to April as a result of the ice edge being further south than normal at the time of year the fishery normally starts, and because of the small GHL

(B) Under the authority of section 301(a)(4) of the Magnuson-Stevens Act (16 U.S.C. 1851(a)(4)), the North Pacific Council is directed to recommend for approval by the Secretary conservation and management measures to prevent any particular individual or entity from harvesting or processing an excessive share of crab or of groundfish in fisheries in the Bering Sea and Aleutian Islands Management Area.(C) The catcher vessels eligible under section 208(b) are hereby prohibited from participating in a directed fishery for any species of crab in the Bering Sea and Aleutian Islands Management Area unless the catcher vessel harvested crab in the directed fishery for that species of crab in such Area during 1997 and is eligible to harvest such crab in such directed fishery under the license limitation program recommended by the North Pacific Council and approved by the Secretary. The North Pacific Council is directed to recommend measures for approval by the Secretary to eliminate latent licenses under such program, and nothing in this subparagraph shall preclude the Council from recommending measures more restrictive than under this paragraph.

Measures to protect non-AFA processors have been considered by the Council but further discussions and decisions have been tabled until negative impacts are realized. The specific alternatives considered for processing sideboard caps may be found in the July 14, 2000 public review draft of the EA/RIR developed for this issue. That document is available from the Council office.

Some processing restrictions applying to catcher/processors were included in the AFA, and have been implemented. Restrictions that are currently being enforced through the emergency rule include a prohibition on processing any fish harvested from NMFS management area 630 (part of the Central Gulf of Alaska). AFA catcher/processors are also prohibited from processing any BSAI crab. However, the Act does not preclude those vessel owners from using revenues generated through the pollock fishery to invest in another vessel that could be used to harvest or process BSAI crab.

The Council did approve processing sideboards for the BSAI pollock fishery. Pollock processing sideboards were set at 30 percent of the BSAI pollock TAC available to the AFA sector. The cap is about 13 percentage points higher than the one set in statue by the AFA and about 5 percentage points higher than the current largest entity.

An additional method of protecting non-AFA processors, particularly members of the H&G fleet, is a proposed modification of the Improved Retention/Improved Utilization program. This proposal would loosen the retention requirements for flatfish species that are due to be phased in at the start of 2003. Requiring the H&G fleet to retain and utilize almost all of the rock sole and yellowfin sole that they catch may increase their costs to a level where even the current prices cost structure allows for only slim margins in these fisheries (according to the H&G fleet). Many AFA-qualified processors have the ability to produce fish meal from small or unwanted catch, providing an additional competitive advantage in flatfish processing under IR/IU.

2.1.3 Cooperative Contracts and Reports

Any contract implementing a fishery cooperative for the purpose of cooperatively managing directed fishing for BSAI pollock for processing by catcher/processors or motherships, and any material modifications to any such contract must be filed not less than 30 days prior to the start of fishing under the contract with the Council and with the Regional Administrator, together with a copy of a letter from a party to the contract requesting a business review letter on the fishery cooperative from the Department of Justice and any response to such request**.** Any fishery cooperative intending to deliver pollock to an AFA mothership also must notify the owners of the AFA mothership not less than 30 days prior to the start of fishing under the contract.

The Council and NMFS have required that specific elements be included in the cooperative contracts. Any cooperative contract filed must contain the following information:

1. A list of parties to the contract.
2. A list of all vessels and processors that will harvest and process pollock harvested under the cooperative,
3. The amount or percentage of pollock allocated to each party to the contract, and
4. For a cooperative that includes catcher vessels delivering pollock to motherships or catcher/processors, penalties to prevent each non-exempt member catcher vessel from exceeding an individual vessel sideboard limit for each BSAI or GOA sideboard species or species group that is issued to the vessel by the cooperative in accordance with the following formula:
    - i The aggregate individual vessel sideboard limits issued to all member vessels in a cooperative must not exceed the aggregate contributions of each member vessel towards the overall groundfish sideboard amount as calculated by NMFS and announced to the cooperative by the Regional Administrator, or
    - ii In the case of two or more cooperatives that have entered into an inter-cooperative agreement, the aggregate individual vessel sideboard limits issued to all member vessels subject to the inter-cooperative agreement must not exceed the aggregate contributions of each member vessel towards the overall groundfish sideboard amount as calculated by NMFS and announced by the Regional Administrator.

The cooperative contracts also state that pursuant to Section 210(f) of the AFA, the cooperative members agree to make payments to the State of Alaska for any pollock harvested in the BSAI pollock fishery which is not landed in the State of Alaska, in amounts which would otherwise accrue had the pollock been landed in the State of Alaska subject to any landing taxes established under Alaska law.

2.1.3.1 Mothership and Catcher/Processor Contracts

Any cooperative which harvests BSAI pollock from the mothership or catcher/processor allocation (including the catcher vessels that deliver to catcher/processors) must submit annual preliminary and final written reports on fishing activity to the North Pacific Fishery Management Council for public distribution. The preliminary report covering activities through November 1 must be submitted by December 1 of each year and the final report must be submitted by January 31 of each year. Those written reports must contain, at a minimum:

(1) The cooperative's allocated catch of pollock and sideboard species, and any sub-allocations of pollock and sideboard species made by the cooperative to individual vessels on a vessel-by-vessel basis;

(2) The cooperative's actual retained and discarded catch of pollock, sideboard species, and PSC on a area-by-area and vessel-by-vessel basis;

(3) A description of the method used by the cooperative to monitor fisheries in which cooperative vessels participated; and

(4) A description of any actions taken by the cooperative to penalize vessels that exceed their allowed catch and bycatch in pollock and all sideboard fisheries.

As stated earlier, all of the cooperatives have submitted an annual report for the 2000 fishing season. Those reports were submitted to the Council around February 1, 2000 and again in February 2001 and 2002.

2.1.3.2 Inshore Cooperatives

Like the mothership and catcher/processor sectors, any contract implementing a fishery cooperative for the purpose of cooperatively managing directed fishing for pollock for processing by an AFA inshore processor, any material modifications to any such contract, and a copy of a letter from a party to the contract requesting a business review letter on the fishery cooperative from the Department of Justice and any response to such request, must be filed with the Council and with the Regional Administrator no later than 30 days prior to the start of fishing under the contract. Those inshore cooperative contracts must contain the following elements:

1. A list of parties to the contract,
2. list of all vessels and processors that will harvest and process pollock harvested under the cooperative,
3. The amount or percentage of pollock allocated to each party to the contract, and
4. Penalties to prevent each non-exempt member catcher vessel from exceeding an individual vessel sideboard limit for each BSAI or GOA groundfish sideboard species or species group that is issued to the vessel by the cooperative in accordance with the following formula:
   i The aggregate individual vessel sideboard limits issued to all member vessels in a cooperative must not exceed the aggregate contributions of each member vessel towards the overall groundfish sideboard amount as calculated by NMFS and announced to the cooperative by the Regional Administrator, or
   ii In the case of two more cooperatives that have entered into an inter-cooperative agreement, the aggregate individual vessel sideboard limits issued to all member vessels subject to the inter-cooperative agreement must not exceed the aggregate contributions of each member vessel towards the overall groundfish amount as calculated by NMFS and announced by the Regional Administrator.

Any inshore cooperative that is formed must appoint a designated representative to fulfill regulatory requirements on behalf of the cooperative including, but not limited to, the signing of cooperative fishing permit applications and completing and submitting inshore catcher vessel pollock cooperative catch reports. The owners of the member catcher vessels in the cooperative are jointly responsible for compliance and must ensure that the designated representative complies with all applicable regulations.

Any inshore cooperative that is formed must appoint an agent who is authorized to receive and respond to any legal process issued in the United States with respect to all owners and operators of vessels listed on the cooperative fishing permit. The cooperative must provide the Regional Administrator with the name, address and telephone number of the appointed agent on the application for an inshore cooperative fishing permit. Service on or notice to the cooperative's appointed agent constitutes service on or notice to all members of the cooperative.

The owners and operators of all member vessels of an inshore pollock cooperative are responsible for ensuring that the agent is capable of accepting service on behalf of the cooperative for at least 5 years from the expiration day of the AFA permit. The owners and operators of all member vessels of a cooperative are also responsible for ensuring that a substitute agent is designated and the Regional Administrator is notified of the name, address and telephone number of the substitute representative in the event the previously designated representative is no longer capable of accepting service on behalf of the cooperative or the cooperative members within that 5-year period.

An inshore pollock cooperative that applies for and receives an AFA inshore cooperative fishing permit will receive a sub-allocation of the annual inshore pollock allocation that is determined according to the following procedure:

(1) The Regional Administrator will calculate an official AFA inshore cooperative catch history for every catcher vessel that made a landing of inshore pollock in the Bering Sea Subarea and/or Aleutian Islands Subarea during 1995, 1996, or 1997 according to the following steps:

(i) For each year from 1995 through 1997 the Regional Administrator will determine each vessel's total inshore landings; from the Bering Sea Subarea and Aleutian Islands Subarea separately.

(ii) If a catcher vessel made a total of 500 or more mt of landings of Bering Sea Subarea pollock or Aleutian Islands Subarea pollock to catcher/processors or offshore motherships other than the EXCELLENCE (USCG documentation number 967502); GOLDEN ALASKA (USCG documentation number 651041); or OCEAN PHOENIX (USCG documentation number 296779) over the 3-year period from 1995 through 1997, then all offshore pollock landings made by that vessel during from 1995 through 1997 will be added to the vessel's inshore catch history by year and subarea.

(iii) After steps (i) and (ii) are completed, the 2 years with the highest landings will be selected for each subarea and added together to generate the vessel's official AFA inshore cooperative catch history for each subarea. A vessel's best 2 years may be different for the Bering Sea subarea and the Aleutian Islands Subarea.

(2) Each inshore pollock cooperative that applies for and receives an AFA inshore pollock cooperative fishing permit will receive an annual quota share percentage of pollock for each subarea of the BSAI that is equal to the sum of each member vessel's official AFA inshore cooperative catch history for that subarea divided by the sum of the official AFA inshore cooperative catch histories of all catcher vessels that made BSAI inshore pollock landings from that subarea in 1995, 1996, or 1997. The cooperative's quota share percentage will be listed on the cooperative's AFA pollock cooperative permit.

(3) Each inshore pollock cooperative that receives a quota share percentage for a fishing year will receive an annual allocation of Bering Sea and/or

Aleutian Islands pollock that is equal to the cooperative's quota share percentage for that subarea multiplied by the annual inshore pollock allocation for that subarea. Each cooperative's annual pollock TAC allocation may be published in the interim, and final BSAI TAC specifications notices.

In addition to the regulations developed above for defining a cooperative and the BSAI pollock allocation those cooperatives will be issued, AFA inshore pollock cooperatives must comply with the following fishing restrictions.

(1) Only catcher vessels listed on the cooperative's AFA inshore cooperative fishing permit are permitted to harvest the cooperative's annual cooperative allocation.

(2) All BSAI inshore pollock harvested by a member vessel while engaging in directed fishing for inshore pollock in the BSAI during the fishing year for which the annual cooperative allocation is in effect will accrue against the cooperative's annual pollock allocation regardless of whether the pollock was retained or discarded.

(3) Each inshore pollock cooperative must report to the Regional Administrator its BSAI pollock harvest on an daily basis according to the recordkeeping and reporting requirements set out at Sec. 679.5(o) of the Emergency Rule implementing these cooperatives.

Any fishery cooperative governed by this section must submit annual preliminary and final written reports on fishing activity to the North Pacific Fishery Management Council for public distribution. The preliminary and final reports must contain the same elements and must be submitted according to the same deadlines as the preliminary and final reports required under the mothership and catcher/processor sector definitions.

2.1.4 Leasing of Quota Among Cooperative Members

The leasing of quota among members of a cooperative has allowed excess harvesting capacity to be removed from the BSAI pollock fishery, and has allowed for more efficient utilization of the remaining vessels. Trident Seafoods was the only member of the catcher processor sector to lease more than 5 mt of pollock to other cooperative members. Several members of the catcher vessel sector leased pollock in 2000. Proposed Amendment 69 to the BSAI Fishery Management Plan indicates that approximately 38,000 mt of pollock (7.8 percent of the inshore harvest) were leased by catcher vessels in the inshore sector during 2000. That same year several catcher vessels in the catcher/processor sector leased pollock, and by 2001 all of the vessels in that sector leased all of their quota. Several catcher vessels in the mothership sector also leased quota in 2000.

The Council has also approved an amendment that would allow catcher vessels to lease their BSAI pollock quota to AFA inshore catcher vessels that are not a part or their cooperative. Under this proposal, catcher vessels would be required to obtain permission from their cooperative and the processor associated with their cooperative before the lease could take place.

2.1.5 Summary

In summary, the harvesting and processing sideboard measures that have been implemented appear to provide the desired protections for the non-AFA fleet, in most cases. A specific example of where the non-AFA fleet has expressed concern over the caps, after the sideboards were in place, is the BSAI Pacific cod sideboard measures implemented in the catcher vessel sector. Three non-AFA trawl catcher vessel owners that are participants in the BSAI Pacific cod fishery testified at the June 2000 Council meeting that they have harvested a smaller percentage of the cod fishery as a result of the AFA. The three non-AFA fishermen also testified that the AFA has raised safety problems because the presence of the additional AFA vessels resulted in a race for fish which forced the three cod vessels to fish in winter weather conditions in which they normally would not fish. Members of the Council wished to ensure that these vessel owners were not being disadvantaged because of the AFA and have asked the two sides to negotiate a settlement to the problem.

Processing sideboards for groundfish have not yet been implemented, but are still being considered by the Council and therefore the impacts of the caps cannot be reported. However, crab processing sideboards were implemented as defined in the AFA, but they have been changed to increase the cap since being implemented. The change was made to better reflect the processing conditions that existed just prior to implementation of the AFA. The increased sideboard cap amounts were supported by the catcher vessels that deliver crab and the AFA processors. The non-AFA processing sector did not support increasing the caps.

2.2 Bycatch and Discards

The term “bycatch” is used in this document to describe fish that are harvested when targeting another species. For example, Pacific cod is often taken as bycatch when fishermen are trying to harvest pollock in a directed pollock fishery. Pacific cod, taken as bycatch in this example, may be processed into a saleable product or discarded.

The term “discards” will refer to fish that were not retained for processing. Discards are generally considered as either “economic” or “regulatory”. Economic discards occur when it costs more (including opportunity costs of the plant) to process fish than the market is willing to pay. These fish are often of poor quality, a size the market will not accept, or the plant being unable to efficiently process that fish. Most of the discards in Appendix III are economic discards. Regulatory discards occur when Federal or State regulations mandate that the fish be discarded. PSC are regulatory discards and so are groundfish harvested above the maximum retainable bycatch (MRB) amounts. Discards may result from either fish taken as bycatch in a directed fishery, or they may result from the species that was targeted being the wrong size or of a quality that the market would not accept. The term discard does not apply to parts of a fish that were not kept once the saleable products have been utilized. Some vessels do not have the capability to produce fishmeal, and after the flesh is removed the head, guts, and bones are often returned to the sea. This practice will not be considered discarding.

Data collected from the 1995-2000 fisheries are summarized in Appendix III to show discard rates and bycatch of groundfish[26]. Separate tables were developed for the catcher vessel and catcher/processor sectors. The bycatch and discard rates cannot be directly compared across the catcher vessel and catcher/processor tables, because the data source for the two estimates are different. The catcher vessel tables rely on ADF&G fishticket data that do not require the reporting of at-sea discards. The catcher/processor tables are derived from blend data that include estimates of at-sea discards.

The tables in Appendix III have the target fishery going down the rows and the species harvested in the target fishery in the columns. Reading across the pollock target fishery row showing total catch, the bycatch of species other than pollock is shown, as well as the directed pollock catch. The row reporting "% Discarded" is the percentage of the total catch of that species that was discarded in the pollock target fishery.

Drawing conclusions from the information presented in Appendix III is difficult. Discard rates of pollock and Pacific cod are very low are a result of the Improved Retention/Improved Utilization FMP amendment that went into effect in 1998. Total discards in the AFA sectors have declined since implementation of the IR/IU program (from about 9 percent of the total catch to about 2 percent). The discard rates have held at about 2 percent since 1998.

In the AFA catcher/processor sector, discard rates have decreased from about 10 percent prior to IR/IU to between 2 and 4 percent since it was implemented[27]. If only groundfish are considered the discard rate is less than 1 percent. Discard rates have increased slightly from 1998 to 2000. The increase is likely a result of the changes in seasons and fishing locations that were required to protect Seller sea lions.

Salmon Bycatch: Salmon bycatch is the most prevalent in the midwater pollock target fishery. To help alleviate the problems associated with salmon bycatch industry has worked to put together an inter-cooperative agreement aimed at reducing salmon bycatch. That agreement limits the amount of salmon a vessel is allowed to catch before penalties are assessed by the cooperatives. The Federal government has had difficulty using these programs because of enforcement of any penalties proved to be difficult. Enforcement of the program by members of the inter-cooperative should prove to be easier and sanctions may be imposed faster than could be done under Federal regulation by NMFS.

Table 2.2-1 is a summary of the salmon bycatch that occurred in the BSAI pollock fishery from 1998-2000. Those rates show that the number of chinook salmon taken as bycatch have dropped substantially, with the largest decreases occurring in the catcher vessel sector. In 2000 the catcher vessels were reported to have caught fewer chinook than the catcher/processors. That result is much

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[26]PSC is not reported in these tables since those estimates are not reliable at the individual catcher vessel level and the catcher/processor's cooperative report (Appendix II) includes that information.

[27]These discard rates are higher than those reported in the catcher/processor's cooperative report. The catcher/processor cooperative reported a discard rate of less than 1 percent in 2000. The difference is due to the fact that species like "jelly fish" were included in the discard rates in this report, whereas they were excluded from the cooperative's report. A logical argument could be made for using either approach, since those species have no markets or economic value.

different than 1998 when catcher vessels were reported to have caught over 4.6 times as many chinook as the catcher/processors.

Other salmon bycatch rates (primarily chum salmon) decreased in 1999 and then increased again in 2000 for both the catcher vessel and catcher/processor sectors. A substantial majority of the other salmon was taken by catcher vessels in the pollock fishery in all three years considered.

With all of the changes that have taken place in the pollock fishery it is difficult to sort out what those data mean. However, changes in the fishing seasons that have been implemented to spread the pollock fishery over time and space forced the fleet to fish during the summer months when salmon bycatch is typically higher. The bycatch data seems to agree with this conclusion since 34,440 of the 56,867 other salmon (60 percent) were taken from July 2 through August 19, 2000. Pollock had traditionally been closed to fishing during this time period.

Table 2.2-1: Salmon bycatch in the BSAI pollock target fishery

			Chinook		Other Salmon	
Year	Harvest Vessel	Groundfish (mt)	# of Fish	Rate (mt/#)	# of Fish	Rate (mt/#)
1998	CV	637,445	42,269	0.06631	55,923	0.0877
	CP	384,932	9,054	0.02352	8,119	0.0211
		1,022,378	51,322	0.05020	64,042	0.0626
1999	CV	538,361	6,251	0.01161	42,299	0.0786
	CP	319,362	4,131	0.01293	2,312	0.0072
	Total	857,723	10,381	0.01210	44,610	0.0520
2000	CV	590,536	1,720	0.00291	51,937	0.0880
	C/P	399,421	2,522	0.00631	4,930	0.0123
	Total	989,957	4,242	0.00429	56,867	0.0574

Source: NMFS weekly bycatch data (1998-2000)

2.3 Fishing Community Impacts

The U.S. Congress anticipated that passage of the AFA would result in substantial changes to the businesses and communities that rely on fishing in the North Pacific, as well as the natural resources that support those fisheries. To provide a better understanding of the impacts resulting from the Act, Congress requested that the Council develop a report focused on specific changes brought about by the AFA. This section of that report addresses the request for community impact analysis embedded within the language of Section 213(d) of the AFA, which states that:

> *. . . the North Pacific Council shall submit a report to the Secretary and to Congress on the implementation and effects of this Act, including the effects on fishery conservation and management, on bycatch levels,* ***on fishing communities****, on business and employment practices of participants in any fishery cooperatives, on the western Alaska community development quota program, on any fisheries outside of the authority of the North Pacific Council, and such other matters as the North Pacific Council deems appropriate* (emphasis added).

The component of the Congressional request that is addressed in this section is the impacts the AFA has had on fishing communities. While not a specific focus of this section, some impacts on business and employment practices of participants in the fishery cooperatives, to the extent that they have resulted in community specific impacts, are summarized here as well. Impacts on the western Alaska communities resulting from the community development quota (CDQ) program are treated separately in another section of this report.

Within this section, fishing communities are described in terms of how they changed as a result of the AFA. To illustrate these changes, the relevant communities are first described in overview in the context of the pre-AFA management structure (generally, license limitation and Inshore/Offshore-3 measures). Then post-AFA changes (with cooperatives in place) are noted on a topic-by-topic basis for the relevant communities, and attributed to AFA management structure changes to the extent possible. For the pre-AFA baseline description, we have relied on two primary sources of community descriptive information and social impact analysis. The more recent of these is found in the *Alaska Groundfish Fisheries Draft Programmatic Supplemental Environmental Impact Statement* (NOAA, January, 2001) [hereafter referred to as the 'Groundfish SEIS']. The community impact section of that document was compiled by the same study team compiling this section. In addition to the information in the main document of the Groundfish SEIS, a much more comprehensive background on the regional and community context is presented in Volume VII, Appendix I of that document. The second major source of background information is the Inshore/Offshore-3 Socioeconomic Description and Social Impact Assessment, Appendix II, of the *Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis: Inshore/Offshore-3 (Amendments 51/51)* (NPFMC, 1998) [hereafter referred to as the I/O-3 SIA]. The I/O-3 SIA was also compiled by the same study team performing the current analysis. To a large degree, the Groundfish SEIS social impact analysis built upon the I/O-3 SIA, which, in turn, built upon community, regional, and sector socioeconomic descriptions and social impact assessments in earlier NPFMC decision-making documents, especially the crab and groundfish license limitation/IFQ analysis (1994, 1995) and the Inshore/Offshore-1 community profiles and social impact assessment (1991). Due to the desired relative brevity of the current document, the major descriptive portions of these earlier documents are incorporated by reference, with summaries specifically directed to issues related to AFA impacts provided for this document. Most of the regional quantitative data brought forward into this document comes from the Groundfish SEIS. A discussion of the specific methodology used in obtaining the information that appears in this community impacts section is found in an appendix to this document.

One of the most difficult analytic challenges in examining the community impacts of the AFA results from the many other dynamics affecting the fishery and the fishing communities simultaneously. That is, "not all other things are equal," so that attributing changes to a single cause or action (or estimating the weight of a single factor in combination with one or more other factors) is difficult or impossible in a strict sense. For example, other management actions affecting communities were enacted concurrently with the AFA (the most pertinent of which may be measures to protect Steller sea lions, but quota shifts and management changes in other fisheries have also been confounding changes). While there is not a 'black and white' separation of impacts, it is possible to discuss the type and direction of impacts from the AFA itself. We will also discuss, at least to some extent, the interaction of these impacts with changes brought about by Steller sea lion protection measures, and to a much lesser extent, other changes. There have been substantial changes to other fisheries, due to fluctuations in stock size, as in the crab fishery in the Aleutians, or management changes, as in the Area M salmon fishery. These dynamics are also noted when considering changes that have occurred within the communities under consideration.

Both AFA and non-AFA communities are included in this analysis. As a simplifying assumption, it was decided at the outset that three Alaskan communities and Seattle would be the focus of the analysis, since they represent the range of community types. Kodiak was chosen to represent non-AFA communities (although Kodiak certainly has connections with the Bering Sea pollock fishery, as will be discussed). Sand Point was chosen to represent communities that have been involved in the BSAI pollock fishery in the past, but because of the AFA, may be expected to participate less in this fishery than in the past. Finally, Unalaska/Dutch Harbor and Seattle were selected to represent AFA communities. Fieldwork was conducted in all four of these communities. While fishing industry sector information is presented in regional format in order to provide a context for the interpretation of results and to provide information on the relative order of magnitude of the types of changes that have been experienced as a result of the AFA, the focus of this work is on those four communities. Some supplemental information was collected remotely for King Cove, and some information on changes in Akutan were derived from interviews with informed individuals in other communities.

One theme that runs through the analysis of individual regions and communities is that perhaps the most significant beneficial effect of the AFA, and one that it was not overtly designed to address, has been to serve as a mitigation measure to allow the Alaskan groundfish fisheries to take place in an economically viable way in the face of subsequently imposed Steller sea lion protection measures. This is perhaps the most important positive secondary or indirect impact of the AFA for communities as well as the individual fishery sectors and, although it cannot be measured in any exact way, it no doubt exists for all Bering Sea and Pacific Northwest communities that participate in the BSAI pollock fishery. Some industry participants have argued that AFA itself has had potentially positive impacts on Steller sea lion populations (through spreading out catch in time and space) as well as having the effect of at least partially mitigating the impacts of Steller sea lion protection measures on industry participants. Because of ongoing issues such as Steller sea lion protection, changes in fishery management for salmon and other species, weak fish prices, and the fluctuations of fish stock sizes, it is difficult to be precise about other community effects of the AFA. In the context of the following discussions, it must be borne in mind that most community dynamics are the result of a multitude of factors, and the AFA has had only one (and offshore, two) years in which to manifest effects. Although a number of changes in the fishery and communities have been observed to date, in the final analysis, that is probably too short a time for most such effects to be fully developed.

2.3.1 Regions and Communities Involved in Pollock/Groundfish/AFA-related Fisheries

2.3.1.1 Overview

Given the charge to examine community impacts of the AFA by looking at both AFA and non-AFA communities, this section provides a broad overview of the regional and community context of the North Pacific groundfish fishery in general, and the pollock fishery in particular. The socioeconomic information available on the groundfish fishery tends to be more recent, consistent, and comprehensive than that available for the pollock fishery in particular, due in large part to the recently completed Groundfish SEIS. Despite the lack of a precise 'parsing out' of the pollock role in the overall groundfish data provided in some of the tables presented in the Groundfish SEIS (and abstracted in this section), it is relatively easy to get a sense of the overall contribution of pollock for the different locally based sectors, as data by species for harvesting and processing is also provided. Also, a more general focus on groundfish with pollock examined within the groundfish context is warranted due to the overlap in direct participation in other groundfish fisheries by pollock fishery participants, given commonalities of gear types, etc.

In subsequent sections, each region is broken out separately. A broad regional overview following a common format is presented for each region. The intent is to provide the reader with enough information to place the region in terms of its level of participation in the fishery in comparison with other regions, as well to understand the relative level of importance of Bering Sea pollock vis-a-vis other groundfish fisheries within each region. Following the general overview, the regionally important pollock/groundfish communities are discussed individually, with a particular emphasis on Unalaska/Dutch Harbor, Sand Point, Kodiak, and Seattle.

Following the approach and methodology used in the Groundfish SEIS, four Alaska and two Pacific Northwest regions are characterized for their participation in the groundfish fishery in general and the pollock fishery in particular. The regions and their constituent jurisdictions or geographies are listed in Table 2.3.1-1. Those regions not associated with a particular community of interest (Unalaska, Kodiak, Sand Point, Seattle) are only briefly discussed, in terms of very narrowly defined issues, since information collected for those regions for this work was very limited. The rest of this subsection presents comparative information on population, employment and income, processing, processing ownership, and catcher vessel ownership and activity across the regions. The fisheries data has been updated through 2000 to the extent possible, by using federal blend data and state fish ticket information. Since this data set was not processed in exactly the same way as the Groundfish SEIS database, the values of the numbers differ. We provide the full time series (1996-2000) for the database we use so that it can be, in a sense, "calibrated" against the information used in the Groundfish SEIS. The pre-AFA existing conditions socioeconomic tables are primarily drawn from the Groundfish SEIS and have not been updated.

Table 2.3.1-1. Study Regions and their Acronyms

AKAPAI	**Alaska Peninsula and Aleutian Islands Region**. Includes the Aleutians East Borough and the Aleutians West Census Area.
AKSC	**Southcentral Alaska Region**. Includes Valdez-Cordova Census Area, Kenai Peninsula Borough, Matanuska-Susitna Borough, and Municipality of Anchorage.
AKKO	**Kodiak Region**. Includes the Kodiak Island Borough and other parts of the Kodiak archipelago.
AKSE	**Southeast Alaska Region**. Includes Yakutat Borough, Skagway-Hoonah-Angoon Borough, Haines Borough, City and Borough of Juneau, City and Borough of Sitka, Wrangell-Petersburg Census Area, Prince of Wales-Outer Ketchikan Census Area, and Ketchikan Gateway Borough.
WAIW	**Washington Inland Waters Region**. All counties bordering Puget Sound and the Strait of Juan de Fuca, including Clallum, Island, Jefferson, King, Kitsap, Mason, Pierce, San Juan, Skagit, Snohomish, Thurston, and Whatcom.
ORCO	**Oregon Coast Region**. Counties bordering the northern Oregon coast including Lincoln, Tillamook, and Clatsop.

Population. The communities and regions that are engaged in the Bering Sea pollock fishery specifically, and the North Pacific groundfish fishery in general, are diverse in many different ways. Perhaps the most obvious of these can be seen in the variation in regional populations. In Alaska, AKAPAI has a current population of approximately 7,000, AKKO has approximately 15,000, and AKSC and AKSE have about 363,000 and 73,000, respectively. In the Pacific Northwest, the WAIW region has about 3.8 million residents and the Oregon Coast region has about 105,000. Beyond overall population, the types of communities and the population structures in the regions vary considerably, as shown in the Groundfish SEIS, drawing on data from the U.S. Census, the Alaska Department of Community and Economic Development (DCED), and local data sources. The fishery has an impact on the male/female population balance for some Alaska communities, where intensive groundfish processing facilities are located. This type of direct impact on population structure attributable to groundfish is seen in few communities, primarily those with the highest level of groundfish-related processing activities. In Alaska, particularly AKAPAI and AKKO, there is also a relationship between percent of population that is Alaska Native and commercial fisheries development. Communities that previously were predominantly Native and have developed as large commercial fishing centers have become less Native in composition over time compared to other non-fishing communities in the region. There are, of course, many variables involved, but for a few of the communities noted; the relationship is straightforward. These differences in the male/female and Native/non-Native population segments are, to a degree, indicative of the type of articulation of the directly fishery-related population with the rest of the community. Again, this articulation varies considerably from place to place, and is not as apparent in AKSC and AKSE as it is in the more western regions.

Employment and Income. Employment and income (payments to labor) information presented for each region provides a look at types and levels of economic engagement with the groundfish fishery. These data, from the Groundfish SEIS, are drawn from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA), Regional Economic Information System (REIS), as well as U.S. Census and DCED sources, in addition to fisheries-specific data. Information on employment in the processing sector provides insight on level of employment in the communities that is directly attributable to groundfish fishery activity. During 1999, Alaska groundfish processing employment ranged from none in ORCO to more than 1,700 persons in AKAPAI and more than 2,100 persons in WAIW. Interpretation of these data in terms of engagement with the community is less straightforward for some regions than for others. For some, processing plants tend to be industrial enclaves that are somewhat separate from the rest of the community, while for others there is no apparent differentiation between the processing workforce and the rest of the regional or local labor pool. For the WAIW region, processing work is often at-sea, so in some respects it does not take place "in" a community at all. In all cases, however, processing employment tends to be seasonal in nature. A further complication for attribution of socioeconomic impacts to a regional base is the fact that many workers in many sectors perform groundfish-related work in a region or community other than the locations where they have other socioeconomic ties. It is not uncommon for fishery-related workers to spend little money in their work region and to send pay "home" to another community or region. In this sense, regional employment is indicative of the volume of economic activity, if not a specific level of labor activity directly comparable to other industries. The importance of this flow varies from region to region and from sector to sector, but is most apparent for the communities that are most heavily engaged in the processing aspect of the groundfish fishery.

Tax and Revenue. Tax and revenue information is presented for each Alaska region to provide a perspective on the role of the groundfish fishery in the underpinning of the local economy. Data are from the Alaska Department of Revenue (ADOR), DCED, and local sources, as appropriate. Information on the local tax structure of each relevant community is provided, and the communities and regions vary in the way that direct revenue is collected on fishery-related transactions that occur in the regions. For communities (and boroughs) in the western Alaska regions, a local fish tax is often a significant source of local revenue. For other regions, direct revenue benefits are more closely tied to the state fish tax. Information is provided for each region on shared taxes and the role of state shared fish tax in relation to these other taxes. Again, there is considerable variability from region to region. Also apparent is the regional differentiation in the importance of the relatively new fishery resource landing tax. This source of revenue comes from the offshore sectors of the fishery, is designed to capture some of the economic benefits of offshore activity for adjacent coastal Alaska regions, and is far more important to the revenue structure of the AKAPAI region than for any other region.

Inshore Processing. Inshore groundfish processing information is presented for each region to facilitate analysis of the volume and value of the groundfish that are landed in a region. The information is broken out by species, and historical information is provided on utilization rate, product value, and value per ton. When examined on a region-by-region basis, these data point out that the groundfish fishery varies widely from one region to another. For example, for AKAPAI, local groundfish processing activity is relatively focused on pollock, while in AKSE, the fishery is focused much more on the non-pollock, non-cod, non-flatfish, "other" (ARSO) species. Therefore, there are sharp differences in value per ton (greater in AKSE) and in volume (greater in AKAPAI, which accounts for 78 percent of the total volume for the state). These differences correspond with differences in a number of other factors, including the extent to which a local labor force is used in processing, and the degree to which a local fleet is harvesting the resource. Overall, this information is useful in looking at where fishery resources come ashore, and can be used as a rough indicator of the economic activity generated in processing communities. The relative amount of economic benefit to regions and specific communities varies considerably from place to place, as processing entities are articulated with communities in different ways in different places, and patterns of ownership influence the flow of economic benefits.

Processor Ownership. In part to address the flow of economic benefits and to help characterize them on a regional basis, pre-AFA ownership information is presented for processing entities by region. (Caution must be taken in interpreting this information, however, as assignment of entities to regions is based on ownership address information, and this is known to be less than precise in a number of cases due to different criteria for assigning addresses.) This information includes all processing sectors, both fixed processors in communities and mobile, at-sea processors (motherships and various catcher processor sectors). This information is presented by region, by sector, and by groundfish species. The data in this section facilitate consideration of how resource utilization is linked to ownership patterns and how those ownership patterns play out among regions. For example, of all of the regions, AKAPAI has the greatest volume and value processed inshore, but ownership of shore processing facilities in this region largely comprises individuals and firms located in the WAIW. The large mobile processors that work the Bering Sea have varying catch and processing locations and at least some ties to adjacent Alaska regions, but ownership again clearly shows predominant ties to the Pacific Northwest. Again, there are limitations on owner attribute data as they do not reflect the reality of complex owner relationships across types of entities and regions. (For example, these data do not show the recently increased CDQ ownership in the catcher-processor sector because of the structure of the data set that attributes ownership to the region of majority ownership. By industry group estimate, as of 2001, five of the CDQ groups own approximately one-fifth to one-quarter of the entire BSAI pollock catcher-processor fleet, and influence on the industry is also seen in the fact that the heads of three CDQ groups now sit on the industry sector association board.) Combining all types of processors (inshore, mothership, and offshore), processors owned by

WAIW residents accounted for 93 percent of both total reported tons and estimated wholesale value of all North Pacific groundfish processed in 1999.

Catcher Vessel Ownership and Activity. Pre-AFA information on catcher vessel ownership patterns is presented to demonstrate the links between resource harvesting and specific regions. Data are presented on the number and types of vessels in the regionally owned fleet and the employment and payments to labor that result from catcher vessel resource activities. Resources adjacent to individual regions are not uniformly harvested by catcher vessels from those regions. Different regions have varying combinations of local harvesting activity, local processing activity, and ownership of both harvesting and processing entities, and all of these have implications for the role of the groundfish fishery in the local socioeconomic context. For example, in terms of groundfish harvest value and volume, AKAPAI features a mostly nonresidential fleet, except for some of the smaller vessel classes. While the highest volume and value of groundfish resources harvest occur near this region, the catcher vessels accounting for most of this activity are from elsewhere (primarily WAIW and ORCO). As discussed in the individual region profiles, the higher the catcher vessel harvest volume in a given area, the less "local" the fleet tends to be. Put another way, the more important the region is to the overall groundfish fishery, the lower the proportion of total catch is likely to be harvested by the local fleet in that region, although recent CDQ partnership arrangements may serve to ameliorate this historical disjunction. Post-AFA ownership changes are then discussed, where possible, using information from publically available permit lists and developed from field interviews. It is clear, however, that given the complex relationships between companies and the issues of ownership versus control, issues of existing trends and the impacts of the AFA on these trends are difficult to characterize.

Pre-AFA information on harvest by FMP area for each region is provided to allow consideration of distribution of effort by the fleets of the individual regions in different groundfish management areas. In other words, this information facilitates gauging the relative importance of groundfish from each management area to the catcher vessel fleets based in each region. Regions vary widely in how "local" the catch effort is by the local fleet. For example, catcher vessels in AKSE have a very high concentration of effort in the Eastern Gulf of Alaska (EG) FMP area, while efforts of catcher vessels based in Kodiak are more wide-ranging. This information is also broken out by species so that relative dependency on species by area can be assessed. In this way, relative dependence on AFA impacted resources can be examined, at least in general terms.

Harvest Diversity. Extended regional profiles contained in the Groundfish SEIS (Appendix I) include a treatment of diversity in the catcher vessel fleet, and discusses a brief treatment of the annual cycle for groundfish catcher vessels and information on how groundfish fit into that cycle both in terms of timing and value. Information is also presented on how groundfish has fit into overall catcher vessel effort for groundfish catcher vessels over the last several years so that the relative role of groundfish can be seen over time. The information abstracted for this document clearly shows that the relative importance illustrates marked differences between regions. We have not been able to examine patterns of changes in harvest diversity post-AFA to any great degree, as our focus has been on community effects, but data are presented for Unalaska/Dutch Harbor and Kodiak. King Cove, Sand Point (and Akutan) cannot be discussed in a similar manner due to data confidentiality restrictions.

Processor Diversity. Diversity information similar to that presented for catcher vessels is also presented for processors for each of the regions to allow at least a general-level consideration of the relative importance of groundfish, and pollock in particular in relation to the amount of all processing in the region by groundfish processors. For the larger Bering Sea pollock inshore plants, for example, groundfish accounted for more than 60 percent of total ex-vessel value over the period 1995-1997, while in AKSE, analogous value ranged from 10 to 35 percent over the period 1991-1998. The estimates provided in this analysis indicate the amount of groundfish and non-groundfish processed at all regional processors that take deliveries of at least some quantity of groundfish.[28] We have examined changes in patterns of processor diversity to a limited degree, as they are more clearly associated with local community effects.

Subsistence. Each Alaska region profile contains a brief summary of subsistence resource use for selected communities with known ties to the groundfish fishery. The data used for this description were taken from the ADF&G subsistence database. The management of the consumptive use of subsistence resources in Alaska is complex, and is summarized in Appendix I of the Groundfish SEIS. Groundfish comprise up to 9 percent of total subsistence resources consumed in some communities. The AFA has not had any demonstrable effect on these patterns of use, nor did anyone we spoke with during the course of fieldwork for this project suggest that such effects had occurred.

Table 2.3.1-2 through 2.3.1-5 present information on participation in the groundfish fishery by region for processing and catcher vessel sectors.

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[28] A summary analysis of processors within the four Alaskan regions defined in this study revealed that shore based processors that took deliveries of at least some amount of groundfish accounted for approximately 77 percent of all non-groundfish processed at shore based processors within those regions.

Table 2.3.1-2. Selected North Pacific Groundfish Participation Measures by Region, 1998

	AKAPAI	AKKO	AKSC	AKSE	WAIW	ORCO	Total
Processor Employment and Payments to Labor							
Employment (Est. FTEs)	1,752	534	290	169	2,165	0	4,910
Payments to Labor ($Millions)	92	27	20	18	186	0	343
Groundfish Processing by Regional Inshore Plants							
Reported MT (Thousands)	486.5	96.8	17.7	24.1	0	0	625.1
Product MT (Thousands)	165.2	24.1	9.7	9.2	0	0	208.2
Utilization Rate (Percent)	34.0	24.9	54.8	38.3	0	0	0
Product Value ($Millions)	304.4	70.4	32.0	46.7	0	0	0
Value per Ton ($)	625.6	727.2	1,808.8	1,941.1	0	0	0
Processors Owned by Regional Residents							
No. of Processors Owned	2	7	16	8	114	0	147
Reported Tons (Thousands)	0	32.4	77.7	9.9	1,711.4	0	1,831.4
Wholesale Value ($Millions)	0	17.4	49.4	9.8	957.1	0	1033.7
Catcher Vessels Owned by Regional Residents							
No. of Catcher Vessels	89	205	288	548	280	45	1455
Employment (Persons)	349	767	944	1,380	1,147	171	4,758
Payments to Labor ($Millions)	3.0	8.9	3.3	9.0	38.5	6.4	69.1

*Value suppressed due to the confidentiality of the data.

Table 2.3.1-3. Groundfish Harvests Delivered to Inshore Plants by Species, 1999

Region	Total Reported Harvest by Species (MT)				
	FLAT	ARSO	PCOD	PLCK	Total
AKAPAI	9,501	4,057	56,111	474,401	**544,070**
AKKO	8,659	9,814	30,738	52,143	**101,354**
AKSC	875	4,593	3,348	2,031	**10,846**
AKSE	1,672	6,197	4,499	7,611	**19,979**
WAIW	0	0	0	0	**0**
ORCO	0	0	0	0	**0**
Total	**20,707**	**24,661**	**94,696**	**536,186**	**676249**

Source: NMFS Blend Data, 1991-1999.

Table 2.3.1-4. Retained Harvest by Catcher Vessels Owned by Residents of Various Regions by FMP Subarea, 1998

	AI	BS	WG	CG	EG	Total
Total Retained Harvest (Thousands of Tons)						
AKAPAI	0.0	0.7	19.0	8.0	a	**27.8**
AKKO	0.0	16.9	2.2	56.8	0.3	**76.2**
AKSC	0.1	2.2	1.8	7.9	0.3	**12.1**
AKSE	0.0	0.1	0.1	2.1	5.8	**8.1**
WAIW	6.9	443.8	26.1	29.3	8.3	**514.4**
ORCO	0.0	40.1	1.1	35.0	0.1	**76.3**
Total	7.0	503.8	50.3	139.1	14.8	**714.9**
Total Ex-Vessel Value ($Millions)						
AKAPAI	0.0	0.4	5.4	1.6	a	**7.4**
AKKO	0.1	3.4	1.0	17.0	0.8	**22.3**
AKSC	0.2	0.8	0.7	5.7	0.8	**8.2**
AKSE	0.0	0.1	0.3	4.2	17.9	**22.6**
WAIW	1.7	68.2	6.0	11.7	8.7	**96.3**
ORCO	0.0	8.3	0.4	7.0	0.2	**16.0**
Total	**2.0**	**81.2**	**13.8**	**47.2**	**28.4**	**172.8**

[a] Due to the confidentiality of the data presented, this value has been added to the CG value.

Table 2.3.1-5. Retained Harvest by Species by Catcher Vessel Owners by Region, 1998

	ARSO	FLAT	PCOD	PLCK	Total
Total Retained Harvest (Thousands of Tons)					
AKAPAI	0.2	0.0	16.3	11.2	**27.8**
AKKO	4.4	4.5	23.4	43.9	**76.2**
AKSC	1.4	0.2	8.1	2.5	**12.1**
AKSE	6.7	0.1	1.2	0.1	**8.1**
WAIW	6.2	2.2	31.9	474.1	**514.4**
ORCO	1.9	2.0	19.8	52.7	**76.3**
Total	20.8	9.0	100.7	584.5	**714.9**
Total Ex-Vessel Value ($Millions)					
AKAPAI	0.3	0.0	5.5	1.5	**7.4**
AKKO	4.8	1.3	9.7	6.6	**22.3**
AKSC	4.1	0.1	3.7	0.4	**8.2**
AKSE	22.0	0.0	0.5	0.0	**22.6**
WAIW	16.6	0.4	10.3	54.3	**81.5**
ORCO	1.2	0.5	6.8	7.6	**16.0**
Total	**49.0**	**2.3**	**36.5**	**70.4**	**158**

In order to properly assess differential changes in the pattern of CV harvest over time, and especially between the years 1999 and 2000, it is necessary to characterize the overall pattern. This pattern is essentially set by the TAC and management practices for each area. Table 2.3.1-6 presents retained harvest (in terms of weight and dollar value) and the number of CVs participating in the fishery for each of the species groups and areas considered, by year. The change from 1999 to 2000 is also displayed (represented by giving the percentage value that 2000 represented in relation to the 1999 value -- percentages over 100 percent represent an increase, percentages less than 100 percent representing a decrease), to ease comparisons in the regional and community discussions. The most basic observation is that for all BSAI species, the number of boats participating and the weight of the retained catch (reflecting an increased TAC) increased. Only for Pacific cod did the value of the retained harvest decline. For the GOA, for all species, the number of boats participating declined, although the weight and value of the harvest increased for flatfish and the other "ARSO" categories. GOA Pacific cod for 2000 decreased to 81 percent by weight and 77 percent by value of the 1999 total, and pollock decreased to 73 percent by weight but only to 88 percent of the 2000 levels by value. This was the pattern for all species except Pacific cod in both the BSAI and the GOA, where value of the retained harvest increased more than the weight. The differential between the two was greater in the BSAI than in the GOA, which may indicate that the AFA did increase the value of BSAI fish and, to a lesser degree because of its remaining open access system, those of the GOA as well.

Table 2.3.1-6. Number of Boats and Retained Catch by Weight and Value by Species Category by Catcher Vessel Ownership by Region

Measure		1995	1996	1997	1998	1999	2000	Change 1999-2000
BSAI								
ARSO	Boat	175	160	164	138	167	188	113%
	Pounds	2,846,802	2,183,973	2,924,008	2,609,273	1,661,359	2,404,458	145%
	Dollars	4,106,487	2,524,243	3,222,845	1,777,574	2,081,451	3,659,824	176%
Flatfish	Boat	127	137	130	123	135	174	129%
	Pounds	25,789,954	19,216,763	40,947,089	3,778,131	5,662,426	8,811,249	156%
	Dollars	2,220,684	1,573,633	2,357,499	322,302	361,583	1,057,532	292%
Pacific Cod	Boat	275	246	222	182	234	287	123%
	Pounds	123,105,554	154,612,165	137,000,406	96,609,827	92,549,751	110,529,443	119%
	Dollars	20,432,938	24,275,056	23,614,863	14,586,019	22,171,191	18,738,684	85%
Pollock	Boat	113	115	124	117	133	165	124%
	Pounds	934,912,886	867,409,559	791,311,949	812,107,838	957,115,136	1,106,230,020	116%
	Dollars	90,183,470	69,494,090	80,913,580	52,806,007	90,053,444	127,224,455	141%
GOA								
ARSO	Boat	903	927	926	851	807	763	95%
	Pounds	39,856,107	44,044,505	40,256,273	40,737,639	38,868,775	47,871,778	123%
	Dollars	71,487,704	64,166,867	62,622,481	41,123,837	43,522,883	56,744,917	130%
Flatfish	Boat	137	124	152	144	131	106	81%
	Pounds	16,154,610	25,040,087	27,060,033	18,270,987	13,120,094	25,989,212	198%
	Dollars	2,470,497	4,033,592	3,877,105	2,247,044	1,384,740	2,988,942	216%
Pacific Cod	Boat	730	532	752	695	733	745	102%
	Pounds	118,835,145	119,594,629	154,001,640	139,458,201	152,743,633	123,046,120	81%
	Dollars	24,715,317	21,944,842	30,714,286	24,203,262	42,712,275	32,702,589	77%
Pollock	Boat	153	139	209	202	204	183	90%
	Pounds	138,175,592	100,687,606	178,018,550	285,102,211	203,805,510	148,836,958	73%
	Dollars	13,161,542	9,004,631	18,556,975	19,005,332	19,605,765	17,155,867	88%

In general, there are a number of other "big picture" points to keep in mind when examining community impacts of the AFA. Among these are the fact that some aspects of the industry can not be 'held equal' although they are clearly important. First, in trying to isolate community impacts by looking at the intersection of communities and sector entities, the picture is complicated by entities that have a presence in both the BSAI and GOA areas. Second, some entities have a presence in two or more different sectors (CV's, CP's and shore processing), such that impacts that may be seen as accruing to one sector may be balanced by other sector changes. Third, entities in the groundfish fishery differ markedly in the degree to which they participate in and depend on other fisheries. This, of course, helps to determine the magnitude of impacts - or the consequences of impacts - experienced by the individual entities and communities. Other types of factors that confound the analysis in fundamental ways are aspects of the fisheries context that are outside of the control of the entities engaged in the fishery. As mentioned above, these include Steller sea lion protection measures that have recently changed the fishery in a number of ways at approximately the same time that AFA impacts were being realized. Also, Area M salmon changes, discussed elsewhere in this document, have had interactive impacts on AFA influenced entities and communities. In sum, while AFA-related impacts can be and are discussed in this document, there are known limitations on assigning causality of recent sector and community changes to AFA alone.

2.3.1.2 General Types of Change by FMP Area

The following five figures present general 'trend' information by major groundfish processing sector for the Bering Sea/Aleutian Islands FMP area and the Gulf of Alaska FMP area. The purpose of these figures is to illustrate the direction and magnitude of change in each of the major processing sectors over two large geographic areas, rather than precisely characterize more localized changes as is done in the individual regional (and community) discussions in subsequent subsections of this document. These should be interpreted with the very strong caution that it is not possible to truly illustrate a 'trend' with only a single year's data under the AFA co-op system (in the case of the shoreside processors) or two year's worth of data (in the case of the offshore processors) post-AFA co-ops. They do, however, illustrate with quantitative information some of the 'big picture' changes that have been observed across regions and communities. All of the figures in this section are derived from federal blend data provided by NPFMC staff.

Figure 2.3.1-1 illustrates the shoreside processing volume by species for BSAI groundfish for the years 1998-2000. Two changes are immediately apparent in 2000 (post-AFA co-ops) compared to 1999 and 1998. First, for pollock, the temporal spreading out of processing is apparent, especially during the second major period of processing activity (the former "B" season; the current "C/D" seasons). The peak volumes are distinctly lower in 2000 compared to 1999 as well. Together these illustrate the often heard observation that processing is not occurring at as quick a pace, but is occurring for longer periods. Second, for cod, a larger processing volume is shifted slightly earlier in the year and the curve is more rounded.

Figure 2.3.1-2 displays information on catcher processor processing for the BSAI area groundfish for the period 1998-2000. The dramatic decrease in peak pollock volume from 1998 (the last year before AFA co-ops, shift in quota away from the sector, and the AFA mandated reduction in the fleet) to 1999 is easily seen in the graph. Also apparent is the change in the timing of sector effort from 1998 to 1999 and 2000, with the first peak period (the A/B season) effort being more 'rounded' and extending later into the year. The C/D season effort also becomes more rounded, but the start of that effort shifts earlier in the year.

Figure 2.3.1-3 illustrates BSAI mothership processing for BSAI groundfish for 1998-2000. For motherships, 2000 was the first year operating under AFA co-ops. Several changes are apparent in this sector. First, the peaks of activity show a clear downward movement from 1998 to 1999 and again from 1999 to 2000. Second, the first peak period extend farther into the year and the second peak period begins earlier in the year, so that the stretching out of the processing intervals are apparent. Third, Pacific cod volume increased in 2000 and effort has spread out temporally. In earlier years, as shown, Pacific cod processing was clearly associated with the end of the first interval of pollock processing, but in 2000 Pacific cod processing coincided with pollock A/B season processing and extended only about two weeks past the end of pollock processing.

In the case of the mothership sector, the drop in pollock processing volume is a function of two factors. First, as discussed elsewhere in this document, there was a quota shift away from the mothership sector. Second, in earlier years catcher processors operating as motherships were classified in the database as being part of the same sector as 'true' motherships (i.e., those vessels without their own catch capability). Catcher processors operating under AFA conditions no longer gain a competitive stock access advantage through taking CV deliveries, nor is it particularly economically efficient to do so, so this practice has been discontinued. Additionally, with AFA, the mothership sector was specifically identified as a separate category containing only the three 'true' motherships. Due to time constraints, the pre-AFA catcher processors operating as motherships reports were not subtracted from the mothership sector and added to the catcher processor sector, although the information exists to do so. The patterns are sufficiently clear for both sectors in any event.

Figure 2.3.1-4 shows shoreside processing volume for Gulf of Alaska groundfish. Overall, the fluctuations in this sector are not as dramatic year-to-year in the 1998-2000 period as is apparent for the BSAI sectors. This is to be expected given that GOA groundfish did not experience direct impacts from either Inshore/Offshore-3 quota shifts, nor from direct AFA changes as was the case in the Bering Sea.

Figure 2.3.1-5 illustrates catcher processor activity on Gulf of Alaska groundfish for the years 1998-2000. Like GOA shoreside processing, activity in this sector does not fluctuate as much as for their BSAI counterparts. Again, this is due to, among other factors, the lack of direct impacts of the AFA and Inshore/Offshore-3. For pollock specifically, there is virtually no activity in this sector, due to the effective exclusion of pollock-oriented catcher processors from the Gulf of Alaska FMP area, dating back to Inshore/Offshore-1.

Figure 2.3.1-1. Shoreplant BSAI Groundfish Processing, 1998-2000

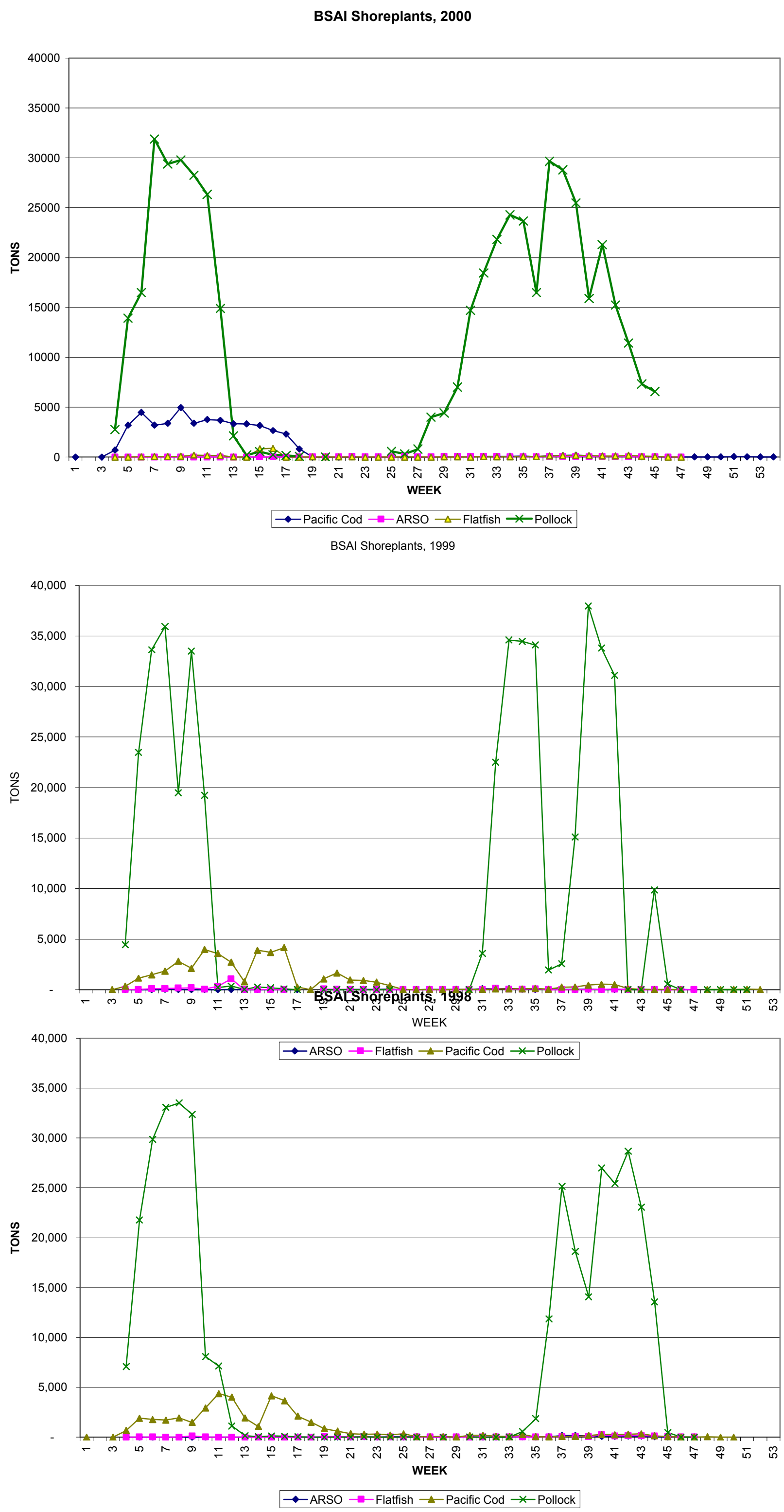


Figure 2.3.1-2. CP BSAI Groundfish Processing, 1989-2000

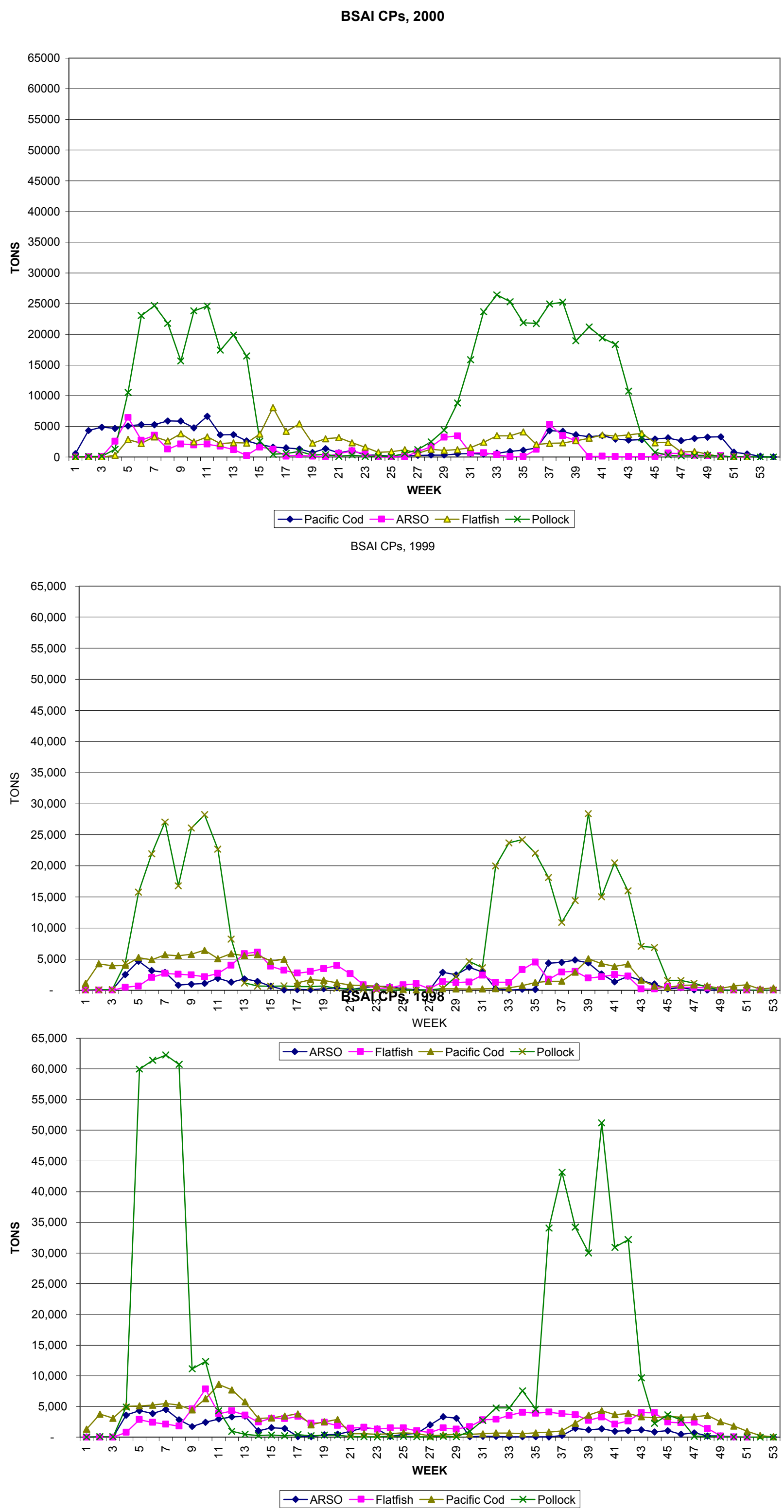


Figure 2.3.1-3. Mothership BSAI Groundfish Processing, 1998-2000

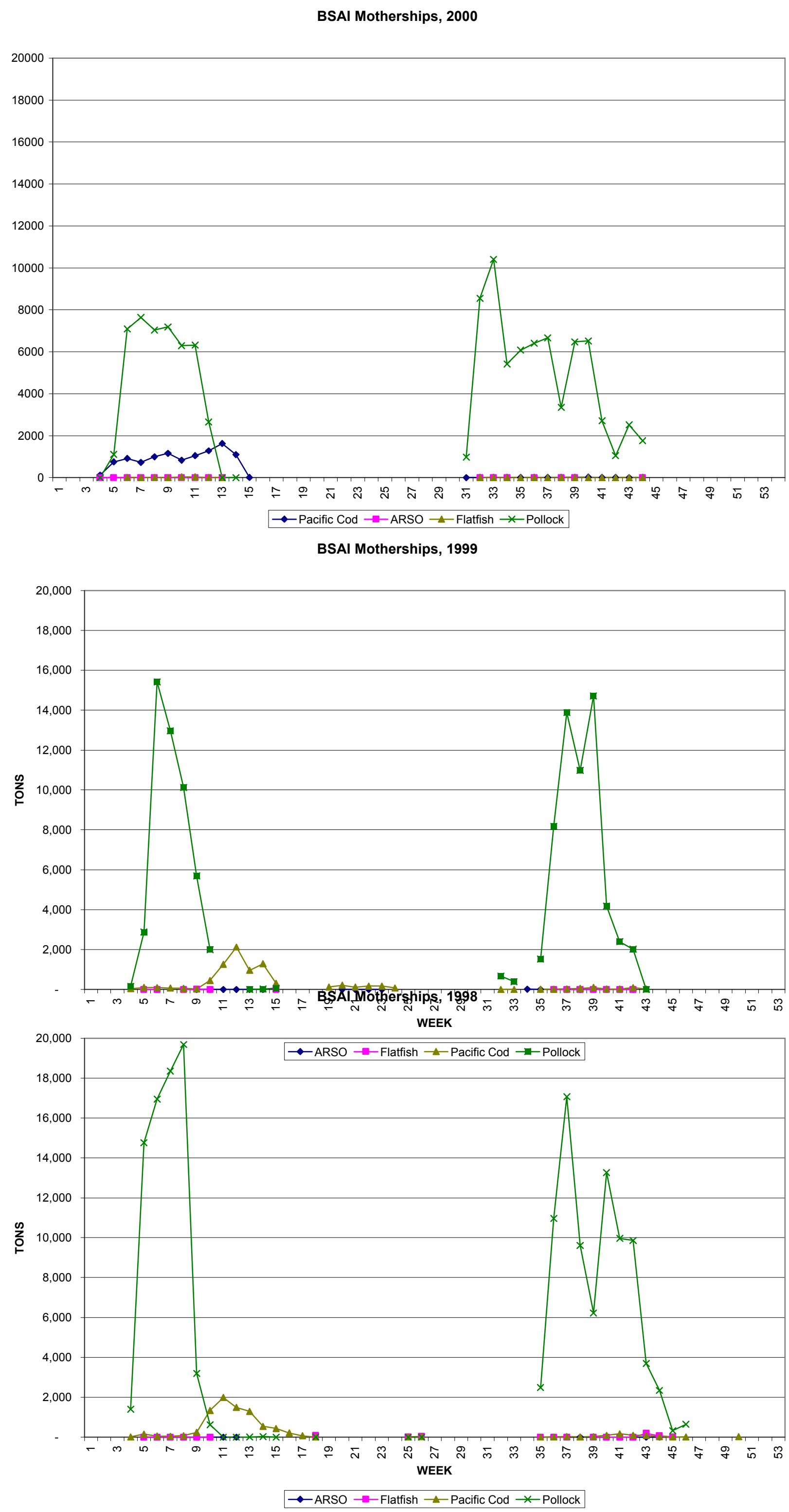


Figure 2.3.1-4. Shoreplant GOA Groundfish Processing, 1998-2000

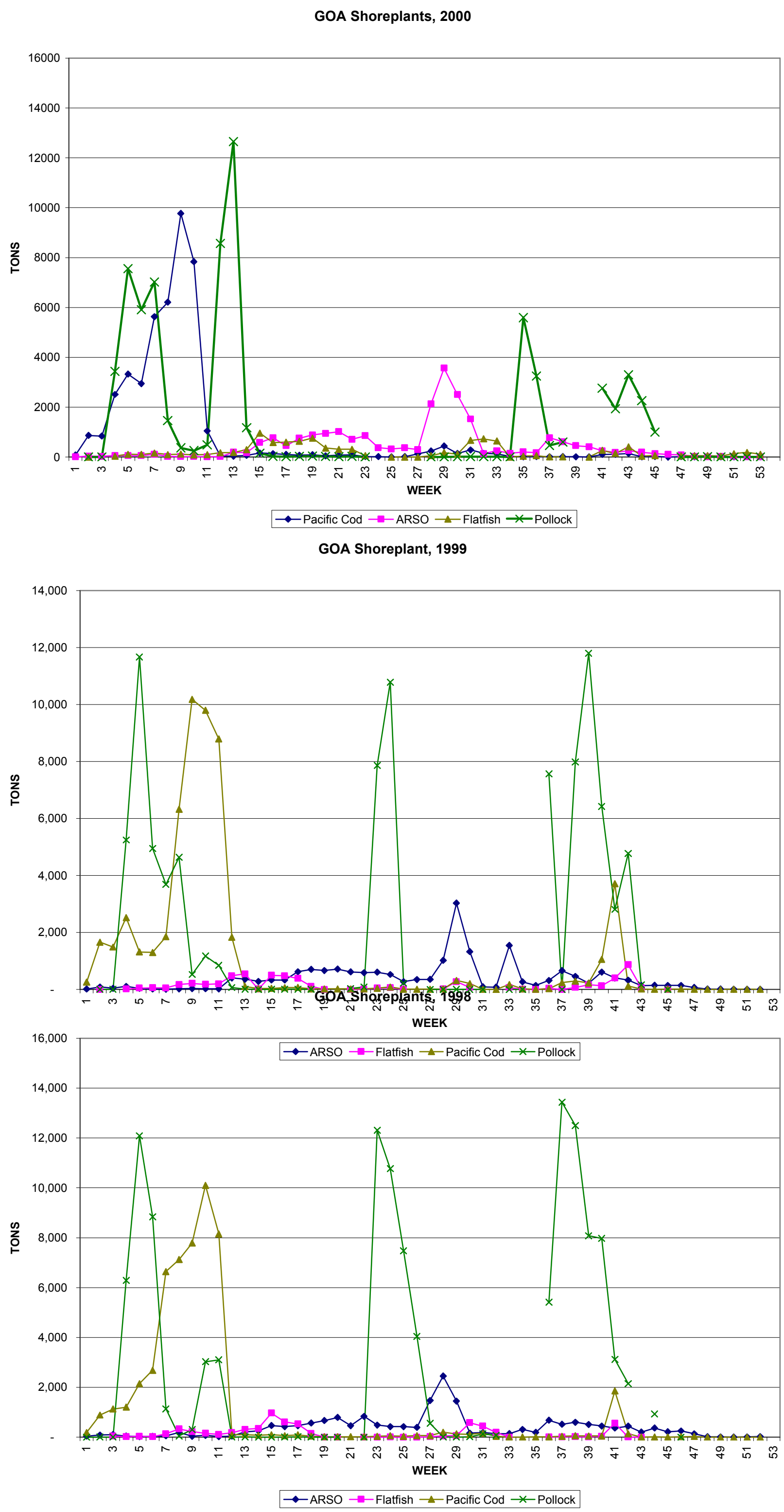
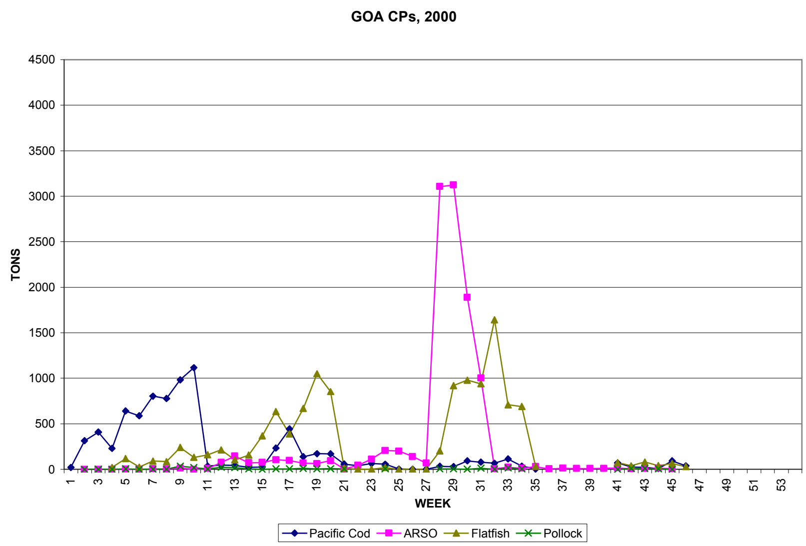
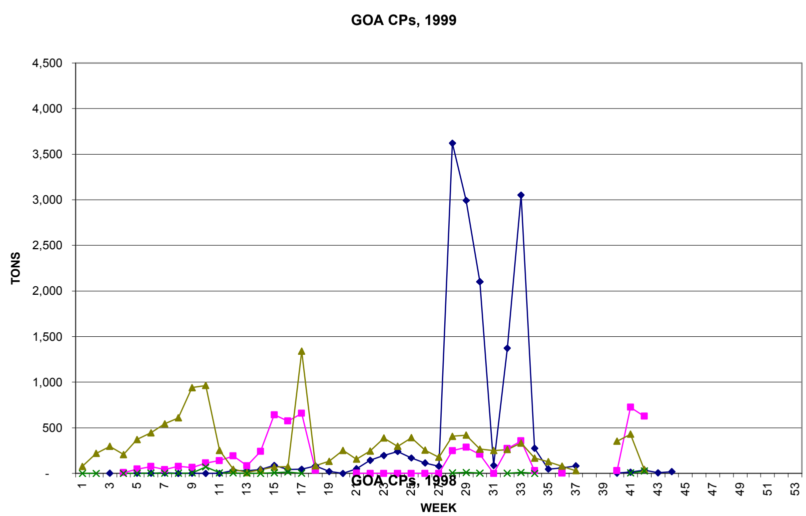
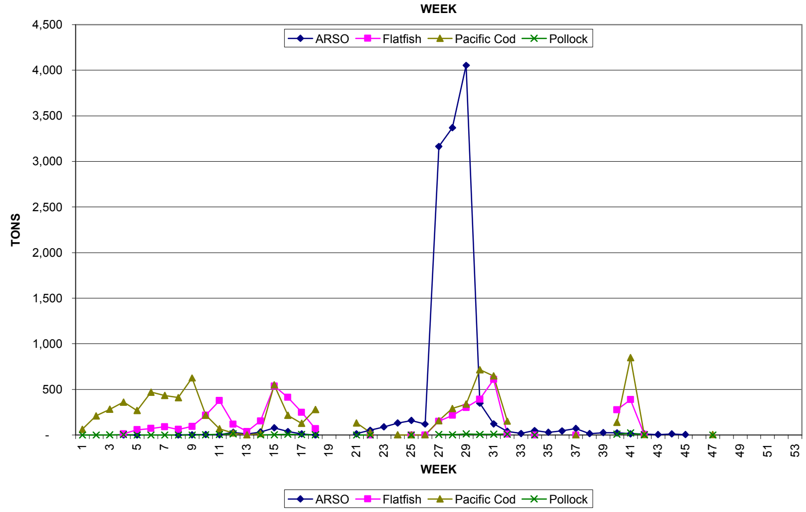


Figure 2.3.1-5. CP GOA Groundfish Processing, 1998-2000







The following figures display pollock-specific processing activity by major sector by FMP area for the years 1996-2000. These focus on pollock due to the central role of this species in the AFA, and in order to illustrate changes at a glance and over a somewhat longer time period than the previous figures.

Figure 2.3.1-6 illustrates shoreside processing volume trends for BSAI pollock. What is apparent in this figure is that peak processing is down somewhat in 2000 from all previous years illustrated for the first processing interval (the old "A" season and the new "A/B" seasons), but that it extends longer than all previous years. For the second part of the year (the old "B" season and the new "C/D" seasons), the picture is a little more complex. For 2000, the peak is about the same as was seen in 1996, 1997, and 1998, but it is well below the peak seen for 1999, (the last year of pre-co-op onshore conditions, but the first year of offshore co-ops). Also apparent is the shift of effort earlier in the second part of the year for 1999 compared to earlier years, and even earlier still for 2000.

Figure 2.3.1-7 provides analogous data for the BSAI pollock catcher processor activity. In this figure, it is easy to see the very different patterns for the years 1996-1998 (pre-AFA [vessel removal and co-op formation] and pre-Inshore/Offshore-3 quota shift) and 1999-2000 (post-AFA and Inshore/Offshore-3 quota shift). Peaks are much lower in 1999-2000 than earlier years, and the curves are more rounded. The pattern of a ramp-up start of the fall season (with CDQ fish) prior to a big jump (with open access) in 1996-1998, goes away in 1999-2000.

Figure 2.3.1-8 illustrates BSAI pollock mothership activity over the period 1996-2000. There are a couple of changes of note over these years. First is the drop in peak from the years 1996-1998 to the year 1999 (the first year of offshore co-ops) in the early part of the year, and then a dramatic drop in this part of the year from 1999 to 2000 (the first year of mothership co-ops). Also apparent for this part of the year is the shift of the whole curve a few weeks later in the year. Looking at the summer/fall season, there is an earlier start as well as the sharply lower peak for 2000 compared to previous years. In fact, the 2000 peak week takes place before the data show significant activity had started in the years 1996-1998.

Figure 2.3.1-9 displays information for shoreside processing of Gulf of Alaska pollock for 1996-2000. Due to relatively small volumes in conjunction with relatively high variability from year to year, no change in pattern is readily apparent, or at least any change in pattern thought to relate to AFA. Groundfish management in the GOA has dealt with much smaller quotas than in the BSAI, and has been more variable in the length and timing of openings.

The next series of figures illustrates the relative role of CDQ pollock in the different type of processing operations in the BSAI. Two illustrations are presented in each figure, showing non-CDQ and CDQ pollock, respectively. Care should be taken in quick interpretations as, unlike previous figures, in this case the two illustrations on a page have different scales (otherwise, if the scale was held constant, the CDQ pollock illustrations would be too small to read).

Figure 2.3.1-6. Shoreplant BSAI Pollock Processing Volume, 1996-2000

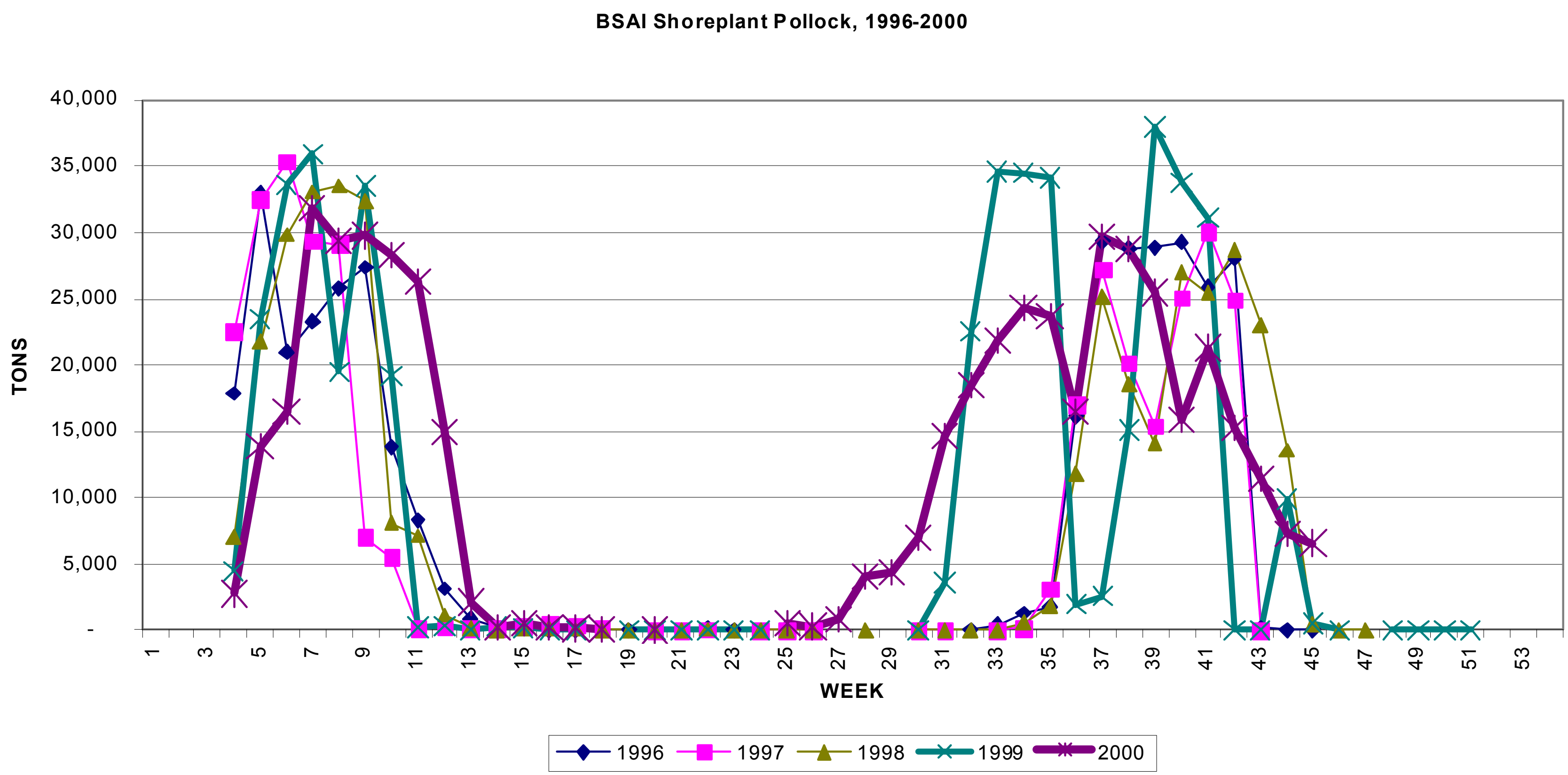


Figure 2.3.1-7. CP BSAI Pollock Processing Volume, 1996-2000

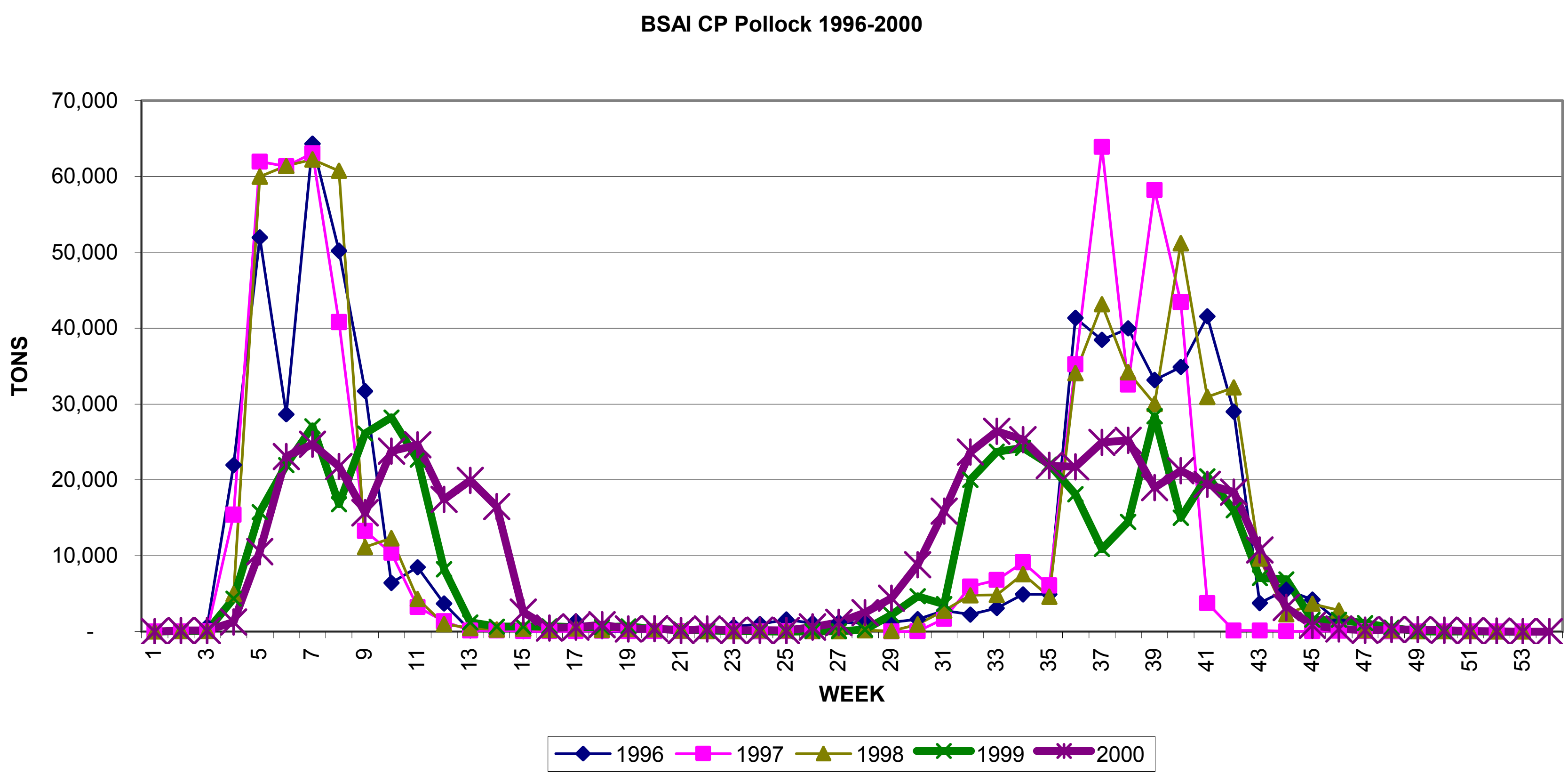


Figure 2.3.1-8. Mothership BSAI Pollock Processing Volume, 1996-2000

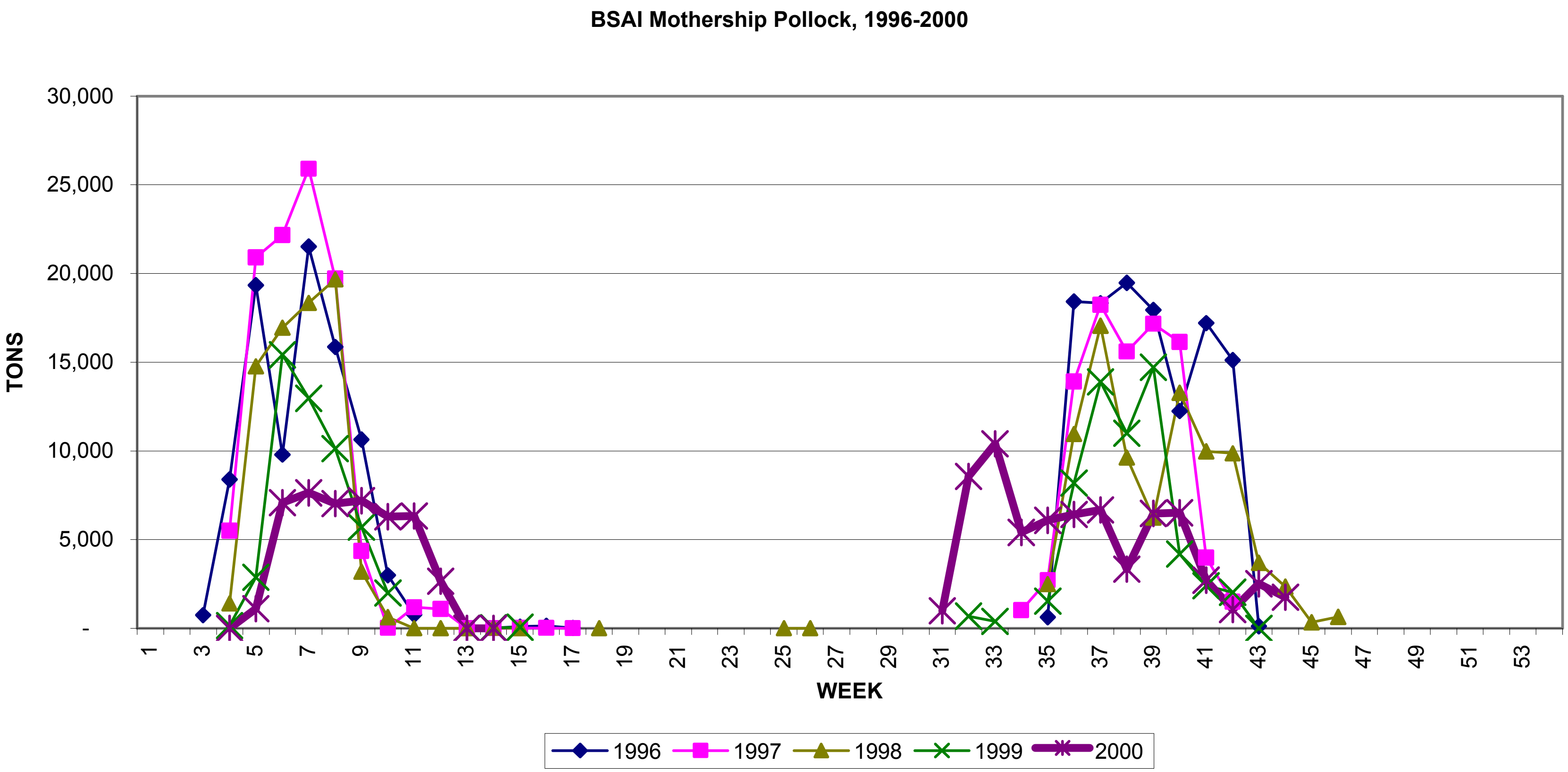


Figure 2.3.1-9. Shoreplant GOA Pollock Processing Volume, 1996-2000

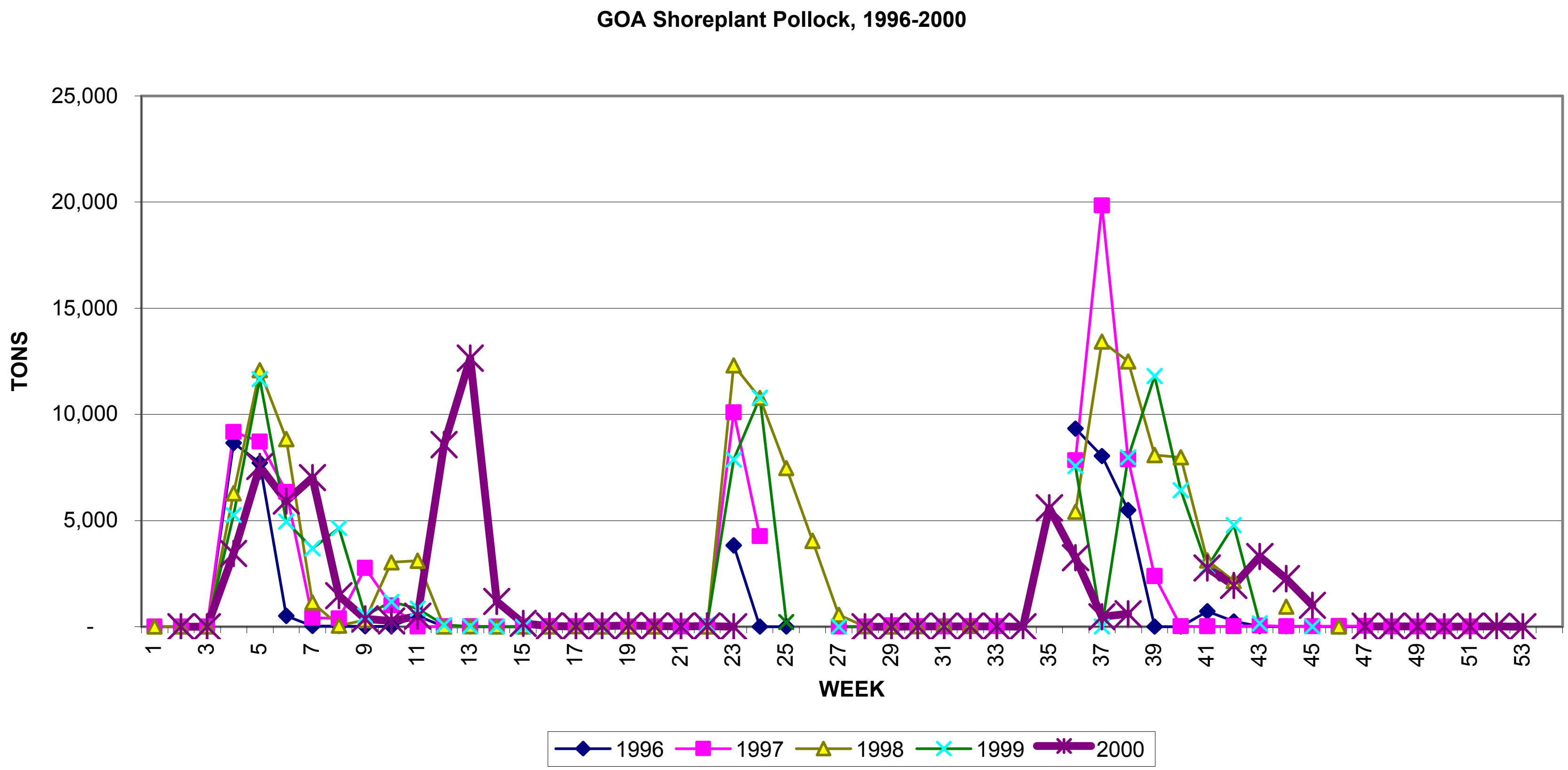
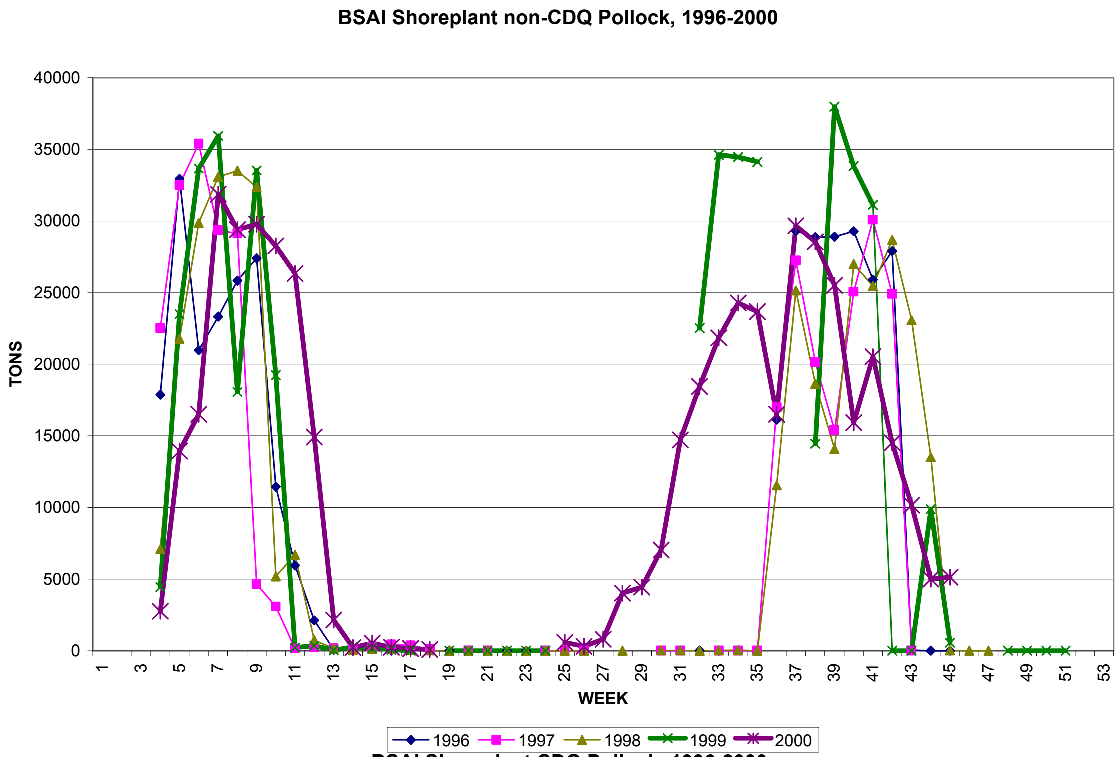


Figure 2.3.1-10 shows BSAI shoreside precessed non-CDQ and CDQ pollock for the years 1996-2000. As shown, there is high variability from year to year, with no readily apparent trend. For 2000 however, CDQ pollock disappears from the A/B season time period, and is present at a much lower level than for some previous years and for 1999 in particular.

Figure 2.3.1-11 illustrates the role of CDQ pollock relative to overall processing volume and timing for BSAI catcher processors. As shown, CDQ pollock tended to be taken before and after the open access season for the pre-AFA years. Although the absolute (or calendar) timing pattern has not changed from a general perspective (bimodal distribution within the first and second major processing periods each year, and around the same time each year), the CDQ peaks now tend to occur within the main non-CDQ effort interval, not outside it. This is due to the effective lengthening of the non-CDQ season with the change over to the AFA co-op context. Another point easily seen in this figure is the relatively high peak of CDQ volume in 1998, the last year prior to AFA co-ops and fleet reduction, compared to all other years within the 1996-2000 timeframe.

Figure 2.3.1-12 shows analogous data for mothership processing of BSAI non-CDQ and CDQ pollock. The charts illustrate clearly that prior to AFA, CDQ fish were taken before and after the open access portion of the fishery. Once AFA was implemented in 2000, CDQ harvest shifted to the "main" seasons. CDQ peaks are higher for 2000 in previous years. It is difficult to assess the "importance" of CDQ fish to the catcher processor and motherships sectors as sectors, since not all members of a sector participate in the CDQ fishery. Further, it is also difficult to assess the importance of CDQ fish to individual operations, as each such operation is understandably hesitant to reveal any confidential information about its business practices. Since in many cases the CDQ partner has purchased a partial ownership share in its offshore processing partner, however, one can safely conclude that CDQ fish are closely integrated into these operations and are a very important component of the entity's business plan.

Figure 2.3.1-10. Shoreplant BSAI CDQ and Non-CDQ Pollock Processing Volume, 1996-2000



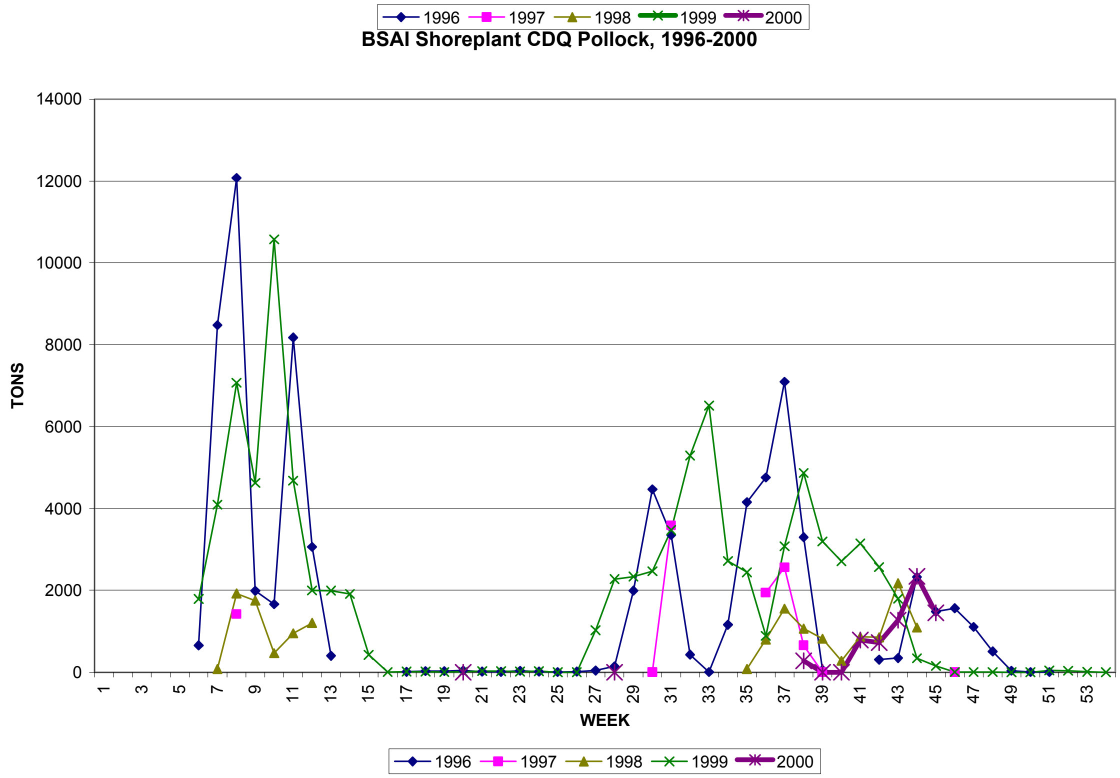
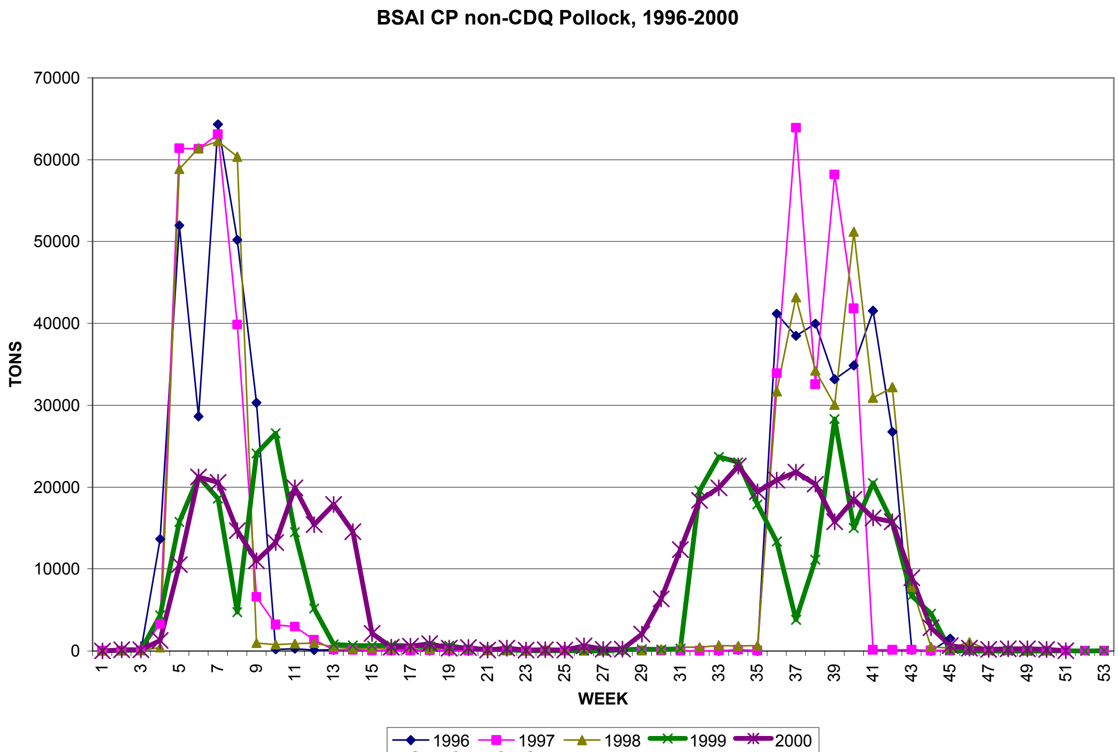


Figure 2.3.1-11. CP BSAI CDQ and Non-CDQ Pollock Processing Volume, 1996-2000



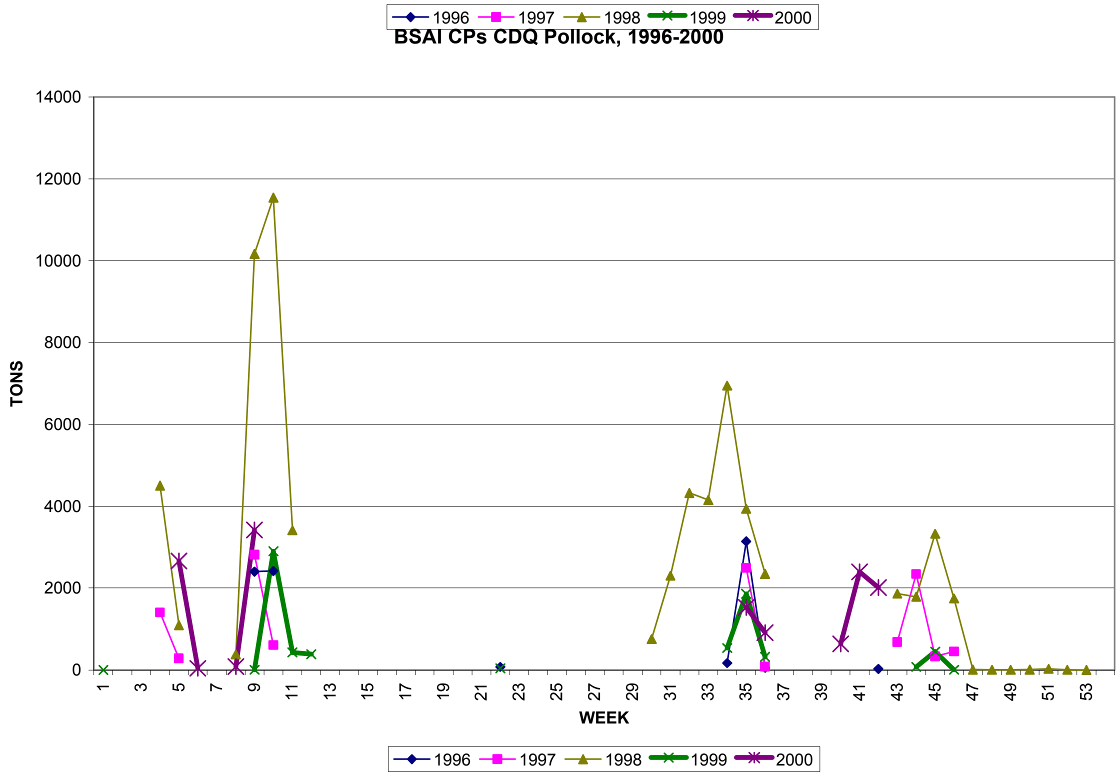
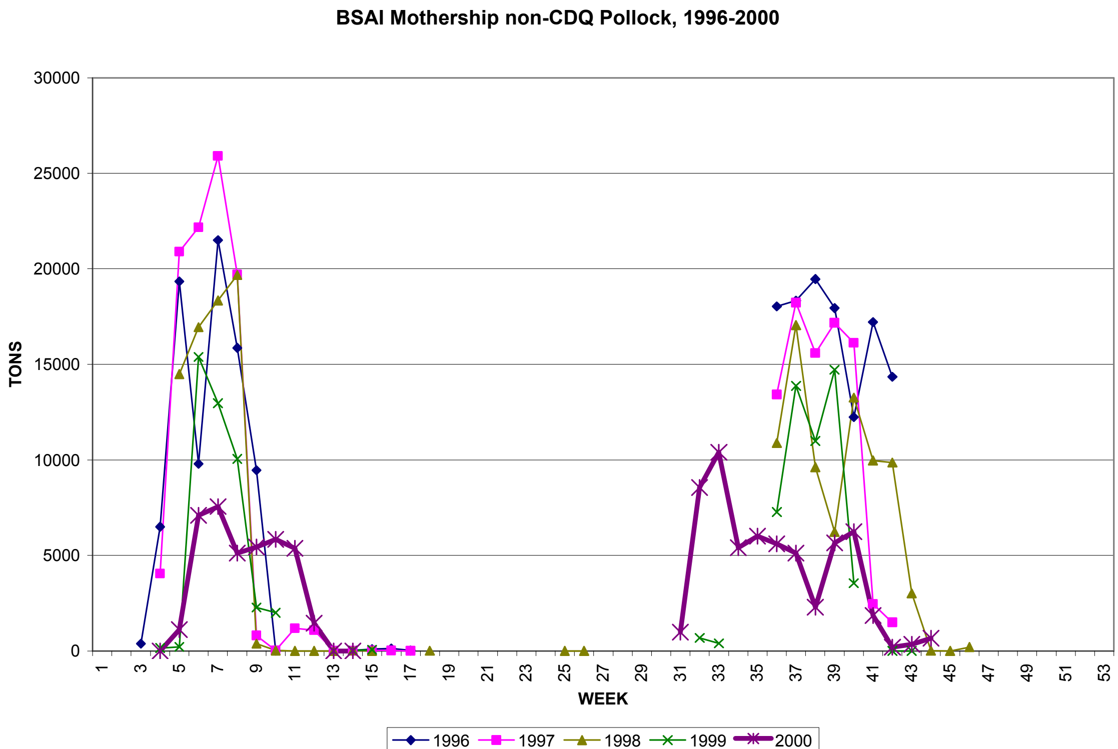
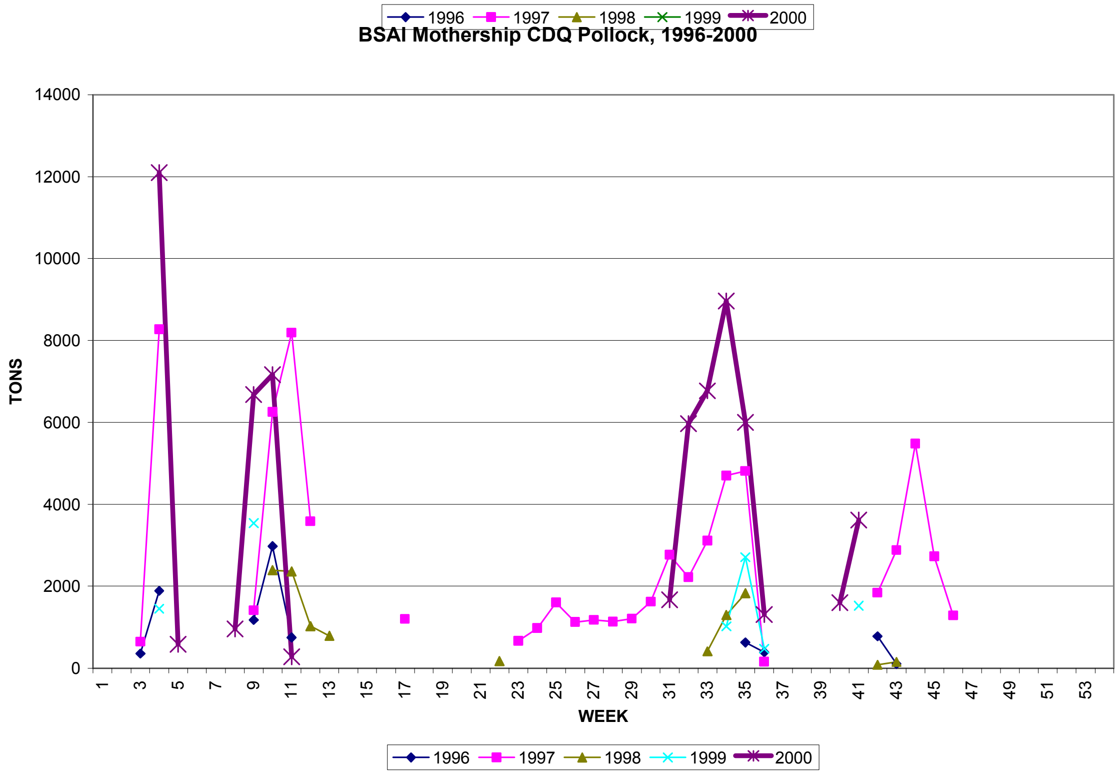


Figure 2.3.1-12. Mothership BSAI CDQ and Non-CDQ Pollock Processing Volume, 1996-2000





2.3.2 Alaska Peninsula and Aleutian Islands Region

2.3.2.1 Regional Characterization

Overview. AKAPAI region is, in several ways, the center of the Alaska groundfish fishery in general and the Bering Sea pollock fishery in particular. The adjacent FMP area features the greatest groundfish harvest, and it sees activity from virtually all onshore and offshore fishery sectors. During 1991-1999, this region accounted for more than four times the volume of groundfish processed inshore then in the other Alaska regions combined. This volume includes 89 percent of the pollock, 68 percent of the Pacific cod, 53 percent of the flatfish, and 20 percent of the ARSO processed. Relative dependence on the groundfish fishery varies across communities in the region: four of Alaska's top five groundfish landing ports are in this region, but some other communities in the region have little if any direct involvement with the fishery.

Population. The AKAPAI region has the smallest population (6,934 in 1997) of the four Alaska regions characterized. The regional population has declined in recent years with the closure of the military installation at Adak, formerly the largest community in the region. Unalaska (population 4,178) is the largest community in the region, and the number one fishing port in the nation for value and volume of catch landed. Of the other four communities with more than 200 residents, three (Akutan [population 408], King Cove [population 691], and Sand Point [population 842, the second largest community in the region]) are substantially involved with the groundfish fishery and are the sites of large processing facilities. These communities have a disproportionately male population, consistent with a predominantly male workforce at the seafood plants that, in turn, comprises a significant proportion of the total community population. Although they vary between plants and communities, processor workforces tend to be made up of short-term residents housed in industrial-enclave-type settings.

Employment and Income. AKAPAI communities have a wide range of employment opportunities and income levels. These opportunities are closely related to the commercial fishery in general, and the groundfish fishery in particular. Communities with sizeable seafood processing operations (Akutan, King Cove, Sand Point, and Unalaska) have very low unemployment rates. Processing workers tend to be in the community because of the employment opportunity, tend to leave when employment terminates, and comprise a significant portion of the population. Among civilian employment sectors, manufacturing, typically associated with seafood processing in this region, has dominated employment. In 1997, 2,989 persons were employed in manufacturing, almost five times as many as in the next most important sector, state and local government. Regional personal income and earnings from manufacturing exceeded earnings of all other sectors combined in 1997.

Tax and Revenue. Commercial-fisheries-related taxes are important to the region in absolute and relative terms. Akutan, King Cove, Sand Point, and Unalaska all have local raw fish taxes, and the first three have a borough raw fish landing tax. Fisheries-related shared taxes accounted for 99.7 percent of all the shared taxes and fees coming to the region from the state in 1999, and total fisheries-related tax revenues exceeded $7 million. The offshore processing component paid more than $2 million in Fisheries Resource Landing tax in 1999. This tax is considerably more important in AKAPAI in both absolute and relative terms than for any other Alaska region.

Inshore Processing. In AKAPAI, pollock comprises more than 83 percent of the groundfish volume processed, 13 percent Pacific cod, and flatfish and ARSO 3 percent and 1 percent, respectively. This pattern by species varies considerably from patterns in other Alaska regions. At 544,100 total reported metric tons of groundfish and 191,000 metric tons of total groundfish final product in 1999, AKAPAI dominates the other regions in inshore processing. With a total product value of $325 million and a value of $598 per metric ton, this region has the highest total value (reflecting enormous volume processed) and the lowest value per ton (reflecting disproportionate dependence on pollock).

Processor Ownership. Though the center of processing activity, AKAPAI has by far the least ownership of groundfish processing entities of any Alaska region. None of the largest shore plants are owned by residents, and the number of smaller inshore plants owned varied between zero and two per year over the period 1991-1999. To the extent that economic benefits flow to the location of ownership, these benefits leave the region. Because of the small number of entities, information on volume and value of groundfish processed cannot be disclosed.

Catcher Vessel Ownership and Activity. Groundfish catcher vessel ownership is lower in AKAPAI than in any other region. In recent years, none of the AFA trawl catcher vessels (which supply a very large proportion of the groundfish processed in the region) have been locally owned. Ownership is clustered in two vessel classes TCV ≥ 60' and FGCV 33'-59' that tend to work the nearshore fisheries in the GOA. These vessels are owned primarily by Sand Point residents, with secondary clusters in Unalaska and King Cove. In 1999, these vessels employed 349 persons, with $3 million in payments to labor in groundfish. In 1998, 97 percent of the retained harvest from these vessels came from the WG and CG FMP areas. About 59 percent was Pacific cod, and 40 percent was pollock.

Harvest Diversity. For groundfish catcher vessels owned by regional residents, groundfish has accounted for roughly half of the ex-vessel value for major fisheries since 1996, a substantial increase over the early 1990s. These vessels are primarily dependent on the groundfish and salmon fisheries, as each of these two fisheries is economically more important by a factor of four or more than any other fishery. About 7 out of 10 vessels participated in the salmon fishery, about one-third in the halibut fishery, and about one-quarter in crab or other fisheries.

Processing Diversity. For the smaller groundfish processing plants in the region, groundfish roughly accounted for between 10 and 25 percent of ex-vessel value of landings during 1991-1998, with a general increase over this period. In 1998, groundfish accounted for 23 percent of value, while salmon and crab accounted for 30 and 44 percent, respectively. For the larger Bering Sea pollock inshore plants, groundfish has accounted for more than 50 percent of ex-vessel value of landings from 1991-1998, and well over 60 percent of value for 1995-1997. At these larger plants in 1998, crab accounted for roughly the same proportion of total value as in the smaller AKAPAI inshore plants, and groundfish alone accounted for roughly the same value as groundfish and salmon combined in the smaller plants.

Subsistence. Akutan, King Cove, Sand Point, and Unalaska have a subsistence resource consumption ranging from about 200 pounds per capita to more than 450 pounds per capita. Of this total, groundfish specifically ranges from 4 to 9 percent of the total.

Tables 2.3.2-1 through 2.3.2-4 summarize information on regional engagement with the groundfish fishery through 1999, the last year pre-AFA onshore co-ops.

Table 2.3.2-1. North Pacific Groundfish Fishery Participation Measures for the Alaska Peninsula and Aleutian Islands Region by Year, 1991-1999

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999
Processor Employment and Payments to Labor									
Employment (Est. FTEs)	NA	1,503	1,463	1,631	1,850	1,996	1,860	1,752	1,997
Payments to Labor ($Millions)	NA	112	66	88	116	100	99	92	98
Groundfish Processing by Regional Inshore Plants									
Reported Tons (Thousands)	NA	518.3	534.2	551.7	567.2	548.2	532.5	486.5	544.1
Product (Thousands of Tons)	NA	153.1	152.6	172.8	183.2	177.6	176.2	165.2	191.0
Utilization Rate (Percent)	NA	29.5	28.6	31.3	32.3	32.4	33.1	34.0	35.1
Product Value ($Millions)	NA	374.0	217.9	291.4	386.6	331.6	330.5	304.4	325.2
Value per Ton ($)	NA	721.5	407.8	528.2	681.6	605.0	620.7	625.6	597.7
Processors Owned by Regional Residents									
No. of Processors Owned	0	0	1	1	4	3	3	2	2
Reported Tons (Thousands)	0	0	0	0	0	0	0	0	0
Wholesale Value ($Millions)	0	0	0	0	0	0	0	0	0
Catcher Vessels Owned by Regional Residents									
No. of Catcher Vessels	74	87	52	80	93	91	103	89	NA
Employment (Persons)	285	291	203	298	360	340	378	349	NA
Payments to Labor ($Millions)	2.5	2.3	1.4	1.8	2.0	3.1	3.9	3.0	NA

* Value suppressed due to the confidentiality of the data.
NA = Not available

Table 2.3.2-2. Groundfish Reported by BS Pollock and Alaska Peninsula and Aleutian Island Inshore Plants by Species, 1999

	Total Reported Harvest by Species				
	FLAT	ARSO	PCOD	PLCK	Total
Reported Tons	9,501	4,057	56,111	474,401	544,070

Source: NMFS Blend Data, 1991-1999.

Table 2.3.2-3. Retained Harvest by Catcher Vessels Owned by Residents of the Alaska Peninsula and Aleutian Islands Region by FMP Subarea, 1998

	Retained Harvest and Ex-Vessel Value by FMP Subarea					
	AI	BS	WG	CG	EG	Total
Retained Tons (Thousands)	0.0	0.7	19.0	8.0	a	27.8
Ex-Vessel Value ($Millions)	0.0	0.4	5.4	1.6	a	7.4

[a] Due to the confidentiality of the data presented, this value has been added to the CG value.

Table 2.3.2-4. Retained Harvest by Catcher Vessels Owned by Residents of the Alaska Peninsula and Aleutian Islands Region by Species, 1998

	Retained Harvest and Ex-Vessel Value by Species				
	ARSO	FLAT	PCOD	PLCK	Total
Retained Tons (Thousands)	0.2	0.0	16.3	11.2	27.8
Ex-Vessel Value ($Millions)	0.3	0.0	5.5	1.5	7.4

Table 2.3.2-5 provides information by processing sector ownership for pre- and post-AFA conditions in the AKAPAI region using a different data set than was used to develop the tables immediately above (although both, ultimately, rely on federal blend data). Recognizing that there are differences in the underlying data sets that restrict comparability, the intent of this table (and the analogous table that is provided for each of the other regions) is to provide insight into the general trends that have been occurring, and to show the relationship of pre-AFA levels to post-AFA processing levels. As noted earlier, little of the processing capacity physically present in the AKAPAI region is actually owned within the region. Further, given ownership patterns and known limitations of assigning ownership within the data for this region in particular, the information on the mothership sector and catcher processors volume is probably best considered as "noise" for this region. For shoreplants, pollock processing is shown to increase in 1999 and 2000, the years post-Inshore/Offshore-3 and post-AFA quota shifts and co-op formation.

Table 2.3.2-5. Groundfish Processed by Sector by Species by Year for the AKAPAI Region, 1996-2000 (Reported Tons)

Species Group	1996	1997	1998	1999	2000
Mothership Sector					
ARSO	44	1			
FLAT	0	31			
PCOD	5,032	2,520	0		
PLCK	32,186	32,166	787		
Sector Total	37,263	34,718	787		
Catcher-Processor Sector					
ARSO		1	2	4	
FLAT	6,721	11,488	6,944	1,601	1
PCOD	657	725	523	139	493
PLCK	11,671	11,716	15,430	4,808	1
Sector Total	19,049	23,929	22,899	6,552	495
Shoreplant Sector					
ARSO	1,872	2,177	2,193	1,419	1,270
FLAT	6,118	18,447	1,693	2,389	3,802
PCOD	81,506	77,741	56,584	52,666	50,678
PLCK	388,298	364,171	378,565	443,060	480,350
Sector Total	477,794	462,535	439,035	499,534	536,122
Three Sector Total					
Grand Total	534,106	521,183	462,721	506,087	536,617

Source: Federal Blend Data provided by NPFMC staff

Table 2.3.2-6 provides information on the number of vessels owned by AKAPAI residents participating in the groundfish fishery, and the volume and value of their catch by species, for the period 1995-2000. Again, realizing that relatively few of the vessels that deliver to processors in this region are actually owned by residents of the region, this table does provide information on trends by species. A complicating factor in these data, however, is the trend of corporate ownership of vessels, such that location of owner may be less of an indicator of residence of skipper and crew than may have been the case in the past.

Table 2.3.2-6. Number of Boats and Retained Catch by Weight and Value by Species Category by Catcher Vessel Ownership by Region

AKAPAI

	Year					
Data	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
ARSO						
Sum of BOATS	12	30	33	25	36	27
Sum of TOTLBS	374,041	819,346	329,634	501,510	291,610	58,496
Sum of TOTDOL	702,062	789,208	586,888	324,239	426,570	57,035
Flatfish						
Sum of BOATS	6	16	24	16	16	22
Sum of TOTLBS	58,331	3,791,195	161,107	74,986	60,803	137,995
Sum of TOTDOL	13,432	696,325	18,080	1,098	2,839	16,101
Pacific Cod						
Sum of BOATS	114	92	122	98	100	108
Sum of TOTLBS	18,677,678	31,047,537	39,535,937	36,624,745	36,124,391	26,688,226
Sum of TOTDOL	3,565,889	4,919,514	6,870,950	5,638,547	8,726,411	5,577,576
Pollock						
Sum of BOATS	14	16	35	24	24	30
Sum of TOTLBS	10,872,375	17,126,597	25,576,416	24,660,187	21,599,445	19,259,437
Sum of TOTDOL	894,355	1,450,001	2,729,875	1,546,062	2,148,731	2,214,819
All Groundfish Species						
Total Sum of BOATS	117	103	128	105	105	111
Total Sum of TOTLBS	29,982,425	52,784,675	65,603,094	61,861,428	58,076,249	46,144,154
Total Sum of TOTDOL	5,175,738	7,855,048	10,205,793	7,509,946	11,304,551	7,865,531

NOTE: While vessel class definitions are the same as for the NMFS SEIS, criteria for inclusion in the classes was somewhat modified to remove “ghost” vessels or those with very limited participation (due to landed bycatch or other circumstances). Also, these totals are based on participation in any of the groundfish category fisheries (pollock pacific cod, flatfish, or “ARSO”) and thus may be more inclusive than for the NMFS SEIS for regions such as WA and OR. Thus vessel numbers may not agree exactly with those of the NMFS SEIS. Note also that the total sum of boats is not additive from the counts by species, as a single boat may appear in more than one species subtotal.

Source: Fish ticket information as processed by NPFMC staff

2.3.2.2 Regionally Important Groundfish Communities and AFA Impacts: Unalaska, Akutan, Sand Point, and King Cove

In this section, communities with the strongest direct links to the groundfish fishery are profiled in detail. These are Unalaska, Akutan, Sand Point, and King Cove. Unalaska and Akutan are located on the Bering Sea side of the Alaska Peninsula/Aleutian Island chain, while Sand Point and King Cove are on the Gulf of Alaska side. Nonetheless, a substantial portion of the groundfish processed in Sand Point and King Cove is harvested in the Bering Sea. Historically, relatively small amounts of groundfish harvested in the GOA have been delivered for processing in Dutch Harbor/Unalaska and Akutan.

At present, pollock and Pacific cod are the primary groundfish species landed and/or processed in these four ports. Alaska Department of Fish and Game fish ticket data indicate that in Dutch Harbor/Unalaska and Akutan, pollock represented 83 percent and 76 percent, respectively, of the 1997 total groundfish landings in these ports, with Pacific cod making up virtually all of the balance. In the case of Sand Point, pollock and Pacific cod, respectively, accounted for 69 percent and 29 percent of the total, with fractional percentages of other groundfish species accounting for the rest. In King Cove, this relationship was reversed, with pollock catch-share at 31 percent and Pacific cod at 69 percent of the groundfish total.

In the case of pollock, surimi is the principal product, and fillets are a distant second, although product mix has been changing in the post-AFA era. Several ancillary product forms (e.g., roe), as well as byproducts (e.g., white fish meal) are derived from pollock landings. Fillets are the primary product form produced from Pacific cod landings in these ports, although several lesser product forms (e.g., H&G) and byproducts (e.g., white fish meal) are also produced. The majority of the output from the processing operations in these landings ports is exported, principally to Asian markets, although some enters the domestic market for secondary processing and/or sale.

While changes in any groundfish TAC or changes in the pattern of distribution (AFA related or not), in either the GOA or BSAI management areas, could have indirect economic consequences for any or all of the principal ports, the impacts would be most severe and direct if pollock, and to only a lesser extent Pacific cod, TACs were in effect substantially reduced for whatever reason. Furthermore, these impacts would not be uniform in distribution across the four key Aleutian region groundfish landings ports, owing to geographic location, proximity to fishing grounds, plant capacity and capability difference, availability and variety of support facilities offered, and intermediate and final markets served.

Historically, the processors in each of these ports competed directly with the mothership and catcher/processor fleets which participate in many of these same fisheries. However, due to the inshore/offshore allocations of pollock in the BSAI, and the subsequent AFA provisions and associated co-ops, the competition for pollock occurs in seafood markets, not on the fishing grounds. Each sector has different capabilities and limitations. And, while each supplies some amount of product into common markets, each also has developed the potential to focus a portion of its operation on specific markets.

It is also worth noting that the AFA has consequences for communities in the region that are not currently significant groundfish processing communities. A prime example of this is Adak. While Adak is not a focus of this study, it is known that the Aleut Corporation is actively seeking to encourage development of a commercial fisheries economic sector at the former military installation. The AFA, by effectively excluding the possibility of entry of the community into pollock processing sector, has limited the growth of at least that one segment of the potential fisheries base. Of course, there may be other factors that would limit the development potential of Adak as a viable fisheries community (e.g., it is not a qualified CDQ community), but AFA does impose a hurdle to at least some types of development.

The following subsections examine community level AFA impacts in the communities of Unalaska/Dutch Harbor, Kodiak, Sand Point, and King Cove. Limited information for Akutan is also presented. As each of these communities vary widely in their structure, history of engagement with the fishery, and contemporary engagement with the fishery, summary profile information is presented to provide a context for the discussion of AFA impacts.

UNALASKA/DUTCH HARBOR

Unalaska is located approximately 800 miles southwest of Anchorage and 1,700 miles northwest of Seattle. Unalaska is the 11th largest city in Alaska, with a reported year-round population of just over 4,000. Dutch Harbor is the official name of the city's port, and is also often applied to the portion of the City of Unalaska located on Amaknak Island, which is connected by bridge to the rest of the community on Unalaska Island. The geographic feature of Dutch Harbor itself, along with Amaknak Island, is fully contained within the municipal boundaries of the City of Unalaska, which encompasses 115.8 square miles of land and 98.6 square miles of water.

Unalaska is in a unique position with respect to the Bering Sea groundfish fishery. It is the site of both the most intense onshore and offshore sector activity. Unalaska is a community whose economy is strongly tied to Bering Sea commercial fisheries in general, and the groundfish fishery in particular. Among groundfish species, pollock plays a particularly important role in local operations.

Unalaska has been variously described as a growing, developing, and maturing community. Whatever descriptor is chosen, during the span of years since the development of the groundfish fishery, Unalaska has seen an impressive amount of community development. The changes that have accompanied this development are both obvious and subtle. Unalaska has clearly felt a number of community level impacts as a result of the AFA. Quantifying those impacts is difficult, given other changes occurring in the community and other changes occurring in the fisheries, but nonetheless a range of impacts can be meaningfully discussed in qualitative terms.

Population

It has always been difficult to ascertain total population figures for Unalaska or, to state it more accurately, it is difficult to interpret and compare the figures given for the population of Unalaska over the years. Over the years, Unalaska has been a 'less than permanent' home to many individuals whose length of stay in the community has varied. Some individuals may stay in Unalaska only a fishing season or two; others may stay for many years before moving on. These individuals have been counted in different ways, or not counted at all, in a number of censuses. Caution must therefore be used in interpreting total population figures from various sources.

Even though the total population of Unalaska has grown, the contemporary community maintains a relatively high transient population. This transient population includes workers at shore processing plants, although this particular population segment is notably less transient as the nature of the business of the shore plants has changed. Once characterized by rapid turnover during the King crab processing boom in the late 1970s, though more-or-less year-round processing during the early years of full-scale pollock processing, the current pattern is marked with peaks and valleys coinciding primarily with the pollock and, to a lesser extent, crab seasons, by maintenance of a ‘core crew’ of year round individuals who process lower volume species that are harvested at other times of the year and maintain the plant. (This topic is more fully addressed in the shore plant sector description in this document.)

In addition to the shore-resident (some of whom are short-term residents) population, there are also a number of individuals who may be thought of as a "floating population" associated with the community. These individuals are from fishing fleets, floating processors, catcher/ processors, and freighters that stop at the port of Unalaska for resupply. There are no current estimates of the "floating population," though such a figure was assembled for the year 1990 and is presented in Table 2.3.2-7 below. Although not true residents of the community of Unalaska, this "floating population" does have an impact on the community of Unalaska. They are associated with business and revenue generated in and for the city, and with services required of the City. Unalaska is, at least seasonally, where they live and work.

Table 2.3.2-7. Estimates of Floating Population Community of Unalaska, 1990

Vessel Type	Estimated Vessels	Average Crew Size	Floating Population
Trawlers			
Catcher Vessels	110	5	550
Catcher/Processors	60	75	4,500
Floating Processors Only	2	160	320
Longline			
Catcher Vessels	100	6	600
Catcher/Processors	20	25	500
Floating Processors Only	16	25	400
Crab			
Catcher Vessels	225	5.5	1,238
Catcher/Processors	25	22	550
Floating Processors Only	13	70	910
Cargo Vessels	350	25	8,750
Total Floating Population			18,318

Source: American Trawlers Assoc.; Alaska Crab Coalition; State of Alaska Dept. of Fish and Game; Resource Inventory and Analysis, Volume II, Aleutians West Coastal Resource Service Area, March 1990; The In-shore/Offshore Dispute; Impact of Factory Trawlers on Fisheries in the North Pacific and Proposals to Regulate the Fleet, The North Pacific Seafood Coalition, March 1990; and subsequent consultation with on-site resource Sinclair Wilt, Supervisor, Alyeska Seafoods, Unalaska. (Cited from Professional Growth Systems, Inc. 1990:12).

The characterization of Unalaska's "non-transient" population is not without its own difficulties, as the nature of the community has changed over the years. Discussion and analytical categorization of the less transient portions of the Unalaska population differ in various publications on the community. "Permanent" residents of the community have been described as those individuals for whom Unalaska is their community of orientation, independent of their employment status. "Semi-permanent" or “long-term transient" residents are those individuals for whom Unalaska is now their community of residence, but for whom residency decisions are based virtually exclusively on employment criteria. In other words, a "permanent resident," as that term is used in this document, is an individual who considers Unalaska "home" and is highly unlikely to move from the community due to termination of a particular job. These individuals tend to remain in the community and seek other employment if a specific job ends, and they also typically remain in the community after their retirement from the labor force. A "semi-permanent" or "long-term transient" resident, on the other hand, is an individual who typically has moved to Unalaska for a particular employment opportunity and is highly likely to leave the community if that specific employment opportunity is terminated for any reason. These individuals may indeed remain in the community for a number of years, but their residency decision-making process is predicated on Unalaska being first and foremost a work site. Obviously, the categories "permanent" and "semi-permanent" or "long-term transient" resident are not precise terms, nor do they necessarily correspond to administrative/regulatory decisions about ‘official’ residency (e.g., whether or not one is classified as an “Alaska resident” for employment statistical reporting or taxation purposes) but they are analytically useful where they conform to specific orientations toward the community that serve to shape community politics, development objectives, community perception, etc.

Ethnicity

Unalaska may be described as a plural or complex community in terms of the ethnic composition of its population. Although Unalaska was traditionally an Aleut community, the ethnic composition has changed with people moving into the community on both a short-term and long-term basis. Not surprisingly, in the latter half of this century, population fluctuations have coincided with periods of resource exploitation and scarcity.[29] For example, the economic and demographic expansion associated with the King crab boom in the late 1970s and early 1980s brought many non-Aleuts to Unalaska, including Euro-North Americans, Filipinos, Vietnamese, Koreans, and Hispanics. The Euro-American population shows a distinct change over the years, comprising around 30 percent of the population in 1970, over 60 percent in 1980 and 1990, and then back to 44 percent in 2000. The growth of Asian/Pacific Islander population (over 30 percent by 2000) is closely associated with the increasingly residential nature of the seafood processing sector workforce. The ethnic composition of Unalaska's population for the census years 1970, 1980, 1990, and 2000 appears in Table 2.3.2-8.

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[29] The most dramatic population shift of this century, however, was brought about by World War II. The story of the War, and the implications for the Aleut population of Unalaska and the other Aleut communities of Unalaska Island, is too complex and profound for treatment in this limited community profile. It may be fairly stated, however, that the events associated with World War II, including the Aleut evacuation and the consolidation of the outlying villages, forever changed the community and Aleut sociocultural structure.

Table 2.3.2-8. Ethnic Composition of Population
Unalaska; 1970, 1980, 1990 & 2000

Race/Ethnicity	1970		1980		1990		2000	
	N	%	N	%	N	%	N	%
White	56	31.0%	848	64.1%	1,917	62.1%	1,893	44.2%
African American	0	0.0%	19	1.5%	63	2.0%	157	3.7%
Native Amer/Alaskan	113	63.4%	200	15.1%	259	8.4%	330	7.7%
Aleut	107	60.1%	-	-	223	7.2%	-	-
Eskimo	5	2.8%	-	-	5	0.2%	-	-
American Indian	1	0.5%	-	-	31	1.0%	-	-
Asian/Pacific Islands*	-	-	-	-	593	19.2%	1,336	31.2%
Other**	9	5.6%	255	19.3%	257	8.3%	567	13.2%
Total	178	100%	1,322	100%	3,089	100%	4,283	100%

* In the 2000 census, this was split into Native Hawaii and Other Pacific Islander (pop 24) and Asian (pop 1,312)
** In the 2000 census, this category was Some Other Race (pop 399) and Two or more races (pop 168).
Source: 1970 data, University of Alaska, 1973; 1980, 1990, and 2000 data, U.S. Bureau of Census.

Table 2.3.2-9 provides information on group housing and ethnicity for Unalaska. Group housing in the community is largely associated with the processing workforce. As shown, 52 percent of the population lived in group housing in 1990. Also as shown, the total minority population proportion was substantially higher in group quarters (49 percent) than in non-group quarters (31 percent).

Table 2.3.2-9. Ethnicity and Group Quarters Housing Information, Unalaska, 1990

Unalaska City	Total Population		Group Quarters Population		Non-Group Quarters Population	
	Number	Percent	Number	Percent	Number	Percent
White	1917	62.06	870	53.90	1047	70.98
Black	63	2.04	55	3.41	8	0.54
American Indian, Eskimo, Aleut	259	8.38	20	1.24	239	16.20
Asian or Pacific Islander	593	19.20	434	26.89	159	10.78
Other race	257	8.32	235	14.56	22	1.49
Total Population	3089	100.00	1614	100.00	1475	100.00
Hispanic origin, any race	394	12.75	337	20.88	57	3.86
Total Minority Pop	*1252*	*40.53*	*795*	*49.26*	*457*	*30.98*
Total Non-Minority Pop (White Non-Hispanic)	*1837*	*59.47*	*819*	*50.74*	*1018*	*69.02*

Source: Census 1990 STF2

Apart from the War years, prior to the growth of the current commercial-fisheries-based economy that traces its present configuration back to 1970s, Unalaska was traditionally an Aleut community. With the growth of the non-Aleut population, Aleut representation in the political and other public social arenas declined significantly. For example, in the early 1970s, Aleut individuals were in the majority on the city council; by the early 1980s, only one city council person was Aleut (IAI

1987:65). If one looks at Aleuts (or Alaska Natives) as a percentage of the total population, the change over the period of 1970 - 1990 is striking. In 1970, Aleut individuals made up slightly over 60 percent of the total community population (and Alaska Natives accounted for a total of 63 percent of the population). In 1980, Alaska Natives, including Aleuts, accounted for 15 percent of the population; by 1990, Aleuts comprised only 7 percent of the total community population (with Alaska Natives as a whole accounting for 8 percent of the population). Overall representation was similar in 2000. This population shift is largely attributable to fisheries and fisheries-related economic development and associated immigration. The fact that there is a "core" Aleut population of the community with a historical continuity to the past also has implications for contemporary fishery management issues. These include the activities of the Unalaska Native Fisherman Association and active local involvement in the regional CDQ program. While neither of these undertakings exclude non-Aleuts, Aleut individuals are disproportionately actively involved (relative to their overall representation in the community population).

During field interviews for this project, a number of individuals, including local governmental officials and individuals from various private sector enterprises, commented that it appeared to them that there were less people overall in the community in the 2000-2001 period than in the recent past, although there are no hard data available to verify this. Speculation included that with the apparent slow-down in the local support service economy with the AFA-related cessation of the race for fish within the pollock fishery, there has been some population loss among the permanent population, but again, there is no quantitative information available to check this speculation. Anecdotal evidence cited by interviewees include less participation in city-sponsored recreational sports (e.g., the basketball league has seen a drop in the number of teams), and an easing of the shortage of housing (discussed below).

Age and Sex

In the recent past, and particularly with the population growth seen in association with the development of the commercial fishing industry, Unalaska's population has had more men than women. Historically, this has been attributed to the importance of the fishing industry in bringing in transient laborers, most of whom were young males. Table 2.3.2-19 portrays the changes in proportion of males and females in the population for the years 1970, 1980, and 1990 (2000 census data for this variable are not yet available).

Table 2.3.2-10. Population Composition: Age and Sex
Unalaska; 1970, 1980, and 1990

	1970		1980		1990	
	N	%	N	%	N	%
Male	98	55%	858	65%	2,194	71%
Female	80	45%	464	35%	895	29%
Total	178	100%	1,322	100%	3,089	100%
Median Age	26.3 years		26.8 years		30.3 years	

Census data from the period 1970-1990 showed a climb in median age from 26.3 years to 30.3 years. This is commonly attributed to the relative size of the workforce in comparison to resident families. That is, there is quite a large proportion of adult residents included in the census counts who are not raising children in the community, thereby raising the median age. On the other hand, what the median age information does not portray is that older age bracket residents (i.e., those individuals typically past their 'working years') tend to be under-represented in Unalaska compared to the general population, as few non-lifetime residents of the community chose to stay in Unalaska in their retirement years. There are no indications that the AFA has had an impact on either the male-female balance nor the age distribution pattern, although there are no quantitative data available to verify this.

School district enrollment figures are presented in Table 2.3.2-11. This is another indicator of the changing nature of Unalaska's population over the time period portrayed. One can see in the enrollment figures, for example, the enrollment decline that followed the economic decline of the fishing industry in the early 1980s, following the crash of locally important King crab stocks. Enrollments have increased from the late 1980s onward, reflecting two trends, according to school staff. One is the overall growth of the community, and the other is the increase in the number of people who are making Unalaska home for their families. As shown, however, the growth has leveled off recently. The City is in the process of expanding the school, but the issue of whether or not to proceed with the expansion during a time of overall population decline and a leveling off of student population in particular was the subject of debate and a highly contested ballot measure in the community, with the decision to proceed with the expansion passing by a handful of votes.

Table 2.3.2-11. Unalaska City School District Enrollment, Fiscal Years 1978-2001

Fiscal Year	School Enrollment
FY 78	133
FY 79	140
FY 80	200
FY 81	186
FY 82	191
FY 83	151
FY 84	140
FY 85	140
FY 86	137
FY 87	159
FY 88	159
FY 89	159
FY 90	225
FY 91	256
FY 92	290
FY 93	330
FY 94	359
FY 95	356
FY 96	353
FY 97	373
FY 98	380
FY 99	353
FY 00	352
FY 01	352

Source: Unalaska City School, 2001

The link between the fisheries and school population can in part be seen through a categorization of the employment, by sector, of parents of Unalaska school children as ascertained by the Unalaska School District as of January, 2000 and shown in Table 2.3.2-12. As shown, the largest single sector was government/public, but fish processing and fishing support accounted for 36 percent of the total. According to school staff, the assignment of individual employers/entities to these categories (especially the "fishing support" category) is inexact, but they do give an indication of the relative strength of ties of the different sectors to the school population. Overall figures have not changed post-AFA, but no study of possible shifts of parental employment between sectors has been done since early 2000. One trend that senior staff did note during interviews was an increase in students for whom English is a second language. According to senior school staff, 47 percent of the 2000-2001 kindergarten class were 'ESL' (English as a second language) students. Also, according to school staff the Unalaska City School District was recently named in a poll as one of the top 100 school districts in the country, and placed first in the state in exit exam scores, which has spurred an increase in enrollment of students from smaller villages in the region. For the most part, these are individuals who have chosen to stay with relatives in Unalaska to take advantage of the local educational opportunities, but there is now more opportunity for families to relocate to Unalaska from other regional communities with easing of the local housing shortage.

Table 2.3.2-12. Parent Employment by Sector, Unalaska City School District Fiscal Year 2000

Parent Employment Sector	Percentage
Government/Public	28%
Fish Processing	18%
Fishing Support	18%
Retail/Restaurant/Services	17%
Transportation/Freight	16%
Self Employed/Unemployed	3%
Total	100%

Source: Unalaska City School District, 2001

Housing Types and Population Segments

Household types in Unalaska vary by population segment, although this has changed in recent years. In the early 1990s, it was a truism that virtually all permanent residents lived in single-family dwellings, whereas short-term workers lived in group housing at work sites. This pattern has changed somewhat over the years with the construction of a number of multi-unit complexes not associated with particular employers. It is still the case, however, that processing workers for the seafood plants tend to live in housing at the worksite and longer-term workers at the shoreplants tend to live in company housing adjacent to worksites. One seafood processor, however, owns multi-family dwellings in what is otherwise primarily a single-family residential area, so its workforce tends to be differently distributed geographically than other workforces. Some residents of the community have drawn the distinction, with respect to processing firms, that one is not 'fully' a resident of the community unless one has a private residence in the community (i.e., that the 'test' of 'real' residency is tied to whether or not one lives in company-provided housing). This distinction breaks down, however, when one examines the issue on a detailed level, as a number of companies (and not just seafood firms) provide or subsidize housing for employees in Unalaska both adjacent to and separate from their worksite locations; also, the persons living in such residences may, in fact, stay in the community for considerable lengths of time (outstaying many in 'private' residences) and become centrally involved in community life.

The housing market has also changed during the period 1998-2001. Through the mid-1980s and the 1990s, housing was at a premium in the community, with virtually zero vacancy rates and waiting lists for rental opportunities. According to city staff, as of 2000, housing and rental prices had not appreciably dropped, but demand has slackened considerably such that there are no longer waiting lists maintained by some of the larger housing owners. According to the city appraiser and planning staff, home sales were slower than in the past, and there was some concern about declines in value, but those concerns had not yet been realized. This was still the case during 2001 fieldwork. As of 2001, according to the city appraiser, there had been no appreciation in housing value for the past three years (1998-2001), meaning that housing values, though stable in absolute terms, had not kept pace with inflation. A slowdown started approximately five years ago, after a period of appreciation estimated at 10 percent per year. Housing has continued to stay on the market for long periods, but a quantification of this trend, according to the appraiser, is not possible with existing data. There are no realtors in the community, so there is no way to track when individual properties go on or off the market. Also according to the City, although rental demand is off, rents have not yet begun to drop in response to decrease in demand. This "softening" of the housing market is directly attributed by most to recent changes in the local fishery, including the slowing of the "race for fish" in the pollock fishery that was made possible by the AFA and the formation of co-ops, among other fishery related factors.

The most recent housing market survey conducted by the City (November, 2000) noted that there has been "some curiosity expressed" about how 31 new units in the community will effect the rental market. These units include 16 apartments and 15 single-family dwellings for low-income residents (with the single-family dwellings further restricted to Alaska Native/Native American residents). Until very recently, the impact of the addition of new units to the community housing stock on rental rates would not have arisen as an issue. This same survey found that "while only one participant [in the survey] acknowledged lowering rental rates, several of the others acknowledged changing some of their rental policies, e.g., no last month deposit or renting to the general public if units are not required for employees." According to interview data, some landlords are now including fuel or utilities costs in the rental price, with the owner of the largest stock in the community including utilities. In other words, landlords, while not dropping the base rental rates have made 'soft' changes to costs to decrease expenses to renters. The housing survey also found that the upper range for housing costs had decreased slightly between 1997 and 2000 for apartments, whereas the costs for single-family dwellings increased slightly over this same period.

Another recent change in housing mentioned in interviews is that companies (other than the major seafood processors) are less likely to supply housing for workers than was the case in the past. This is reportedly due to their being more housing available on the market now, such that companies do not feel forced to tie up housing units for the entire year to be able to meet employee housing needs during peak demand periods. While there are no systematic data available to document this common assertion, the City of Unalaska has discontinued the practice of holding long-term housing leases, which until very recently was a common practice due to the local housing shortage. According to City staff, as of early 2001, the City retained just one lease for housing, and this was on a month-to-month basis. As of fieldwork in early 2001, there were rental vacancies in the community. One long term resident noted that the local access television channel now commonly runs postings for rental opportunities whereas in the recent past virtually all rental opportunities were communicated by word of mouth and openings never had a chance to hit the open market.

Links to the Groundfish Fishery

In the late 1970s and early 1980s the community prospered significantly from the King crab fishery. The crab boom resulted in a dramatic increase in both fishing boats and processors in town. In the mid-seventies there were from 90 to 100 commercial vessels regularly fishing the Bering Sea. By 1979 the number had jumped to between 250 and 280, an increase so dramatic that it was difficult for skippers to find crew members. The King crab fishery subsequently declined precipitously and fishermen and processors alike have had to diversify their businesses in order to survive. One of the avenues of diversification was the pollock fishery, and this fishery has provided an economic mainstay for the community in subsequent years.

Table 2.3.2-13 shows the volume and value of fish landed at Unalaska over the period 1977-1999. This span encompasses the high year of the King crab fishery, and shows the decline of the fishery thereafter, and the growth of the pollock fishery. Average value per pound is an artificial figure in that it combines a number of different variables, but it is useful for an overall look at how volume and value have varied over the years (particularly as pollock, a relatively high volume, low value per unit species grew in importance as a component of the community processing base). As shown, Unalaska has ranked as the number one U.S. port in value of landings since 1988 and in volume of landings since 1992.[30]

Table 2.3.2-13. Volume and Value of Fish Landed at Unalaska, 1977-1999

Year	Volume		Value		Average Value ($/lb)
	(millions of pounds)	US Ranking	(millions of dollars)	US Ranking	
1977	100.5	-	61.4	-	0.61
1978	125.8	-	99.7	-	0.79
1979	136.8	-	92.7	-	0.68
1980	136.5	3	91.3	10	0.67
1981	73.0	5	57.6	11	0.79
1982	47.0	6	47.8	14	1.02
1983	48.9	9	36.4	15	0.74
1984	46.9	20	20.3	13	0.43
1985	106.3	18	21.3	8	0.20
1986	88.3	9	37.2	10	0.42
1987	128.2	4	62.7	8	0.49
1988	337.3	3	100.9	1	0.30
1989	504.3	2	107.4	1	0.21
1990	509.9	2	126.2	1	0.25
1991	731.7	2	130.6	1	0.18
1992	736.0	1	194.0	1	0.26
1993	793.9	1	161.2	1	0.20
1994	699.6	1	224.1	1	0.32
1995	684.6	1	146.2	1	0.21
1996	579.0	1	118.7	1	0.20
1997	587.8	1	122.6	1	0.21
1998	597.1	1	110.0	1	0.18
1999	678.3	1	140.8	1	0.21

Source: 1980-1996 data from National Marine Fisheries Service data cited in City of Unalaska FY 97 Annual Report (December, 1997). 1977-1979 data from NMFS data as cited in IAI 1991. 1997-2000 data from NMFS website. Average value derived from volume and value data.

[30] If ports in U.S. territories are included, Unalaska/Dutch Harbor ranks second behind Pago Pago in American Samoa. As the center of the U.S. flag tuna fishery, value of landings at that port in 1998 (approximately $232 million) more than doubled Unalaska/Dutch Harbor's total for that same year, the last full year for which data are available (NMFS, 2001).

Tables 2.3.2-14 through 2.3.2-17 provide detailed break-out of processed weight and value of processed fish by species group by year for Unalaska. Given that these data are from a different source as the data in Table 2.3.2-12, the totals do not match, but the intent of tables is to give a sense of overall effort and value of commercial fish landed in the community and changes through time.

Table 2.3.2-14 provides information on total processed weight by species group by year for 1993-2000, and Table 2.3.2-15 provides the same information by percentage for each year. Important information for recent years to note is the overall dominance of pollock and the second tier domination of other groundfish and crab in landing volumes. Second, the precipitous decline in crab landings from 1998 (easily the highest volume year over the 1993-2000 span) to 1999 (still the second highest year over this period) to 2000 (far and away the lowest volume year of this period) is readily apparent. Pollock landings, on the other hand, increased from 1998 to 1999, and then again in 2000, reaching its highest level for the 1993-2000 in 2000. Clearly, the recent increase in pollock landings in the community is related to AFA reallocation of quota to onshore processing entities (which increased the inshore component from 35 percent to 50 percent of the BSAI pollock TAC[31]) as well as increases in the overall TAC itself.

Table 2.3.2-14. Total Processed Weight Contributed by Various Species Groups, by Year Unalaska/Dutch Harbor

Species	1993	1994	1995	1996	1997	1998	1999	2000
Salmon	9,815,693	8,219,894	9,760,479	8,492,280	5,102,131	10,040,698	14,451,050	5,419,183
Halibut	3,530,379	2,738,901	3,048,416	1,792,292	4,244,464	2,549,776	5,152,770	See Note
Crab	57,026,545	34,058,757	28,391,316	28,436,954	39,828,000	80,217,780	56,606,628	15,507,892
Herring	2,475,156	6,504,076	5,620,267	6,333,310	1,725,481	1,489,656	1,964,630	1,386,097
Other Non-GF	448,085	605,852	126,844	812,487	700	1,950	0	0
Pollock	662,921,232	680,883,305	643,364,726	541,758,182	523,462,456	531,184,102	612,370,740	693,429,290
Other GF	29,128,471	80,987,733	105,701,161	102,457,948	109,325,165	47,665,233	42,787,186	61,501,748
Total	765,345,561	813,998,518	796,013,209	690,083,453	683,688,397	673,149,195	733,333,004	777,244,210

Note: Halibut is missing from the 2000 database
Source: Fish Ticket Data supplied by NPFMC staff

[31] Inshore/Offshore-3, passed by the NPFMC in 1998, was scheduled to take the inshore component from 35 percent to 39 percent of the BSAI pollock TAC by reallocating 4 percent away from the offshore sector (and leaving the CDQ preallocation set aside at 7.5 percent). This planned shift never took place, however, as it was superceded later that same year (before implementation) by AFA. AFA allocated 50 percent of the TAC to onshore sector, 40 percent to the offshore catcher processor sector, and 10 percent to newly created the mothership sector (which had previously been a part of the offshore sector along with catcher processors). AFA also increased CDQ set aside to 10 percent of the TAC.

Table 2.3.2-15. Percentage of Total Processed Weight Contributed by Various Species Groups, by Year, Unalaska/Dutch Harbor

Species	1993	1994	1995	1996	1997	1998	1999	2000
Salmon	1%	1%	1%	1%	1%	1%	2%	1%
Halibut	0%	0%	0%	0%	1%	0%	1%	See Note
Crab	7%	4%	4%	4%	6%	12%	8%	2%
Herring	0%	1%	1%	1%	0%	0%	0%	0%
Other Non-GF	0%	0%	0%	0%	0%	0%	0%	0%
Pollock	87%	84%	81%	79%	77%	79%	84%	89%
Other GF	4%	10%	13%	15%	16%	7%	6%	8%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Note: Halibut is missing from the 2000 database
Source: Fish Ticket Data supplied by NPFMC staff

Table 2.3.2-16 presents information on the value of processed fish by species group by year for the period 1993-2000 for Unalaska. Table 2.3-17 provides the same information on a percentage basis. As shown, from 1993-1999, pollock fluctuated between 31 percent and 41 percent of total commercial fish value, and then jumped to 57 percent of the total in 2000. This sharp increase is due in large part to what happened to local crab value in 2000, going from $86 million to $43 million in processed value between 1999 and 2000 (and halibut not appearing in the data also accounts for at least a small portion of the jump). Crab declined from 51 percent of value in 1999 to 31 percent of value in 2000 (and this decrease will be greater when the halibut data are added). Pollock is easily at its highest point of total value ($80 million) of the 1993-2000 span during 2000; crab at $43 million is at its lowest point of the span in that same year. During the period 1993-2000, crab value was higher than pollock value except for 1997 (when the value of pollock surpassed crab by approximately $4 million) and 2000 (when the value of pollock was approximately $37 million greater than crab). As can be seen, the increase in value of landings in the community resulting from AFA related pollock landings increases were more than offset by the decline in crab landings in 2000.

Table 2.3.2-16. Value of Processed Fish by Species Group and Year for Unalaska/Dutch Harbor, 1993-2000

Species	1993	1994	1995	1996	1997	1998	1999	2000
Salmon	6,615,324	7,877,088	7,598,230	6,657,590	3,108,353	4,083,910	6,344,180	3,428,065
Halibut	4,497,715	5,271,277	5,714,417	3,528,928	8,561,085	2,307,552	9,320,086	See Note
Crab	73,104,099	69,363,848	69,248,632	55,334,010	49,420,889	64,092,959	85,615,553	42,908,899
Herring	371,273	754,995	1,188,539	2,111,846	329,564	311,338	479,371	235,637
Other Non-GF	744,782	459,663	39,239	244,984	4,885	421	0	0
Pollock	45,788,471	52,089,951	62,896,575	43,283,714	53,181,109	36,032,380	55,806,016	79,742,642
Other GF	5,570,305	11,554,074	20,320,242	17,428,653	15,569,770	8,194,740	10,715,151	12,545,008
Total	136,691,969	147,370,896	167,005,874	128,589,725	130,175,655	115,023,300	168,280,357	138,860,251

Note: Halibut is missing from the 2000 database
Source: Fish Ticket Data supplied by NPFMC staff

Table 2.3.2-17. Percentage of Total Processed Value Contributed by Various Species Groups, by Year, Unalaska/Dutch Harbor

Species	1993	1994	1995	1996	1997	1998	1999	2000
Salmon	5%	5%	5%	5%	2%	4%	4%	2%
Halibut	3%	4%	3%	3%	7%	2%	6%	See Note
Crab	53%	47%	41%	43%	38%	56%	51%	31%
Herring	0%	1%	1%	2%	0%	0%	0%	0%
Other Non-GF	1%	0%	0%	0%	0%	0%	0%	0%
Pollock	33%	35%	38%	34%	41%	31%	33%	57%
Other GF	4%	8%	12%	14%	12%	7%	6%	9%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Note: Halibut is missing from the 2000 database
Source: Fish Ticket Data supplied by NPFMC staff

The commercial fishery provides very large component of the employment base in Unalaska. According to the City of Unalaska Comprehensive Annual Financial Report for the fiscal year ending June 30, 2000, "The Unalaska economy is driven by the seafood industry. About half of the Unalaska labor force is employed by the seafood industry, and 90 percent of the workers consider themselves dependent on the seafood industry." In a telephone survey conducted by the City an included in that same report, the top four employers in the community are seafood industry businesses (Table 2.3.2-18). The City is the fifth largest employer, and the next two are shipping firms that rely virtually exclusively on the seafood industry. These firms are followed by the school district, which is followed by a fuel and vessel supply firm that relies very heavily on the fishing industry. It is only at the number 10 position on the list that one comes to an employer that is not a seafood company, a direct/exclusive support firm for commercial fishing sector firms, or a government entity.

Table 2.3.2-18. City of Unalaska, Ten Principal Employers, June 30, 2000.

Employer	Type of Business
Unisea, Inc.	Seafood, Hotel
Westward Seafoods, Inc.	Seafood
Alyeska Seafood, Inc.	Seafood
Royal Aleutian Seafoods, Inc.	Seafood
City of Unalaska	Local Government, Utilities, Port
Sealand Services, Inc.	Transportation
American President Lines, Ltd.	Transportation
Unalaska City School	Primary, Secondary Education
Western Pioneer, Inc.	Fuel, Vessel Support
Alaska Commercial Company	Grocery, Retail

Source: City of Unalaska

The following discussion of the fishing industry is divided into the harvesting and processing sectors, as each has significance for the Unalaska economy and community. A third section provides information on fishing industry support services.

Harvesting

The catcher vessel sector description of the Inshore/Offshore-3 document (NPFMC 1998) as well as the Groundfish SEIS details patterns of geographic distribution of vessels and vessel operations. As noted in those discussions, one of the trends in recent years has been the dramatic increase in ownership and/or control of harvest vessels by the shoreplants in Unalaska. Prior to this pattern of acquisition, it was accurate to say that no permanent residents of Unalaska were involved in the pollock fishery as vessel owners, nor were any vessels 'home ported' out of Unalaska in the sense of being the community of residence for the skipper and crew. With the changes in ownership patterns have come complexities for the description of the relationship of the harvest fleet to the community. While it is still true to say that no independent fishermen who are permanent residents of the community own pollock harvesting vessels, some pollock harvesting vessels are now owned (partially or wholly) by economic entities based in the community (or, given the complex nature of corporate relationships and/or restrictions on foreign ownership of the fleet, by entities with close relationships with entities based in the community). This change in ownership pattern, while it may have shifted where vessels are home ported or, perhaps more importantly from an economic perspective, spend more of the year, it is still the case that very few, if any, permanent residents of the community work on pollock harvesting vessels.

With the AFA, there have been some changes in ownership of catcher vessels, and the details of this shift are analyzed in another portion of this document. There have been examples in Unalaska of a vessel being purchased by other vessels within a co-op and the redistribution of the purchased vessel's quota share being distributed among other vessels in the co-op, and of vessels changing ownership and moving between co-ops that are based in different communities. Further, quota has been rented to other co-op members as well. None of these changes involved local residents, and none of the shifts of quota resulting from these actions are considered of a magnitude to have created community level impacts.

There are also indications that there are fundamental changes in relations between vessel crew and owners with the conversion of one or more vessel crew compensation structures from a share to a wage basis on vessels controlled by processing entities. This is perhaps consistent with an assigned quota system where vessel revenues are more-or-less predictable. Crew share systems are, of course, well suited for a fishing environment where the crew shares in the economic risk and benefits in the rewards of uncertain outcomes, but with what is essentially corporate ownership of a stable quota share, there are those who feel that results can be obtained from vessels without needed to utilize an share incentive system. This is consistent with the observation of one locally based skipper that with the AFA co-op quota assignment system, operating a vessel has become more like "running a combine" than hunting, as "everything is in fences now." As noted in earlier documents, different AFA processors in Unalaska have very different vessel ownership/control patterns, with one processor having virtually no ownership interest (having decreased from a minor ownership share previously) while others have quite strong interests. While these specific changes may or may not be AFA influenced in their timing, clearly the trends of processor control of catch capacity leading to these logical consequences were operating in the pre-AFA environment. Further, there has been considerable speculation related to the differential economics of various price points when it comes to what plants pay for fish, given different catcher vessel ownership relations. Where plants control a large portion of the delivery fleet (and can thus decide where to take their profits in that transaction), the price paid to non-directly controlled vessels becomes a marginal cost, with different rules about what makes economic sense in comparison to a fleet not controlled by a processor. While there were numerous opinions about the logical outcome of these circumstances under an AFA driven management regime, clearly these potential changes have not yet fully played themselves out in the relatively brief time since the implementation of onshore co-ops in Unalaska.

According to interviews for this project, while there has been leasing of quota between vessels that resulted in greater overall economic efficiency, there have been some cases where there has been a reluctance of vessel owners to trade the resource due to concerns or lack of trust in what NMFS or NPFMC may do in the long run. That is, despite incentives to lease quota, some owners are still protective of maintaining an ongoing history of direct participation in the pollock fishery as a hedge against possible future changes in fishery management.

Another change among catcher vessels participating in AFA co-ops is the level of information sharing between vessels, such that vessels can coordinate catch timing and location so as to be able to optimize timing at the processing plant. In some ways, the AFA has resulted in "absolute flexibility" from the perspective of coordination and running a processing plant. From the perspective of the catcher vessel owner, although most agree wholeheartedly that co-ops are a better management system that complete open access, AFA in some ways represents a loss of flexibility in terms of the strength of ties to a particular processor. Of course, the change with AFA is to some degree more apparent than real, given the existing ownership/control patterns of a good proportion of the fleet and the limited number of delivery options available to vessels without a commitment to any particular plant.

Yet another change in the post-AFA era is the differential importance of small harvest vessels for some operations in the face of subsequently imposed Steller sea lion related harvest area restrictions. Catch and delivery by co-op member vessels that are small enough to fish inside areas closed to the larger vessel classes can be coordinated to optimize the overall delivery schedule. This has been recognized as an important strategic approach by at least one processor to date, but clearly the utility of such an approach is enhanced or limited by the scale of the individual processing operation.

Another type of relationship change between catcher vessels and shore processors in Unalaska resulting from the AFA is the degree of management coordination between the vessel co-op and the plant, as realized in the creation of co-op manager positions. These individuals represent the co-op in dealing with plant management and are privy to a level of detail about plant operations and economics that simply was not communicated to the catcher fleet prior to the AFA.

In terms of the role of the community of Unalaska in relation to the overall pollock harvest in the Bering Sea, Table 2.3.2-19 shows the relative distribution of Bering Sea pollock catch between sectors in the initial allocation for 2000. Table 2.3.2-20 displays information on the links between the inshore allocation and specific communities as measured by base of operations for the individual cooperatives. This, of course, is not an exact measure because there is the flexibility of delivering some catch outside the cooperative, the ability of open access quota to be delivered anywhere, and the fact that some entities have locations in more than one community, among other factors. These factors show, in at least rough terms, the relative importance of Unalaska as a base of operations for the Bering Sea inshore pollock catcher vessel activity as well as for the shore processing sector. As shown, over half of the inshore pollock co-op allocations are associated with Unalaska based entities. This likely understates the relative percentage of Unalaska as a support community for CV operations, as some logistical and other support activity for Akutan based and Beaver Inlet based operations takes place in Unalaska as well.

Table 2.3.2-19. Initial Bering Sea Pollock Allocations, 2000

Quota/Allocation	Percent of TAC	Metric Tons
TAC	100%	1,139,000
CDQ	10%	113,900
Incidental Catch Amount	5%	51,255
Offshore	40%*	389,538
Mothership	10%*	97,385
Inshore	50%*	486,923

* Amounts calculated from remaining TAC after deductions for CDQ and Incidental Catch Amounts.

Table 2.3.2-20. Allocations to Inshore Cooperatives by Community Base of Operations, 2000

Cooperative	Percentage of Inshore Allocation
Unalaska Based	
Unisea Fleet Cooperative	24.087%
Westward Fleet Cooperative	16.824%
Unalaska Fleet Cooperative	11.655%
Subtotal, Unalaska Based Cooperatives	52.566%
Other Communities	
Akutan Catcher Vessel Association	28.257%
Arctic Enterprise Association (currently operating in Akutan)	5.466%
Northern Victor Fleet Cooperative (currently operating in Beaver Inlet [outside of organized borough boundaries])	6.837%
Peter Pan Cooperative (King Cove)	0.720%
Subtotal, Other Communities	41.280%
Non-Location Specific	
Open Access	6.154%

Source: Based on data from Unalaska Fleet Cooperative Report, 2001

While there is no direct participation in the pollock fishery by vessels owned or crewed by local residents, there is a local commercial catcher vessel fleet that interacts to some degree with AFA processors. A portion of the fleet is represented by the Unalaska Native Fisherman Association, and according to interview data, in 1998 there are 24 boats in the association, ranging in size from 18 foot skiffs up to a 68 foot commercial vessel. This association is open to Natives and non-Natives alike, but there is a requirement that members must live in the community eight months per year. Local vessels do not participate in the pollock fishery, but do participate in the local halibut, crab, and cod fisheries on a small scale. A frequently noted problem in developing markets and long-term relationships with the larger processing entities, however, is that the locally based fleet are small vessels by Bering Sea standards. In practical terms this means that they are more weather dependent than larger vessels and have a smaller delivery capacity per trip, which makes it difficult for larger plants to accommodate what are by necessity small and sporadic deliveries.

Unalaska did not qualify as a CDQ community, but it is an ex-officio member of the Aleutian Pribilof Island Community Development Association (APICDA). This CDQ group is partners with both an onshore and offshore entity, and offers training programs in Unalaska. Though Unalaska is not formally a CDQ community, according to interview data it is in fact where more of APICDA training and other programs are run because of the size of the population it services in the community. Although theoretically the increase in CDQ quota under AFA hurt the community as a non-CDQ participant, the simultaneously occurring increase in onshore quota, again in theory, more than made up the difference. The precise impacts of this shift on the community are not possible to ascertain with available data, but it is known that given CDQ partnerships with onshore and offshore sector participants that directly or indirectly benefit the community through either local economic activity or payment of taxes in one form or another, the consequences of the change are likely to be minor indeed. When queried about the impact of CDQ allocation change, a number of respondents offered the opinion that it was simply a "cost of doing business."

Processing

The shoreplant operations themselves, and the range of variation of operations in the community, have been summarized in earlier documents (most recently in the Inshore/Offshore-3 SIA and the Groundfish SEIS) will not be recapitulated here. In terms of links to the community, it is important to note that shoreplants have long been a part of the community. The relationships between the plants and the community itself have not been without strain at times over the years, but Unalaska is perhaps unique with respect to the AKAPAI communities included in this analysis for the degree of articulation of the plants with the local community. A number of the longer-term residents working at the plants, especially management level staff, are actively involved in the community and serve in various elected, appointed, and volunteer capacities with the City of Unalaska and numerous community organizations.

Paradoxically, it has been the case in Unalaska that length of local residency of the workforce employed in seafood processing is inversely related to the vitality of the local industry in general. When the workforce was largest, there were virtually no local hires, particularly of long-term residents. For example, in 1982, at the height of processing capacity for King crab, there were no individuals identified as local residents working in the processing plants. There were a number of reasons cited for that fact at the time, including working conditions, pay rate, and work hours at the seafood plants that were attractive only to temporary transient workers. At that time, workers were hired out of the Pacific Northwest, typically Seattle, and were flown to Unalaska to work on a six-month contract basis. With the downturn in the crab fisheries, companies are no longer able to afford the expenses of a six-month contract system. Some have done away with such contracts and hire workers for an indefinite period of time with incentives for longevity; others hire more out of the Alaska labor pool than in the past.

Several other factors influencing local hires in periods of fluctuation should be noted. First, under "boom" conditions there is a range of available employment options for local residents outside of the less appealing processing jobs. Second, when there is a downturn in hires at the local processing plants, virtually all of the workforce at the individual plants consists of returning workers, obviating the need for new hires. Even when six-month contracts were most common, there was always a core of returning workers. Third, setting the lack of long-term resident hires aside, Unalaska is seldom the "point of hire" for processing workers for individuals who are newly arrived to the community. That is to say, people do not come to Unalaska for processing work unless they have already secured a position. It is far too expensive to fly out to the community on the off chance they might gain employment, particularly at relatively low-paying jobs, especially given the fact that there is seldom housing available in the community and that which does come available is relatively expensive. Fourth, it should be noted that a lack of local hire does not apply to all positions with the seafood companies. Management positions at nearly all of the seafood companies (as well as with the major fisheries support sector companies) are occupied by individuals who, if not originally from the community, are at least long-time residents of the community or the region. In a number of ways, the processing industry is a "small circle" in terms of managers, and individuals who have worked for more than one company and have gained ten to twenty years experience in the community and the region are not uncommon. Individual owners and, in the case of "permanently" moored floating processors, even the plants themselves may come and go, but individuals in upper level management positions tend to remain in the business and in the area.

Very few, if any, lifetime residents of the community work at the shoreplants at any one time. There are a number of reasons commonly cited for this, but the most common dynamic involves the high cost of living in the community. Costs are such that it is nearly impossible for a local resident to take an entry- level job at one of the plants, and better paying jobs at the plant are typically filled by individuals who have ‘worked their way up’ within the company. Further, according to interview data, local residents who have tried working at the plants have found that entry-level position work schedules are not typically compatible with an active involvement in community and family life outside of the plant.

Interviews with processing plant personnel suggest that the major operational impact experienced by the community of Unalaska under the AFA is the slowing down of spreading out of pollock processing activity. While some plants reported minor changes in numbers of personnel associated with pollock processing operations, for the most part levels have stayed almost the same, given the need for a full complement of staff to run the plants. What has changed is that, according to senior plant personnel, workers are working less hours per day and working for longer periods than was the case at the end of the open access era. Workers are reportedly earning perhaps slightly more than in past seasons, but it is taking them longer to do so, given the shorter workdays. This has had some impact on recruiting personnel, as there are some processing workers who want to come to the community for a relatively brief period of time and maximize the number of hours worked during the time they are in the community so that they can return to their home communities with more money in a shorter period of time. Unrelated to, but coincident with AFA, plant personnel also note that recruiting for processing workers has been more difficult during the time that there is a strong economy in the Lower 48.

Plant personnel also note that there is still a “race” interval during pollock processing under AFA conditions, and that occurs during roe season. Roe is at optimal quality for only a relatively short period, so there is a premium placed on maximizing return within that relatively short window. Further, non-roe pollock are also harvested to target maximum returns based on quality of fish, but those windows are much larger than the roe window.

One change within shoreplants as a result of AFA conditions has been the addition of additional pollock products to the processing mix. During open access when highest throughput was the goal, the returns on a number of specialty products were not worth the time (and opportunity costs) that such production would take. Some plants that concentrated heavily on surimi are now producing pollock fillets. Fillets are more labor intensive to produce than surimi, so theoretically would result in more employment at the plants, but in practice plant operations typically split their labor forces between a "surimi side" and a "seafood side" of operations. Producing pollock fillets means a diversion of some pollock to the "seafood side" of the operation and this has happened at the same time that the seafood side of local operations has been in decline with the shrinking of crab quotas. At least two of the major AFA plants have reported that they are not using dedicated crews for crab processing because of the sharp decline in volume in this past year, such that pollock seafood side products have picked up some of the slack, with workers switching to processing other species as they become available. In general, it is the case at all plants that "less pollock is going to fish meal" as other products are being developed and recovery rates for existing products are increased given the ability to optimize for return per unit rather than return based on volume. With the slowing of the pace of processing, at least one shoreside operation has closed a relatively inefficient but significant portion of their plant in favor of maximizing use of other portions of the plant. One operation reports more workers on site than in the recent past, but another reports labor force is down somewhat from the peak years when the crab quota was larger. The combination of balancing seafood with surimi production, and adding fillet and other product capacity makes comparing workforces between circumstances like 'comparing apples and oranges' in the words of one plant manager, but overall, the level of processor employment change directly related to AFA does not appear to have had a significant impact on the community of Unalaska.

Unlike the case with the AFA, there have been recent disruptions to plant operations associated with recently imposed Steller sea lion protection measures. According to senior staff at the local AFA plants, there were times during the C/D season of 2000 when the individual plants ran out of fish during what would otherwise have been continuous operation periods. When plants shut down during production, there are disproportionate inefficiencies created not just by the downtime, but by required cleaning as well. Plant managers were of a common opinion that the 2000 A/B seasons were a marked success under AFA co-op conditions, but that in the C/D season, the Steller sea lion protection measures "took away" at least some of the gains realized under AFA. On the other hand, the opinion was universally held among plant managers that the AFA mitigated, at least to a degree, the negative impacts to the Steller sea lion protection measures (i.e., without the AFA, the negative impacts of the protection measures would have been much worse). In concrete terms, in addition to timing and effort inefficiencies, the sea lion protection measures hurt shoreplants in terms of fish quality and age, something that the AFA had allowed the plants to make gains on compared to the derby system context pre-AFA. While Steller sea lion measures confound the direct assessment of at least some AFA impacts, shore processors report that overall they are doing well, as their utilization has improved, they can time product mix to markets more efficiently, they can more efficiently ship product, and they can run higher value products than in the past, among other factors.

There has been some shift in inshore pollock away from Unalaska Island with the move of the Arctic Enterprise floating processor from Beaver Inlet to Akutan (coincident with its purchase by a new owner), but this shift has not had direct consequences on the community of Unalaska. Local revenues were not effected, as Beaver Inlet is outside of the municipal boundaries of Unalaska, nor is Beaver Inlet part of an organized borough, so there were no local taxes that derived from that operation. The operation was supported logistically out of Unalaska as the closest transportation hub, but that is still the case to some degree even with the vessel operating out of Akutan.

From the Unalaska shoreplant perspective, one negative aspect of the AFA is "the way other species were carved up." One plant manager cited the example of yellowfin sole being capped, "therefore any growth has to occur at sea [i.e, among non-AFA entities] because shoreside is capped." In terms of community implications, this type of sideboard arrangement does preclude local AFA processors from potentially diversifying into other fisheries, and therefore increases local dependency on fewer species than may be theoretically desirable, but in practical terms the community is already heavily dependent upon pollock and crab, and fluctuations in those fisheries are much more important to the economic well being of the community than any other species that is recognized at present to have at least some commercial potential. There are other communities in the region, however, for whom AFA does represent preclusion from developing at least a portion of a local commercial fishery. The CDQ analysis section of this document mentions this being a potential issue in St. George and False Pass, and it is also an issue for Adak, where there are attempts being made to attract commercial fisheries activity to help provide an economic underpinning for the redevelopment of that former military community.

Unalaska non-AFA processor response to AFA is mixed. In 2000 (the first year of AFA shoreside co-ops), crab-dependent entities were more effected by changes in crab quota and price than by AFA interactive effects. The largest non-AFA crab producer in the community reported that during 2000 there was no apparent "cap overflow" from the AFA processors to his operation, and that while overall the AFA was beneficial to his particular business, there was not the level of benefit from the capping of competition at the AFA plants that had been anticipated. This processor also noted that the downside of the AFA from their perspective was the preclusion of shoreside crab plants moving into pollock at a later date if business conditions would otherwise dictate that such an expansion would be a good strategic move.

Small entities in the community that do a variety of specialized processing and custom packing in conjunction with AFA plants report that AFA has had negative impacts on their operations. For example, those that do custom processing of crab in conjunction with AFA plants now, in a sense, compete with those plants because their crab 'counts against' the AFA plant's crab cap. In other words, unlike in the past, cooperation with a custom processor is limiting what the AFA plant can do on their own as they are essentially 'giving away' a part of their cap limit by doing so. Also, with the slowing down of the AFA plants during pollock season, there is the opportunity for the larger plants to explore custom products that were not worth their while during the race for fish, so the larger plants may now be interested in providing some of the custom services that the small operations provided in the past. During interviews, small operation owners also found the "locking up" of pollock by the AFA qualified shore processors disconcerting because of the effect of precluding them exploring that niche or diversifying into that market in the future. It is also the case that the small processors have less political leverage in the management process, and can afford less representation at fishery management meetings. These operators feel that they are not competing on a level playing field because of the management of the fishery being biased toward the interests of larger firms, with AFA providing one more example of this general trend. One of the specialty processors notes that they have been successful in competing for the halibut market specifically because the fishermen own the quota rather than the larger processing entities.

Support Services

Unalaska is unique among Alaska coastal communities in the degree to which it provides support services for the Bering Sea groundfish fishery. As described in detail in the Inshore/Offshore-1 community profile (NPFMC 1991), Unalaska serves as an important port for several different aspects of pollock fishery. Support services include a wide range of companies, including such diverse services as accounting and bookkeeping, banking, construction and engineering, diesel sales and service, electrical and electronics services, freight forwarding, hydraulic services, logistical support, marine pilots/tugs, maritime agencies, net replacement and repair, vessel repair, stevedoring, vehicle rentals, warehousing, and welding, among others. There is no other community in the region with this type of development and capacity to support the various fishery sectors in the Bering Sea.

In general, in the way of support services, there is little direct supply of the main shoreplants in the community. This is especially true of the AFA shoreplants, by far the largest plants in the community. These are large enough entities that it is more efficient to supply most on-site needs directly from outside of the community. These plants all feature an "industrial enclave" style development to some degree, but this varies from operation to operation. Plants may purchase some regular items such as raingear and boots for processors locally that they do not want to keep in inventory, but major purchases may be limited to fuel sales. Commonly large volume supplies, such as packaging materials and food are purchased "down south" and shipped direct. Individual processing plant workers do patronize local businesses to some extent, but this is limited by the fact that they are supplied furnished housing and meals by the processors. This pattern has not changed with the AFA. The smaller non-AFA operations in Unalaska have proportionally more local purchases of goods and services in the community. The major non-AFA crab processor in the community noted that because of the scale of their operation they did buy most services in town, but that with the overall decline in the support service sector of the economy they have seen "about a half dozen" of their vendors leave the community. As discussed below, this decline is attributed at least in part to conditions created by the AFA.

There are a number of businesses in Unalaska that are oriented toward supporting catcher vessels for a significant amount of their business. With a decrease in the race for fish, there has been a drop-off in peak demand for services. The amount of this drop-off depends on a number of different factors, including the relative reliance on crab and trawl fleet support. According to one service supply business manager who is quite heavily dependent upon trawl vessels, AFA in theory should help his business out in the long run, because even if overall there are less vessels with quota reassignments within co-ops, it will be the less efficient vessels that drop out, leaving more predictability and more secure players. In practice, a good portion of the support business in Unalaska has been built on inefficiencies, as according to this manager "this was Unalaska business." Like many of the support service businesses contacted, the common pattern for his business was to have a limited staff of year-round personnel and to ramp up capacity during peak periods by bringing in temporary or seasonal staff from Outside. This is true both for vessel oriented service firms that are parts of larger regional or national entities as well as for more locally based firms (and of the latter there are very few). With the conditions created by AFA (in conjunction with the fall in crab quotas), there have been employment cut backs at all of the businesses contacted in this subsector, either in the form of having fewer year-round personnel or in cutting back on the number of seasonal hires for peak demand, and in all cases a cutting back of overtime hours for staff. One electronics firm contacted is at half the level of employment that was typical in pre-AFA circumstances, and this was not an unusual case. One local business manager captured a common sentiment regarding the cutbacks and the quality of the jobs remaining in the community, however, with the observation that with the cutback "we have been trading money for sanity." In the words of another business owner, during the days of the race for fish "I didn't know I was crisis oriented" and in the time passing since crisis mode he has had to find other ways of making the business work. In this particular case of a locally owned vessel support business, survival has meant diversifying away from relying on the fishing industry nearly exclusively by performing similar services for land-based businesses (and adding new marine-oriented services) and away from relying on Unalaska as a nearly exclusive geographic base of revenue by taking his services to the region and beyond.

Another common problem with these businesses is inventory, and this has changed somewhat under AFA conditions (again, depending on how relatively dependent a business is on trawl-specific trade). Under race for fish conditions, carrying a larger than normal relative to overall volume of sales inventory was necessary due to the need to have virtually everything possible on hand instantly in case of need during the fishing season, as downtime for vessels off of the fishing grounds meant unacceptable opportunity losses, and vessels were willing to pay whatever it took to get them back on the grounds as quickly as possible - time was worth more than the cost of urgent repairs. As the race for fish went away, it was much more efficient to be able to order specialty parts expressed shipped in from the Lower 48 (typically Seattle) if needed than to try and stock everything in Unalaska.

Depending on the composition of the business base of these firms, they have been hit more or less hard by the decline in the crab quota. According to one business manager, with the loss of income to crab vessels, he has seen his crab vessel support business drop off 50 percent as owners are not spending money on preventative maintenance, and among those who are performing work, they are slower to pay their bills.

With the trawl fleet, the slowing down of the race for fish has also meant that the trawlers are spreading their business differently in the community, according to support business owners. Not only is less money being spent overall because of the relative lack of urgency, "now money managers are involved" in looking at relative value between providers and shopping work around. For a number of the support businesses that service the catcher fleet, the loss of a large portion of the catcher processor fleet was a large blow. While these large vessels did not employ the full range of services that some of the smaller catcher vessels might have employed in the community (simply due to their not being facilities able to handle all of the work), they did need specialty service work from a number of the suppliers.

Another common observation of the support sector within the community is that while the relatively longer pollock seasons are good for the community as a whole, a number of entrepreneurial businesses have folded, and the redundancy among (or the range of choices among) service providers has been reduced. The flip side of this means that, according to one fishing business manager, they can be more selective in their purchasing of services and "everything no longer needs to be at a premium price in Dutch Harbor."

Fuel sales are another type of locally provided support for the catcher vessel fleet. The Steller sea lion restrictions that went into place in the C/D seasons in 2000 have meant an increase in fuel sales due to longer vessel trips to the open fishing grounds. This, coupled with co-occurring high fuel prices has meant higher costs to the catcher vessel fleet. (This situation has also had an impact on the catcher-processor fleet, although likely to a smaller degree.) While the fuel sales businesses have benefitted (as has the municipality of Unalaska through tax on the fuel sales), the vessels and shoreplants (because of the higher cost of fuel they are purchasing) have been hurt. While not an AFA impact, this has caused some offset of the gains made under AFA by these entities.

There is a significant amount of support business in the community that is directly related to the offshore fleet. Catcher processors use warehousing services, and refuel and resupply when they are in the community to do a full or partial offload of product. (During the race for fish days, depending on the pace of the fishing, length of the season, capacity of the vessel, and a number of other variables, catcher processors may make a partial offload during the season [to free up capacity for finishing the season], and then do a full offload in Unalaska at the end of the season, or they may make a full offload during the season.) Additionally, catcher processors typically need a range of expediting, freight management, and logistical support services through Unalaska to keep operating in the Bering Sea. While this basic pattern has not changed in the post-AFA era, the volume of local work is down significantly due to both the reduction in the catcher processor fleet under AFA and the slackening of the pace of fishing under AFA.

This loss of catcher processor related business has not be evenly distributed throughout the support sector businesses in the community. For example, the OSI facilities in Captain's Bay were disproportionately dependent on the portion of the fleet that was excluded from the fishery compared to most other large businesses in the community. As a result, demand for dockage and warehousing at the facility is down, as are associated sales of other goods and services at the facility. Loss in local support demand can also be gauged by the fact that American Seafoods itself has a much reduced direct presence in the community, going from three year-round and four seasonal employees pre-AFA, to one year-round and two employees each hired for two months under the present circumstances.

For the catcher processor business activity that remains in the community, there has also been a shift by one of the main companies away from utilizing private facilities in favor of doing a higher portion of their business across one of the municipal docks. Clearly a rational business decision in the new environment, this has served to move some support income from the private to public sector.

Shipping seafood products is also a major business sector in the community. In addition to the two main shipping lines that serve the community, another type of support service provided in the community for both the inshore and offshore fleet is stevedoring services. While some shoreplants typically do not use stevedores in loading operations across their docks, or the demand is lower for stevedoring because of containerized product, hatch gangs are used for loading product 'over the side' to trampers for shipment from Unalaska. Stevedoring jobs are relatively high paying, and much valued in the community, though the work is not steady for the bulk of persons engaged in it. What does make this labor opportunity particularly valued is the fact that long-term locals, including lifetime residents, may qualify for, and provide a viable labor pool for, these positions without having to go through minimum-wage type of entry positions first. There are also union and non-union laborers alike who come to the community during the busy seasons to take advantage of the opportunities available in the community.

With the AFA, shipping business patterns have changed in the community. The largest difference is attributed to the fact that processors can now much more closely time their operations and shipping needs, and can thus optimize their range of shipping choices. This opens up a range of options not readily available under race for fish conditions. For example, processing entities can more easily arrange for scheduled transfers direct to trampers rather than having to use always available locally established shipping firms to transfer product. Of course, shipping choices ultimately depend on product mix, destination, and cost efficiencies, but clearly local shipping-related entities have felt impacts directly as a result of AFA. There are also indications that shoreside plants have shifted to a greater emphasis on tramper shipments relative to containerized shipments, but no quantitative information is available to verify this assertion.

One change seen in the community in the post-AFA era is the addition of two more private dock/shipping facilities in the community, one at the old East Point plant location and another in Captain's Bay. There would also appear to be proportionately more offshore related volume going across municipal docks than was the case in the past, and city revenue from dockage and wharfage in general is up. These two factors reinforce the general observation that shipping related business is less concentrated among the formerly dominant local entities and more spread out among various entities post-AFA than was the case pre-AFA.

Since AFA, there has been a reported shift in product destination from Unalaska, with less product going to Asia and more going to domestic and European markets, due primarily to change in product mix. One of the large shipping firms in the community reports that here has been almost a 100 percent fall-off in business to his company from the offshore sector since AFA, and increases from the shoreside have not made up this differential. This is attributed to the fact that without the Olympic system, seafood companies can schedule and plan offloads, meaning that they can make their own arrangements rather than having to go through a shipping company that is always available. Similarly, the onshore sector can more easily schedule tramper loads. The situation is not straightforward, however, for the two primary shipping companies with a local presence in Unalaska. There has been some movement of market share between the two firms that, according to some, were as closely associated with ownership and corporate changes at the two firms as much as any local market forces. According to one firm, union longshoring hours were down approximately 22 percent between 1998 and 2000. This is not entirely straightforward however, as the local prominence of union labor has been changing during this era. The community has seen a higher proportion of work going to non-union longshoremen recently, although the non-union entities tend to have smaller workforces (because, in part, of being able to schedule work rather than needing a large on-call labor pool). Another impact to the large labor pool approach is that AFA conditions have created difficulties for people who would normally travel to the community to work in shipping during the busy season ('regular seasonal' workers), due to the fact that with the high cost of living in the community, transient workers need to have a steady volume of work, particularly if housing is not provided. With shipping in less of a crisis mode, and with demand being less regular and more spread out, this makes it more difficult for the transient workers.

AFA has pushed inventories up because of increased recovery rates and diversification of product mix, meaning that there has been some increase in demand for cold storage, berthing, dockside services, and so on. While one senior shipping manager has reported that movement of product will become more of an issue with this trend, he also reports that there has been a tradeoff with the slowing of the peak periods post-AFA; even during the busy season, now staff are able to work more normal schedules and can be home with their families by 7:00 p.m.

There are also support service providers in Unalaska who support inshore processing entities that are operating far outside of the community. For example, the firm (Icicle Seafoods) that owns the floating processor in Beaver Inlet (Northern Victor) has a local Unalaska representative who supports that operation. (When a second floater was operating in Beaver Inlet, this entity had an office in Unalaska that, among other functions, supported that operation.) Similarly, the company that owns and operates the large shoreplant in Akutan (Trident) has a support office in Unalaska because of the logistical support needs of that plant that cannot be managed directly from Akutan.

In general, the impacts of the AFA on support service sector businesses in Unalaska have gone to the heart of the paradox of the Unalaska support service economy. This portion of the local economy was historically dependent to a large degree of the economic inefficiency of the commercial fishing industry. To the extent that the AFA has made pollock fishing more economically efficient, it has also served to allow vessel and facility owners to not have to purchase inefficient support services. This has meant a drop in local support service activity, employment, and revenue. There are no data available to quantify the amount of the drop, but it has clearly been significant for many of the businesses in this sector. Overall, peak demand is lower, the pace of business is slower, money has become at least as important of a consideration as time, and businesses do not need the level of inventory and staff as in the past. There are, of course, exceptions to this generalization, but the pattern is apparently quite consistent over the sector as a whole.

The Municipality and Revenues

As discussed above, the AFA had different impacts on different sectors of the Unalaska local economy. For those sectors directly engaged in the fishery, there have been generally positive benefits. For those engaged in the support service sector, there have been mixed benefits and impacts. From the municipal perspective, and particularly from a municipal revenue perspective, the benefits of AFA have been positive overall. This has been true in large part due to the increase in inshore quota in combination with relatively good pollock fish prices.

Table 2.3.2-21 presents a break-down of revenues by source for the City of Unalaska. This provides a sense of scale for the different revenue sources for the City's General Fund. Table 2.3.2-22 provides a break-out of selected fisheries-related General Fund revenue sources. These include the local raw fish sales tax, the intergovernmental fisheries business tax and the fisheries resource landing tax. As shown, the local raw fish tax increased substantially from FY99 to FY00, with the latter encompassing the first half of the 2000 calendar year, the first year of AFA onshore co-ops. Of course, a number of factors influence the volume and value of fish landed in the community which, in turn, translates into taxes paid. (The City of Unalaska does not keep a break-out of revenue generated by species or species group so information is not readily available to calculate the relative revenue contribution of individual species or species groups, but a proxy for that information for the shore based operations may be found in Tables 2.3.2-16 and 2.3.2-17.) Preliminary information for FY 2001 shows a further increase in revenues. This fiscal year covers the second half of the first full (calendar) year of onshore co-ops and the first half of the second year of onshore co-ops. It also captures the period when the more stringent Steller sea lion protection measures were put in place during 2000.

Table 2.3.2-21. City of Unalaska General Fund Revenues, Fiscal Years 1998-2001

Revenues	FY98 (actual)	FY99 (actual)	FY00 (actual)	FY01 (preliminary)
Real Property Tax	2,521,746	2,698,454	2,690,560	2,746,295
Personal Property Tax	1,164,363	1,120,957	1,202,265	1,116,263
Raw Fish Tax	2,641,124	2,513,500	3,410,717	2,958,360
Sales Tax	3,533,123	3,254,403	3,242,284	3,657,042
Other Taxes	439,735	516,863	509,434	524,195
State of Alaska	6,030,119	6,306,064	5,640,942	6,914,040
Charges for Services	278,703	282,778	279,159	298,409
Permits & Licenses	19,546	13,687	22,018	20,265
Miscellaneous	2,407,515	2,099,082	1,954,352	3,462,567
Other Financing Sources	386,895	273,416	461,817	19,346
Total General Revenue Funds	19,422,869	19,079,204	19,413,548	21,716,782

Source: City of Unalaska

Table 2.3.2-22. City of Unalaska Selected Fisheries Related General Fund Revenues, Fiscal Years 1991-2001

	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01P*
Raw Fish Sales Tax	2,851,008	3,681,908	3,131,661	2,641,802	3,340,512	2,212,833	2,641,645	2,641,124	2,513,500	3,410,717	2,958,360
Fisheries Business Tax	2,067,793	2,475,197	3,581,134	2,770,321	2,364,847	2,828,570	2,071,914	2,424,747	2,424,787	2,483,670	3,249,218
Fisheries Resource Landing Tax	na	na	na	na	na	2,637,708	3,015,804	2,604,706	2,739,821	2,224,903	2,813,250
Three Source Total	4,918,801	6,157,105	6,712,795	5,412,123	5,705,359	7,679,111	7,729,363	7,670,577	7,678,108	8,119,290	9,020,828

* FY2001 is preliminary; all other years are actual.
Source: City of Unalaska

One of the impacts of the AFA on the City of Unalaska revenues relates to the additional requirement that at-sea processors count landings outside of state waters as taxable events (under the fisheries resource landing tax). The particulars of that requirement are discussed in another section of this document, but as shown in Table 2.3.2-22, the local revenue derived from the fisheries resource landing tax increased from FY 1998 to FY 1999 (with the latter year encompassing the first half [calendar] year of offshore co-ops). Revenue from this source, however, fell over half a million dollars between FY 1999 and FY 2000 (the period covering the second half the first year of offshore co-ops and the first half of the second year of offshore co-ops) but, according to preliminary figures, rebounded in FY 2001. Looking at the three revenue source total, although there was some variation in the individual sources, the combined amount was nearly flat at $7.7 million for each year FY 1996 (the first year the fisheries resource landing tax came to the city) through FY 1999. FY 2000 combined three-source revenues rose to $8.1 million, so for the first FY that spanned both offshore co-ops and the start of on-shore co-ops, revenue sources that were directly fishery associated increased over five percent. Preliminary data have this figure increasing to $9.0 million in FY 2001.

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According to Port staff, with AFA, vessels have tended to stay at City dock facilities longer (with perhaps a 10-15 percent increase in average dock time) and may stop offloading in storm conditions, with the result that weather-related accidents are down. Port revenue has remained fairly stable over time, with the City dock and slips maintaining pre-AFA use levels.

Other Community Level Impacts

It is a truism that the AFA made the pollock fishery more economically efficient and that the economy of Unalaska, to a degree, is dependent upon economic inefficiencies. Goods and services are relatively expensive to supply locally, and if the balance between the relative value of money and time shifts more toward money being more valuable, then the local economy will experience a noticeable lessening in demand for services then seen in the community under AFA conditions. Of course, all of the slackening in demand for services cannot be attributed to AFA. At the same time, AFA was essentially taking effect in the community the crab fishery was weathering a sharp decline in quota, and Steller sea lion protection measures were taking their toll on the locally based fishery. In terms of the perception of impacts, or the ultimate consequences of those impacts, a number of individuals from various employment sectors reported that if the non-municipality, non-direct-fishery portion of the local economy is somewhat smaller, the jobs that remain are better jobs, with more regular hours, a better pace, and an overall higher quality of life.

One example of a change in (non-fishery support) service demand in the community that was mentioned by several interviewees occurred at the local clinic. According to one board member interviewed, the patient count at the clinic was down substantially and overall the clinic lost quite a bit of money during 2000. At least part of the decline in demand is related to the overall decline in peak activity and injuries associated with that type of a work environment, but it is also known that demand from the workforce of one of the major processors is down because of changes in on-site availability of minor injury assistance, so that at least some of the load is removed from the clinic. Donations for the clinic are reportedly off as well. According to a board member, changes in demand patterns has the clinic board working toward less of an industrial focus and more of a residential focus in terms of strategic planning for future clinic services.

Tourism continues to develop in the community, with new draws in the last few years associated with an increased local National Park Service presence, the opening of the Museum of the Aleutians, and the continued popularity of charter sport fishing. Sport charter fishing took off in the mid-1990s when world record sport halibut were caught locally in 1995 and 1996, with the latter fish, at 459 pounds, still representing the world record. Birding, hiking, kayaking, camping, and visiting the Holy Ascension Cathedral historic site are also tourism draws, but high cost and inconvenient transportation access make the development of this sector challenging for local businesses. With the slow down in the race for fish that accompanied AFA, direct fishery related passenger transportation demand also declined to some degree, although clearly demand was falling off prior to AFA. Table 2.3.2-23 provides information on passenger counts at the community airport for the period 1995-2000, as well as for the first half of 2001. As shown, the total number of passengers for this span of years peaked in 1996, and counts for 1999 and 2000 are the two lowest annual counts during 1995-2000. While there is considerable variation between quarters within and between years, quarterly counts for the first two quarters of 2001 are lower than either 1999 or 2000.

Table 2.3.2-23. City of Unalaska, Port of Dutch Harbor Airport Passenger Count by Quarter, 1995-2001

Quarter	Calendar Year						
	1995	1996	1997	1998	1999	2000	2001
January-March	16,122	20,380	15,992	20,919	15,672	16,461	14,696
April-June	17,209	16,615	15,772	13,683	14,556	16,480	13,988
July-September	18,015	17,105	16,041	12,909	16,312	15,906	na
October-December	13,171	13,323	15,380	15,863	13,740	12,596	na
Total	64,517	67,423	63,185	63,374	60,280	61,443	na

Note: (1) Data from second half of 2001 not yet available. (2) Data in the table represent a total of enplaned and deplaned passengers, not "round trips" by single individuals (e.g., if 9,000 passengers got off planes in Unalaska during a particular quarter and 7,000 passengers boarded planes in Unalaska during that same quarter, the quarterly passenger count would be 16,000).
Source: Adapted from spreadsheet supplied by City of Unalaska Finance Department. Data were originally configured in fiscal year format. Data for April-June 2001 period supplied by telephone follow up.

Coupled with these conditions was a decrease in level service caused by the discontinuation of long-time air service provider Reeve Aleutian Airways and a further drop in demand related to the crab quota decline. This resulted in a situation where as of early 2001 the community was served by only one jet per day. According to long-time community residents, this has had an impact on a range of services in the community (such as the price and availability of a variety of food at stores), as well as mail and freight.

There have been changes in hotel and lodging services in the community in the post-AFA era. According the manager of the largest lodging operation in the community, there are now less people coming through town in general, and less movement of people for crew changes in particular, but where there were sharp peaks and valleys in business before, there is "more of a bubble" now, which helps to allow better planning of services. At least at this one operation, the full time staff are on site for longer periods than in the past. In terms of business fluctuation the highs are not as high, but the lows are not as low as in the past, and the overall average occupancy is up. There has been an increase in tourism-related business in the community, but according to this manager, that has been more of an "augment" to the business rather than a core constituency.

The major grocery stores in the community report that business is definitely off in the post-AFA era, but the relative dependency of the stores on different portions of the fleet (pollock versus crab) varies, as well as the relative dependency on commercial fishery-related purchases versus local consumer purchases. There is no clear tie to an AFA impact in this case.

A number of businesses that serve the general public have gone out of business in the recent past, and examples of these businesses, including an office supply store, an auto parts store, a vehicle rental firm, and a bowling alley, were frequently cited during interviews. Also strongly marked was the reduction in number of more direct fishery support businesses that were needed for peak demand times. In this case, it is not that types of services are no longer available, it is more that there is less of a choice of providers of those services. One landlord reports having lost a net company, a electrical firm, a hydraulic firm, and a restaurant all out of a single building. While this is an unusual case, it does illustrate the range of businesses (and types of fleet support businesses) that have folded.

Another change in the local community context noted by multiple interviewees is an increased federal presence in the community. While having nowhere near the presence as in, for example, Kodiak, the United States Coast Guard now has a detachment in the community (after the community had lobbied for many years for an increased local presence given the importance of commercial fishing in the community and region). There are also now U.S. Customs and Immigration and Naturalization Service personnel and offices in the community. None of these changes are attributed to impacts of the AFA.

One post-AFA change in the community consistently mentioned by interviewees from various sectors are the impacts associated with Steller sea lion protection measures. In the words of one community business leader, the issue is "hanging over the town" and people "can't do any planning" because of it. There is a recognition, however, among at least some of the local residents that other communities in the region are even more vulnerable to community-level disruptions resulting from these measures due to a much higher reliance on a small boat fleet that cannot effectively fish outside of the protection zones. While the seasonality of the local economy has changed with AFA, such that peak periods are not as high or sharp, and an increased level of activity lasts longer in the community, the interruptions of the seasons related to Steller sea lion protection measures does cause stoppages and inefficiencies at the major shoreplants in the community.

Processing employment patterns have changed somewhat in the community as a result of AFA, but the direct impact of this change on the community is not a large one. Processing crews are staying in the community longer but, as discussed earlier, direct interaction between line processing personnel and the community is somewhat limited, although this varies between individual processing entities. In terms of wages, interviews with inshore processing plant managers suggest that processors may earn somewhat more overall due to a longer processing interval; there are some offsets with individuals working less average hours per day, due to the easing off of the race for fish. Business patterns between the processors and the community have been generally consistent, with the processors being more-or-less self-contained entities when it comes to purchasing goods and services, but there have been some changes, such as in the area of shipping. With the ability to have a more predictable production schedule, it has been possible to be more efficient in scheduling shipping of product, with the result that there have been some shifts between carriers and different types of service.

The housing market of Unalaska has changed significantly in the past few years, and at least part of this change is attributed to the impacts of AFA. Although there was a lull in demand following the crash of local King crab activity in the early 1980s, housing demand has been strong in the community since the development of the contemporary fishery dating back to the 1970s. There are no longer lengthy waiting lists for rental properties, and home sales are sluggish. The community has not yet seen a dramatic dip in housing costs, but there is at least some concern in the community that either investments in housing will not be realized on the sale of the property or that homes will not be able to be sold in a timely fashion if individuals chose to leave the community, which is a very different set of circumstances than have been common for many years.

The business climate for support service enterprises has changed since the passage of AFA, but clearly not all of the changes are attributable to AFA itself. Other factors influencing support service business timing and volume have included the dramatic decline of quota/shorting of local crab processing and the constraints on the groundfish fishery imposed by Steller sea lion protection measures. As noted above, during the pollock race for fish era, the fishery was generally conducted in such a manner where essentially 'time was worth more than money' so that support services built up an inventory and labor capacity to minimize turn-around time to get vessels back on the fishing grounds as quickly as possible (and plants back on-line as quickly as possible). Under the current co-op system, down time does not automatically imply a competitive disadvantage or loss of throughput at a plant or loss of catch for a vessel, therefore cost of support services becomes relatively more important. Although systematic quantitative data are not available, interview data suggest that there have been reductions in staffing and inventory at key support service businesses in the community.

In terms of fishermen's perceptions of fishery management related to AFA, this is not a substantial community impact issue per se in Unalaska, as none of the catcher vessels participating in the Bering Sea pollock fishery are owned or crewed by residents of Unalaska, although residents have participated in the fishery at least to a minor extent in the past.

Relationship between processors and the harvester fleet has changed somewhat since the formation of co-ops under the AFA, but the trends of change seen in increasing ownership or control of the catcher vessel fleet were in place prior to the enactment of that AFA. The AFA may have accelerated some changes along this line, but there is no way to ascertain that with certainty. (While MarAd data on current ownership of part of the fleet is presented in another section of this document, those data are incomplete. Further, there are no good baseline data available to quantify existing trends pre-AFA.)

Annual fishing cycles and processing cycles in the community has changed under AFA. Pollock processing times have activity peaks that are not as high as in pre-AFA years, and the more "rounded" level of activity curves last somewhat longer than was the case in the immediate past. This has had implications for the structure of the support service sector of the local economy.

There have been some shifts in pollock delivery to communities since the formation of inshore co-ops under the AFA. The Arctic Enterprise floating processor moved from Unalaska Island to Akutan, but this had little if any impact on Unalaska because it formerly operated outside of Unalaska municipal boundaries. Some relatively minor shifts have occurred involving movement of catcher vessels between communities, but these movements have been relatively minor compared to overall community deliveries and the changes in TAC and volume and value of other fisheries have further reduced the impact of such shifts.

The impact of the reduction of the offshore catcher processor fleet has been felt in Unalaska. A number of support service businesses were oriented toward serving this fleet, and have been having a difficult time after the fleet reduction. This has, in part, contributed to the overall changes seen in the support service sector.

Community services in Unalaska have not been impacted by the AFA or, more accurately, the change in service demand in the community is not directly attributable to AFA. Clearly the decline in demand for services at the community clinic may be partially attributed to the slowing of the pace of fishing and processing possible under AFA conditions, but no hard data have been examined that quantify this assumption.

While no systematic survey was possible under the conditions of the current study, overall Unalaska community opinion of AFA would appear to be favorable. While there is concern over support service sector business vitality, the problems associated with a race for fish are well known and few residents would appear to want to return to those conditions. Additionally, a number of individuals interviewed discussed the positive social/quality of life aspects of AFA related conditions, such as having more regular (and shorter) work hours and the resulting ability to spend more time with family and friends outside the workplace, to take vacations, and to have outside interests.

AKUTAN

Akutan is located on Akutan Island in the eastern Aleutian Islands, one of the Krenitzin Islands of the Fox Island group. The community is approximately 35 miles east of Unalaska and 766 air miles southwest of Anchorage. Akutan is surrounded by steep, rugged mountains reaching over 2,000 feet in height. The village sits on a narrow bench of flat, treeless terrain. The small harbor is ice-free year-round, but frequent storms occur in winter and fog occurs in summer. Akutan began in 1878 as a fur storage and trading port for the Western Fur & Trading Company. The company's agent established a commercial cod fishing and processing business that quickly attracted nearby Aleuts to the community. A church and school were built in 1878.

The community of Akutan was previously profiled in the 1991 SIA in the Unalaska Social Impact Assessment Addendum (IAI 1991), and the details of that profile will not be recapitulated here. Akutan is the site of one of the larger shoreplant facilities that process Bering Sea pollock, and that operation is grouped with (and described with) the Unalaska/Dutch Harbor shoreplants in the inshore profile in the Groundfish SEIS (Appendix I) document and, given that it is not one of the major study communities for this present effort, it will not be revisited here. The purpose of this brief section is to underscore the unique aspects of Akutan with respect to potential socioeconomic assessment issues that could arise out of the groundfish management process, and the AFA in particular.

Akutan is a unique community in terms of its relationship to the Bering Sea groundfish fishery. It is the site of one of the largest of the shoreplants in the region, but it is also the site of a village that is geographically and socially distinct from the shoreplant. This ‘duality’ of structure has had marked consequences for the relationship of Akutan to the Bering Sea groundfish fishery. Akutan derives considerable fiscal benefits from inshore operations, and as CDQ partners with both inshore and offshore entities, they derive economic benefits from both of those sectors.

One example of this may be found in Akutan’s status as a CDQ community. Initially (in 1992), Akutan was (along with Unalaska) deemed not eligible for participation in the CDQ program based upon the fact that the community was home to “previously developed harvesting or processing capability sufficient to support substantial groundfish participation in the BSAI . . .” though they met all other qualifying criteria. The Akutan Traditional Council initiated action to show that the community of Akutan, per se, was separate and distinct from the seafood processing plant some distance away from the residential concentration of the community site, that interactions between the community and the plant were of a limited nature, and that the plant was not incorporated in the fabric of the community such that little opportunity existed for Akutan residents to participate meaningfully in the Bering Sea pollock fishery (i.e., it was argued that the plant was essentially an industrial enclave or worksite separate and distinct from the traditional community of Akutan and that few, if any, Akutan residents worked at the plant). With the support of the Aleutian Pribilof Island Community Development Association (APICDA) and others, Akutan was successful in a subsequent attempt to become a CDQ community and obtained that status in 1996.

This action highlights the fundamentally different nature of Akutan and Unalaska. Akutan, while deriving economic benefits from the presence of a large shoreplant near the community proper, has not articulated large-scale commercial fishing activity with the daily life of the community. While US Census figures show Akutan had a population of 589 in 1990 and 713 in 2000, the Traditional Council considers the “local” resident population of the community to be around 80 persons, with the balance being considered “non-resident employees” of the seafood plant. This definition, obviously, differs from census, state, and electoral definitions of residency, but is reflective of the social reality of Akutan. The residents of the village of Akutan, proper, are almost all Aleut. As shown in Table 2.3.2-24, less than 16 percent of the population in 2000 was Native American/Native Alaskan.

Table 2.3.2-24. Ethnic Composition of Population Akutan; 2000

	2000	
Race/Ethnicity	**N**	**%**
White	168	23.6%
African American	15	2.2%
Native Amer/Alaskan	112	15.7%
Asian/Pacific Islands*	277	38.9%
Other**	141	19.7%
Total	713	100%
Hispanic***	148	20.8%

Source: U.S. Bureau of Census.
* In the 2000 census, this was split into Native Hawaii and Other Pacific Islander (pop 2) and Asian (pop 275)
** In the 2000 census, this category was Some Other Race (pop 130) and Two or more races (pop11).
***' Hispanic' is an ethnic category and may include individuals of any race (and therefore is not included in the total as this would result in double counting).

Table 2.3.2-25 provides information on group housing and ethnicity for Akutan. Group housing in the community is almost exclusively associated with the processing workforce. As shown, 85 percent of the population lived in group housing in 1990. Also as shown, the ethnic composition of the group and non-group housing segments were markedly different, with the non-group housing population being predominately (83%) Alaska Native, and the group housing population having almost no (1%) Alaska Native representation. Table 2.3.2-26 shows the population composition by sex in 1990, and is clearly indicative of a male-dominated industrial site rather than a typical residential community.

Table 2.3.2-25. Ethnicity and Group Quarters Housing Information, Akutan, 1990

	Total Population		Group Quarters Population		Non-Group Quarters Population	
Akutan	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
White	227	37.52	212	42.32	15	17.05
Black	6	0.99	6	1.20	0	0.00
American Indian, Eskimo, Aleut	80	13.22	7	1.40	73	82.95
Asian or Pacific Islander	247	40.83	247	49.30	0	0.00
Other race	29	4.79	29	5.79	0	0.00
Total Population	589	100.00	501	100.00	88	100.00
Hispanic origin, any race	45	7.44	45	8.98	0	0.00
Total Minority Pop	*342*	*56.53*	*298*	*59.48*	44	50.00
Total Non-Minority Pop (White Non-Hispanic)	*247*	*40.83*	*203*	*40.52*	*44*	50.00

Source: Census 1990 STF2

Table 2.3.2-26. Population Composition by Sex
Akutan; 1990

	1990	
	N	**%**
Male	449	76%
Female	140	24%
Total	589	100%

In terms of the local importance of groundfish, while crab processing was a major source of income for the Akutan plant during the boom years of the late 1970s and early 1980s, with the economic collapse of this resource base in the early 1980s, groundfish processing became the primary source of economic activity. In 1997, for example, State of Alaska and NMFS catch records indicate that, while landings of herring and crab were reported for the Akutan plant, more than 98 percent of the total pounds landed were groundfish, and these made up more than 80 percent of the estimated total value.

In terms of support service sector activity, Akutan differs sharply from Unalaska in terms of providing a support base for the commercial fishery. There is no boat harbor in the community, nor is there an airport. (Air service is provided out of Unalaska via amphibian or float plane.) While there is a 'local' commercial fishery, this is pursued out of open skiff-type vessels, and participation in this type of enterprise has reportedly declined in recent years. The Akutan village corporation does derive economic benefits from the local shoreplant through land leasing arrangements and through sales of goods and services to local seafood plant employees, including check cashing services. The Trident plant is the principal facility in the Akutan port and, historically, a number of smaller, mobile processing vessels have operated seasonally out of the port of Akutan. Beyond the limited services provided by the plant, virtually no commercial fishery support services exist in Akutan. Indeed, alternative economic opportunities of any kind are extremely limited.

As a CDQ community, the community of Akutan enjoys access to the BSAI groundfish resource independently of direct participation in the fishery by means of the control of assigned CDQ quota. Further, while not participating directly in the immediately adjacent shoreplant, the community, through the CDQ group to which it belongs, does have ownership interest in the catcher-processor sector. While the CDQ related impacts of the AFA are discussed in detail in another part of this document, it should be noted here that Akutan, like the other CDQ communities, has benefitted from the increase from 7.5 percent to 10 percent of each BSAI groundfish TAC (except for the fixed gear sablefish TACs, of which CDQ communities receive 20 percent for the eastern Bering Sea and the Aleutian Islands areas). The direct benefit/value of this increase, of course, depends upon the TAC itself as well the value of the resource (or value of the rent). Similarly, economic benefits the community derives from the local 1 percent raw fish tax from landings at the nearby plant are dependent on BSAI groundfish TACs and the resulting ex-vessel value of groundfish landings.

In summary, the potential social impacts to Akutan as a result of the AFA (and other groundfish management changes) depends upon how one defines the community of Akutan. If the traditional village of Akutan is the unit of analysis, the fishery would appear to have little direct impact on the day-to-day lives of individuals in the community, as long as the structure of the sectors stays roughly the same. On the other hand, if the census/legal definition of Akutan is used, the Akutan is a community more than five times larger than its 'traditional/Aleut' population, and that large margin of difference in population is associated exclusively with the onshore processing operation.

One of the changes that has happened in conjunction with the AFA was the purchase of the Arctic Enterprise floating processor by Trident, and the move of the Arctic Enterprise from Beaver Inlet on Unalaska Island to Akutan bay. While this is a shift of processing to the community, it is not really a shift "from" another community, as Beaver Inlet is not a part of the municipality of Unalaska, nor is it part of an organized borough. Unalaska/Dutch Harbor did not "lose" anything with the move. This operation is supported logistically out of Dutch Harbor, as was the case when it was in Beaver Inlet (and is the case for other Trident operations in Akutan). Akutan's gain with the move relative to earlier conditions cannot be discussed in quantitative terms, due to data confidentiality restrictions. Data from 2000 operations are publicly available and appear in the annual co-op report that appears as an appendix to this document, but the change from earlier years cannot be ascertained due to those data not being public. The move of the Arctic Enterprise, combined with the increase in CDQ quota, mean that both the industrial and village portions of the community appear to have captured more of the overall pollock quota post-AFA than was the case pre-AFA. No further detailed analysis of AFA related social impacts for the community was undertaken, as this was not one of the designated study communities for the limited research effort, in large part due to the fact that impacts in the other AFA communities considered are both more complex and of greater magnitude than is the case in Akutan.

SAND POINT AND KING COVE

Overview

Sand Point is located on Humboldt Harbor on Popof Island, off the Alaska Peninsula, 570 air miles from Anchorage. Sand Point was founded in 1898 by a San Francisco fishing company as a trading post and cod fishing station. Aleuts from surrounding villages and Scandinavian fishermen were the first residents of the community. Sand Point served as a repair and supply center for gold mining during the early 1900s, but fish processing became the dominant activity in the 1930s. Aleutian Cold Storage built a halibut plant in 1946. Trident operates the current processing plant, which primarily processes pollock, Pacific cod and other groundfish, salmon, and halibut. Peter Pan operates a buying station in Sand Point for their processing plant in King Cove. Sand Point is home port for the largest fishing fleet in the Aleutian Chain.

King Cove is located on the south side of the Alaska Peninsula, on a sand spit fronting Deer Passage and Deer Island. It is 18 miles southeast of Cold Bay and 625 miles southwest of Anchorage. King Cove was founded in 1911 when Pacific American Fisheries built a salmon cannery. Early settlers were Scandinavian, European, and Aleut fishermen. Of the first ten founding families, five consisted of a European father and an Aleut mother. The cannery operated continuously between 1911 and 1976, when it was partially destroyed by fire. The main processor in King Cove is now Peter Pan, and processes pollock, Pacific cod and other groundfish, salmon, crab, herring, and halibut. In addition, several small operators conducted operations in King Cove in 2000 – one for salmon only, and the other for salmon and groundfish (other than pollock).

Sand Point and King Cove, like Akutan, are a part of the Aleutians East Borough. Whereas Akutan is incorporated as a Second Class City, both Sand Point and King Cove are incorporated as First Class Cities. Like Akutan, both Sand Point and King Cove are home to one shoreplant each that processes Bering Sea pollock. Unlike Akutan, however, neither Sand Point nor King Cove are CDQ communities. Two further differences are key for understanding the link between the communities and the groundfish fishery: (a) both Sand Point and King Cove are historically commercial fishing communities that have had processing facilities as part of the community for decades; and (b) both Sand Point and King Cove have resident commercial fishing fleets that deliver to the local seafood processors. With respect to the latter point, Sand Point and King Cove are different from Unalaska. Whereas Unalaska does have vessels owned and operated by ‘true’ local residents, none of these vessels that would fall into this category deliver pollock to local plants, nor do they typically deliver cod on a regular basis in volumes comparable to other portions of the fleet. Sand Point and King Cove resident fleets are involved with pollock (Sand Point more than King Cove), though typically the Bering Sea pollock processed at those plants comes from deliveries from larger boats home ported outside of the community.

The two communities have similar histories with respect to fishing. Sand Point was founded as a trading point and cod fishing station by a San Francisco fishing company in 1898. King Cove was established in 1911 by cannery operators and commercial fishermen, many of whom were Scandinavian immigrants who married local Aleut women. King Cove is located on the south (i.e., Pacific Ocean) side of the Alaska Peninsula, while Sand Point is located on Popof Island in the

Shumagin Islands group on the Pacific Ocean side of the Alaska Peninsula. Both communities then share a Gulf of Alaska orientation or GOA/BSAI orientation that the other Bering Sea pollock communities do not. Of the two, King Cove is more Bering Sea oriented, and Sand Point more Gulf of Alaska oriented.

Historically, both of these communities saw a large influx of non-resident fish tenders, seafood processing workers, fishers, and crew members each summer. For the last several decades, both communities were primarily involved in the commercial salmon fisheries of the area, but with the decline of the salmon fishery, plants in both communities have diversified into other species. The resulting ethnic diversity of population in both communities is evident in Tables 2.3.2-27 and 2.3.2-30. The predominance of males over females (Tables 2.3.2-29 and 2.3.2-32) is also an indicator of male-oriented processing employment, as well as possible differential female/male emigration from the communities.

Table 2.3.2-27. Ethnic Composition of Population King Cove; 2000

	2000	
Race/Ethnicity	**N**	**%**
White	119	15%
African American	13	1.6%
Native Amer/Alaskan	370	46.7%
Asian/Pacific Islands*	213	26.9%
Other**	77	9.7%
Total	792	100%
Hispanic***	59	7.4%

Source: U.S. Bureau of Census.
* In the 2000 census, this was split into Native Hawaii and Other Pacific Islander (pop 1) and Asian (pop 212)
** In the 2000 census, this category was Some Other Race (pop 47) and Two or more races (pop30).
***' Hispanic' is an ethnic category and may include individuals of any race (and therefore is not included in the total as this would result in double counting).

Table 2.3.2-28 provides information on group housing and ethnicity for King Cove. Group housing in the community is largely associated with the processing workforce. As shown, 42 percent of the population lived in group housing in 1990. Also as shown, ethnicity varied between the group and non-group housing, with the non-group housing population being 67 percent Alaska Native and the group housing population being 39 percent Alaska Native.

Table 2.3.2-28. Ethnicity and Group Quarters Housing Information, King Cove, 1990

King Cove	Total Population		Group Quarters Population		Non-Group Quarters Population	
	Number	Percent	Number	Percent	Number	Percent
White	127	28.16	57	30.16	70	26.72
Black	6	1.33	6	3.17	0	0.00
American Indian, Eskimo, Aleut	177	39.25	1	0.53	176	67.18
Asian or Pacific Islander	125	27.72	109	57.67	16	6.11
Other race	16	3.55	16	8.47	0	0.00
Total Population	451	100.00	189	100.00	262	100.00
Hispanic origin, any race	53	11.75	53	28.04	0	0.00
Total Minority Pop	*331*	*73.39*	*139*	*73.54*	*192*	*73.28*
Total Non-Minority Pop (White Non-Hispanic)	*120*	*26.61*	*50*	*26.46*	*70*	*26.72*

Source: Census 1990 STF2

Table 2.3.2-29. Population Composition: Age and Sex King Cove; 1990

	1990	
	N	%
Male	292	65%
Female	159	35%
Total	451	100%

Table 2.3.2-30. Ethnic Composition of Population Sand Point; 2000

Race/Ethnicity	2000	
	N	%
White	264	27.7%
African American	14	1.5%
Native Amer/Alaskan	403	42.3%
Asian/Pacific Islands*	224	23.5%
Other**	47	4.9%
Total	952	100%
Hispanic***	129	13.6%

Source: U.S. Bureau of Census.
* In the 2000 census, this was split into Native Hawaii and Other Pacific Islander (pop 3) and Asian (pop 221)
** In the 2000 census, this category was Some Other Race (pop 21) and Two or more races (pop 26).
***' Hispanic' is an ethnic category and may include individuals of any race (and therefore is not included in the total as this would result in double counting).

Table 2.3.2-31 provides information on group housing and ethnicity for Sand Point. Group housing in the community is largely associated with the processing workforce. As shown, 21 percent of the population lived in group housing in 1990. The ethnic composition of the group and non-group housing segments were more similar than for the other communities profiled.

Table 2.3.2-31. Ethnicity and Group Quarters Housing Information, Sand Point, 1990

	Total Population		Group Quarters Population		Non-Group Quarters Population	
Sand Point	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
White	284	32.35	48	25.40	236	34.25
Black	4	0.46	4	2.12	0	0.00
American Indian, Eskimo, Aleut	433	49.32	3	1.59	430	62.41
Asian or Pacific Islander	87	9.91	80	42.33	7	1.02
Other race	70	7.97	54	28.57	16	2.32
Total Population	878	100.00	189	100.00	689	100.00
Hispanic origin, any race	78	8.88	58	30.69	20	2.90
Total Minority Pop	*601*	*68.45*	*14*	*7.41*	*587*	*85.20*
Total Non-Minority Pop (White Non-Hispanic)	*277*	*31.55*	*175*	*92.59*	*102*	*14.80*

Source: Census 1990 STF2

Table 2.3.2-32. Population Composition: Age and Sex Sand Point; 1990

	1990	
	N	%
Male	557	63%
Female	321	37%
Total	878	100%

The King Cove plant processes a good amount of crab and has developed groundfish processing capability, with Pacific cod as the predominant species, and with significant amounts of cod being supplied from both the GOA and the BSAI regions. This plant also processes a large amount of salmon, and some herring and halibut. The Sand Point plant does not process crab and has not processed herring since 1996, and in its groundfish operation has emphasized pollock over Pacific cod. It processes significantly more pollock than does the King Cove plant, but less "other groundfish" and much less Pacific cod of BSAI origin. Salmon is also processed in Sand Point, but much less than in King Cove. Through time, the King Cove plant has maintained a diversity of processing, while the Sand Point plant has become somewhat less diversified. Both plants are currently seeking new species and product opportunities. These dynamics have changed the distribution and peak of employment effort at the seafood plants, which have been further influenced by the affects of the AFA. Detailed production figures cannot be disclosed for the plants because of confidentiality restrictions. King Cove is somewhat unique among the four key regional groundfish ports insofar as it is relatively more dependent upon Pacific cod than pollock, among the groundfish species landed. Sand Point follows the more typical pattern, processing more pollock than Pacific cod. The two plants vary in their pollock product mix, but both plants can now produce surimi as well as fillets. The relative dependence of the plants on different species has varied over time and with stock fluctuations. For instance, for both plants 1993 was clearly a very good year for salmon, while 1996 and 1997 were both poor salmon years. The pattern has been that the Sand Point plant depends more on pollock and groundfish in general, and the lesser (but significant) dependence of King Cove upon groundfish (most of which is not pollock) and its greater dependence on crab and salmon. While changes from 1999 to 2000 cannot be definitively stated to be other than statistical fluctuations, and certainly cannot be attributed to the implementation of AFA alone, it is interesting to note that for King Cove the poundage processed and percentage of total plant dollars for crab decreased, while groundfish increased somewhat. For Sand Point, the pattern for 1999 and before had been for pollock to contribute more than non-pollock groundfish, both in terms of weight and value. This was reversed for 2000. These changes are made somewhat more tentative due to the lack of halibut data in the year 2000 data provided to us by NPFMC staff.

One of the plants obtains Bering Sea pollock in coordination with operations owned by the same company and located in one of the Bering Sea communities. This operation is unique among inshore operators for the degree of coordination across regions and for the way Bering Sea pollock processing is managed between regions. For the other plant, GOA pollock is obtained from the local small boat fleet as well as from a small number of outside boats, but BSAI pollock is obtained exclusively from larger capacity non-resident boats. Neither plant shows up in the 1991 BSAI pollock harvest data, but both appear in the 1994 data, and both increased in volume from 1994 to 1996. The trend since 1996 has been for a decline in the amount of BSAI pollock that these plants process, with a sharp decline between 1999 and 2000, which corresponds with the implementation of AFA for onshore plants.

In terms of employment, 87 percent of Sand Point's workforce is employed full time in the commercial fishery; for King Cove this figure is more than 80 percent (USACE 1998, 1997). In both cases, fishing employment is followed by local government (borough and local) and then by private businesses. Seafood processing ranks after each of these other employers, meaning that the vast majority of the workforce at the shoreplants are not counted as community residents.

In terms of articulation with the community at large, the plants in Sand Point and King Cove are quite different from those in Unalaska/Dutch Harbor or Akutan. As noted, compared to Sand Point and King Cove, the development of commercial seafood processing in Unalaska/Dutch Harbor and Akutan is a relatively recent development (at least in terms of continuity of operations at specific facilities). Both Sand Point and King Cove processors have longstanding relationships with the local catcher fleet which, in turn, is the source of most employment in the community (among permanent residents). This is a sharp contrast to Unalaska. Unalaska is the site of multiple shoreplants, and has a much more 'industrial' fishery than does either Sand Point or King Cove, but this is changing, particularly with respect to Bering Sea pollock, which is not fished by the local small boat fleet. As noted above, the boats delivering BSAI pollock to Sand Point and King Cove are 'Bering Sea' boats, of the same type delivering to the inshore sector elsewhere.

Another major difference between the fishing industry in Unalaska/Dutch Harbor and Sand Point and King Cove is the role of the support sector in the communities. Unalaska has a well developed support service sector, unlike either Sand Point or King Cove. In both Sand Point and King Cove, the lone processing plant has historically provided a variety of fleet support services that the plants in Unalaska no longer have to provide with the development of a support sector. In terms of relationships between inshore and offshore components of the groundfish fishery, Sand Point and King Cove are in quite different positions than Unalaska/Dutch Harbor or Akutan. Unlike Unalaska/Dutch Harbor, neither Sand Point nor King Cove have enterprises related to the offshore sector or derive direct revenues from the offshore sector (although the plant in Sand Point is part of a company which also owns catcher processors). Unlike Akutan, Sand Point and King Cove are not CDQ-qualified communities, and are thus unable to directly participate in CDQ fisheries.

AFA-Related Community Effects

Effects directly related to the implementation of the AFA are difficult to identify and discuss, for a number of reasons. The AFA has only been in place one year for these communities, and quantified comparative measures are for the most part lacking. Even measures which appear to be significantly different in 2000 from those of previous (pre-AFA) years, the change may not be permanent or may be due to factors other than the AFA. Also, because of the central role of the processors in these communities, many AFA effects are directly related to changes in the operations of these processors – and these operations are understandably reluctant to disclose the details of their operations, which could not be discussed in any event due to confidentiality requirements. Other effects are more speculative and would require a great deal of effort to test, given current information. There are still a number of "community effects categories" that can be discussed for these communities.

Changes in Processor Operations

The processors in both Sand Point and King Cove are qualified as AFA (BSAI pollock) processors. Of the two, only the King Cove plant also has a Co-op Processor Endorsement, as five CVs did deliver at least 80 percent of their inshore pollock to the King Cove plant during the AFA-qualifying period (while delivering most of their pollock offshore to a mothership owned by the same company as the shoreplant). Thus the King Cove shoreplant is effectively capped at this level of BSAI pollock. Given the commitment of this plant's management to increased groundfish (and pollock) processing, as evidenced by the recent installation of a surimi line, this may represent an opportunity that has been foreclosed. Furthermore, the King Cove plant is relatively well located to process BSAI pollock, and is somewhat on the periphery of GOA pollock. On the other hand, the King Cove plant was not quick to develop pollock processing under the open access system and may have installed a surimi line in response to other competitive pressures, which are most likely also the result of the implementation of AFA. That is, the increased recovery rates experienced by other AFA processors, in part due to less need for speed and in part due to the adoption of additional technology, has exerted a force on other processors to adopt that same technology, even for relatively small amounts of fish. The Sand Point processor does not have a Co-op Processor Endorsement, as every boat which delivered BSAI pollock to this plant delivered over 80 percent of its BSAI pollock to another plant owned by the same company in the Bering Sea. The operational pattern for the Sand Point plant was to serve as a "relief valve" for this Bering Sea plant during the open access race for fish. This maximized the amount of BSAI pollock that the parent company could process. With the implementation of the AFA and the end of the race for fish, the BSAI pollock season was lengthened and the rate of harvest (and processing) reduced. This much reduced the need to divert pollock to be processed at the Sand Point plant and seems to have confined this need to the "A" and "B" roe seasons. The reason given for this was that the need to harvest roe at its peak imposes a natural and inevitable "race for roe" that at times resulted in a harvest of more fish than could be processed by the Bering Sea plant alone. Sand Point and company managers saw little need to process "C" or "D" season BSAI pollock in the Sand Point plant. The imprecise processing figures we have for 2000, compared to 1999, seem to support this change, as the Sand Point plant processed significantly less BSAI pollock than in the year before, as well as significantly less pollock overall. Steller sea lion measures, and a shift of GOA pollock quota to the Kodiak Shelikof area, no doubt have a significant role in this change as well.

AFA sideboards caps also have potential effects on both of these operations. Although the King Cove plant processes significantly more BSAI cod than the Sand Point plant, its current production is less than in the past and has been declining. The Peter Pan Seafoods 2000 Co-op Report notes that the cod sideboard allocations of the five vessels delivering pollock to the King Cove plant were allocated to the mothership sector, and they report a reduction in their tendering needs for Pacific cod. Furthermore, the crab sideboards have clearly also been a significant factor for this plant. The plant itself is capped at well below its historical capacity, and the company has moved a floating processor, which is not subject to the AFA crab cap, into King Cove. Total crab processed in King Cove in 2000 appears to be significantly less than in 1999. Thus it is almost certainly true that the AFA has made it difficult, if not impossible, for the King Cove plant to continue its historic level of processing, and this would certainly affect the revenues of the City of King Cove.

More information is available on recent operation dynamics in Sand Point than in King Cove, since we talked with plant managers there. Volume available to the plant has decreased, for a number of reasons, low local quotas and Steller sea lion measures among them. Prices are low, with the only real "money makers" being "by-products" such as pollock roe, cod milt, and cod stomachs. They have been forced to modify their operations accordingly, primarily to scale back and economize wherever they can. Their peak labor force used to be in the summer for salmon, but is now in January and February for groundfish. There will be a secondary peak in the summer, but earnings then will not be nearly as high. They have a much reduced labor force even at their peak (about 250+), and have closed some of their bunk house facilities. Their core processing group is now perhaps 40+ processors, maintenance, and professional people. They have fewer processor foremen positions, as well as fewer office staff. They have also reduced the inventory in their store and, perhaps more significantly, have reduced the inventory of boat supplies and repair materials that they keep in stock. They now support a welder position only in the peak of the "A" season, and otherwise have this person at one of their other plants as an "on call" person for Sand Point (There is a local person who now supplies welding services as well). The plant has been reduced to 2 engineers from 4, and from 2 mechanics to 1. According to one senior manager, "For so long the idea was to work people as many hours as possible. Now that the fish are not in the pipeline, the idea is to match the workforce to the fish throughput."

Fleet Effects

One of the most talked about, but least demonstrable community impacts related to the AFA are those related to the "spillover" effects of a rationalized BSAI fishery on an open access GOA fishery. Sideboards were of course implemented as part of AFA to address such fears, but local fishermen still think that there are mechanisms through which non-local or corporate fishermen can use the advantages gained through their solidified rights in the AFA BSAI pollock fishery to bolster their competitive position in the open access GOA fisheries. The motivation for doing so was either that this was one way to maximize one's earnings in the short run, as well as a way to increase one's history of effort in GOA fisheries in the event that some sort of GOA rationalization takes place. Several scenarios were mentioned to us during interviews:

- Simply being able to schedule the harvest of BSAI pollock allows these vessels (and vessel owners) to potentially be able to harvest their BSAI quota at a time that also allows them to fish in the GOA during opportune times (especially AFA-exempt boats)
- Such boat owners could also lease their BSAI quota and use the time and resources to increase their history of effort in the GOA
- Corporate boat owners could rotate the deliveries of their vessels between plants in the Bering Sea and GOA so as to ensure that these vessels would be qualified under a GOA rationalization.

Local fishermen in Sand Point and King Cove are quite sensitive to such possible competition, since for the most part local fishermen feel excluded from the pollock fishery and fear losing their relative competitive advantage in other fisheries. They view themselves as small boat fishermen potentially competing with larger boat fishermen. The degree to which this has taken place, or will take place, is impossible to demonstrate, but is one possible effect. Confounding factors, of course, are recent poor salmon runs and low salmon prices, the fact that Steller sea lion fishing exclusion zones are significantly more harmful (in terms of increased cost and reduced safety) to smaller vessels than to larger ones, and the recent restrictions on the Area M salmon fishery. All of these factors, combined with the perceived advantages gained by AFA-qualified vessels which also participate in local fisheries, induce a greater feeling of insecurity in local fishermen than in past times.

A processor perception of this issue is that “Bering Sea boats” (whether independent or processor owned) do not really fish all that much in GOA waters, and are subject to sideboards. These “big boats” do not take too much of the local quota – rather, the local pollock quota is too small and the Kodiak-area pollock quota too large. The view was expressed that the large fish with roe are in the western gulf, whereas "too much" of the quota is in the eastern gulf which has only small pollock. Thus, rather than looking to AFA as a factor, “fish politics” and other issues that influence where fishing is allowed (Steller sea lion RPAs) are more pertinent issues. An example cited was the shift of pollock quota from Sand Point area (4,000,000 from 610 and 4,000,000 from 620) to the Kodiak (Shelikof) area. This change was made last year and it may have worked reasonably well. However, this year the “A” season in the Shelikof left 16,000,000 pounds in the water (due to lack of fish and bad weather). Half was rolled over to the “B” season (which was ongoing at the time of fieldwork) and half was simply “lost” to the fleet and not made available for harvest. During our fieldwork in Sand Point most of the local pollock fleet was thus over in Kodiak, where the quota was, fishing for the Trident plant located there.

Community Effects

There are few quantitative measures of economic activity in Sand Point which reflect the most recent dynamics. Available information on the overall budget for the City of Sand Point, and the receipt of sales taxes, indicates that these amounts have been steadily increasing (Figure 2.3.2-1). It should be noted that the reporting years end June 30, so that the most recent information is from June 30, 2000. The Sand Point Mayor reports that for this year (2001), sales tax receipts are significantly less than for last year, by somewhat over 20 percent. Sales taxes are composed primarily of the raw fish tax and taxes on general retail sales, and the increase in 2000 is due primarily to the collection of significantly more fish taxes than expected. Information available on the value of processing in Sand

Point is not totally consistent with this fish tax information, but is subject to estimation problems, especially for products with pricing mechanisms like that of roe. It is likely that roe prices in 1999 and 2000 account for the higher than expected tax receipts. Volume of production at both the Sand Point and King Cove plants declined significantly in 2000, after hitting peaks in 1999 that were the highest since 1993.

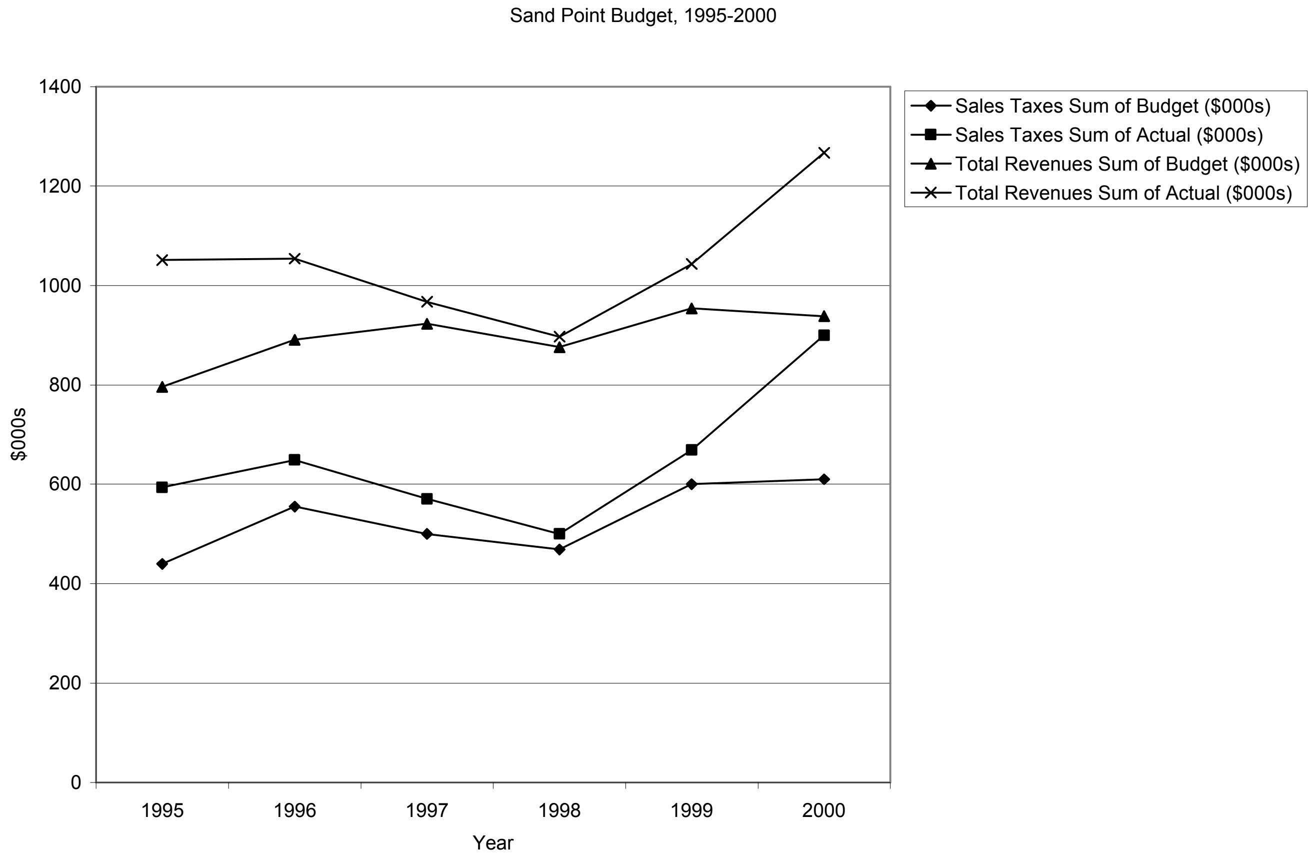


Figure 2.3.2-1. Sand Point Budget, 1995-2000

Retail and support activities in Sand Point are difficult to gauge, and company records are not available. Sales before June 30, 2000 are of course aggregated into the general sales tax information presented above. The native Corporation started a retail grocery store, in order to provide some price competition for the long-time single grocer in the community (the processing plant also has a store, which is used mainly by its processing workers). This investment was made in 1997, when fishing conditions looked good, along with the purchase of a local NAPA store. The NAPA enterprise went out of business last year, but the store has been doing comparatively well. Corporation officers reported that even in these times of depressed economic activity that the store had gross sales of somewhat more than last year for the first quarter of this year. They estimate that the more established store does approximately four times as much business as their store, and that store certainly stocks a much wider range of goods. The corporation has owned a local tavern since 1975, and it has consistently made a profit. The corporation's hotel is also successful, although it is busier in the winter than in the summer. A private bed and breakfast that was started recently has developed a strong business and tends to be full year-round. There are limited restaurants in the community, and one is currently up for sale.

The Sand Point and King Cove economies are still very cyclical, and tied to fishing and fish processing. Because of expected low salmon prices, most people are expecting severe local effects. Some of the signs they already see are the failure of Reeve Aleutian Airlines and less travel by local residents. Several families have moved out of Sand Point and the school enrollment is significantly lower than last year. Mail service is said to have been decreased in frequency. Overall retail economic activity is said to be reduced, and the corporation has not been operating the lounge (bar and simple food) associated with the hotel this winter, although the tavern is still doing good business. Given that many of the factors cited for these effects are regional (low fish prices, Steller sea lion measures, competition from farmed fish, Area M changes, and other management and resource concerns), it is possible that King Cove and Sand Point may grow in size because of population movement from smaller regional communities in even worse economic shape. This is not likely to strengthen the local economy, however.

The dynamics of the “available labor force” were also noted to have recently changed. Local resident wage and salary jobs have in the past been fairly well differentiated by sex – men either fished or worked at some “outside” occupation in a “land” department such as construction, maintenance, or fire and police. Women tended to fill office and service positions. Employers have started to see a change in this pattern, as more men are applying for steady (even if relatively low paying) jobs on land rather than fishing. The most commonly cited factor for this was the projected low salmon price, with the expectation that salmon members crew shares would not amount to very much. Other families have considered moving. The common pattern in the past has been for locals to graduate from high school and either go fishing or move to another community. There has been relatively little turnover in local jobs, as these jobs tend to be highly valued by those who occupy them since there are relatively few of them (and there are of course jobs that are held by more transient non-locals). Local opportunities are seen as quite constrained, and the local Native Corporations are looking more for non-local investment opportunities rather than local ones.

It was pointed out by several people that development opportunities in Sand Point are quite limited. Limited air service makes the shipment of fish products very difficult, and precludes a great number of “value added” enterprises. Reeves Aleutian Airlines flew relatively large planes into Sand Point, but has been replaced by PenAir, which flies smaller planes and is more focused on passenger and mail service than on cargo. A common view in Sand Point, outside of the processor, is that AFA created a closed class of pollock processors and by so doing made it very difficult for new processors to go into business. Such new processors would be hampered by their inability to process pollock, and so would be by definition not as well diversified as AFA-qualified processors. Local fishermen believe that this leaves them at a disadvantage in terms of price negotiations for any fish that they catch, in that there are only a limited number of buyers who do not need to worry about any new competitors. That is, they think that being AFA-qualified allows a processor somewhat more leverage in price discussions for all fish species than would otherwise be the case.

Housing in Sand Point has always been in short supply, primarily because most housing is built through government agencies. There has not been any recent residential construction. Several families looking for permanent housing were staying at the corporation’s hotel during the brief fieldwork conducted for this study. This is not only an indicator of a restricted housing supply, but also an indicator that the hotel has rooms available during the winter. Local residents did report that some houses are occupied only seasonally, in conjunction with the summer fisheries, but that such houses were generally not available for rent, except perhaps to family, friends, and other "known" people.

In summary, the community level impacts of the AFA have been felt in several different areas in Sand Point and King Cove. Processing employment patterns have changed significantly for the Sand Point plant, and it is presumed in King Cove as well (although perhaps to a lesser degree). The contribution of AFA to such changes in Sand Point is difficult to determine, and while certainly a component is probably less important than are Steller sea lion protection measures and the availability of GOA pollock quota locally. For King Cove, AFA sideboard measures for crab and Pacific cod may be the more important factors, and AFA may be more significant overall. The relation of the processor to the communities has not changed to any appreciable degree. The company owning the Sand Point plant has purchased some freighters and does some of its own shipping, but must still use the private services that they used before, none of which are locally based. Similarly, most support services were and remain processor based. AFA has not had any detectable effect on the housing market. Processing workers are for the most part housed in company facilities, so that these workers and local residents do not compete for housing. The dynamics of locals remaining or moving from these communities are probably more related to other ongoing dynamics rather than to the AFA.

The AFA has definitely contributed to an overall perception of fisheries management as a political process which is manipulated by those with the largest economic interests. Most of those contacted for this research thought that, for good or ill, some sort of rationalization is inevitable for GOA groundfish fisheries. There was no consensus on what form of rationalization this should take, other than that most processors thought that some form of processor quota (at a minimum, the sort of co-op rules now operative in the Bering Sea) were absolutely necessary, and that most fishermen (and their organizations) thought that processor quotas should not exist in any form. There was also no consensus on whether the NPFMC or Congress would be the more likely forum to decide this question, except that some expressed the opinion that the AFA has made it more difficult for any other management change to "sneak in" without undergoing the extensive NPFMC public process.

The analysis of ownership changes precipitated by AFA was not available at the time of this draft. Information from our interviews did not indicate any change due to the AFA, except perhaps for an extension of the pre-existing pattern. The plant in King Cove is part of a company that owns a large number (and percentage) of its CV fleet. These (and perhaps some independent boats) are the vessels which deliver most of the plant's pollock, and these vessels are considered non-local boats. The King Cove plant has all of its Bering Sea pollock delivered by non-local boats as well. Local boats do deliver some GOA pollock to these plants. AFA has exacerbated the perception of "non-local" boas impinging on local fisheries, but it is not possible to be very precise about its contribution to that perception, or whether it merely reinforces an already deeply held local perception.

AFA has certainly changed the annual fishing and processing cycles for these processors and communities. For King Cove, crab deliveries and processing were much reduced in 2000 from those in 1999, and BSAI Pacific cod may have been similarly affected by AFA sideboard measures. The Peter Pan Seafoods 2000 Co-op Report indicates that the King Cove plant took delivery of Bering Sea pollock on four days in February, five days in March, two days in April, ten days in September, and five days in October. For Sand Point, plant managers reported less Bering Sea pollock being delivered during the "A" and "B" seasons, and very much less, if any, during the "C" and "D" seasons. This reflects the historical pattern for King Cove BSAI pollock, but a reduction for Sand Point. Crab and Pacific cod reductions were much more significant for King Cove. While the BSAI pollock reductions were significant for the Sand Point plant, it is likely that they are only part of a much larger pattern also involving Steller sea lion protective measures and the availability (or lack of it) of pollock quota in the GOA.

Similarly, community services are perceived to be in danger from decreased revenue flows resulting from reduced processing. The AFA is generally not attributed to have a major role in this for Sand Point, although AFA's effect on services in King Cove may be greater. There is no general community consensus on AFA and its effects on Sand Point and King Cove, since there is no agreement on what those effects, if any, have been (other than potential revenue loss of raw fish taxes, the AFA component of which is yet to be determined). There is general agreement that local fisheries and fishermen need greater protection from the potential expansion of AFA-qualified boats into GOA fisheries, although this sort of effect is also somewhat more speculative than demonstrated at this point. No one mentioned the increase of the CDQ allocation as a detrimental effect on non-CDQ communities, although it logically did decrease the amount of pollock being processed by each of the plants to some small degree.

2.3.3 Kodiak Island Region

2.3.3.1 Regional Characterization

Overview. AKKO encompasses the Kodiak Island Borough (KIB) and other parts of the Kodiak archipelago. Linkages between this region and the groundfish fishery are predominantly associated with the City of Kodiak and its suburbs. Kodiak is the dominant GOA fishing community for groundfish, and is important for salmon, halibut, and other species. The region accounted for almost 14 percent of the volume of groundfish processed inshore in all regions of the state (1991-1999). This volume included 9 percent of the pollock, 24 percent of the Pacific cod, 41 percent of the flatfish, and 27 percent of the ARSO category of groundfish processed.

Population. The City of Kodiak has become the hub community of the region, at present comprising just less than 50 percent of the KIB population. Furthermore, a significant part of the region's population lives very near Kodiak in unincorporated areas of the KIB. When these areas are taken into account, at present approximately 85 percent of the KIB population lives in and around the City of Kodiak. In ethnicity, the city is about 13 percent Native, while organized communities outside the city are predominantly Native (68 to 94 percent). The predominant minority in the city and its surroundings is Asian and Pacific Islanders, followed by Natives and Blacks. The predominant minority in other regional communities is Caucasian, with few other minorities present.

Employment and Income. The economies of AKKO communities are all heavily dependent on fishing, and for the City of Kodiak, groundfish are an important component of this dependence. In terms of aggregated statistical economic sector measures, fishing and fish processing activities rank first for this region. This sector provides an important base for the retail, service, and government sectors, which follow it in relative size. The military sector is also significant, primarily because of a local Coast Guard base. The City of Kodiak can be distinguished from other regional communities in several ways. Whereas the city has relatively low rates of unemployment and poverty, other communities have higher rates. In terms of income measures, the city ranks highest.

Tax and Revenue. The City of Kodiak and the KIB are the primary taxing entities in the region. City or community services outside the city are quite limited, or are supplied by the KIB or privately. The KIB levies a property tax of 9.25 mills, a 5 percent accommodations tax, and a 0.925 percent severance tax on natural resources. Other communities levy limited taxes. AKKO is also dependent on income from State of Alaska fisheries taxes. The region's share of the fisheries business tax and fishery resource landing tax amounted to $1,330,856 in 1999.

Inshore Processing. Groundfish has made up over 70 percent by weight of the fish processed in the AKKO region. Pollock comprises about 51 percent of the groundfish by volume. Pacific cod makes up about 27 percent, flatfish about 15 percent, and ARSO about 7 percent. This pattern of dependence by species reflects the composition of the groundfish species available. While the volume of groundfish processed in the region is much less than in AKAPAI, prior to the implementation of the AFA, utilization was higher and the value per ton of final product was higher. In terms of value, groundfish has recently composed 40 to 45 percent of the total fish processed in the AKKO region, with an increase to about 61 percent for 2000 (see more detailed Kodiak discussion below).

Processing Ownership. Although Kodiak residents own both onshore and offshore processing facilities, onshore plants that process pollock and Pacific cod are owned predominantly by entities outside the region (1995 to present). AKKO residents are active in the ownership of offshore processing vessels for groundfish other than pollock. Residents historically have owned three to six offshore processing facilities, with the lower numbers in earlier years. The total volume of groundfish processed by regionally owned processing facilities prior to AFA was 37,500 metric tons: about 16 percent pollock, 39 percent Pacific cod, 24 percent flatfish, and 22 percent ARSO. The value of the groundfish processed by these regionally owned facilities was $22.5 million: 60 percent from Pacific cod, only 3 percent from pollock, 20 percent from flatfish, and 17 percent from Atka mackerel, rockfish, sablefish, and other groundfish (ARSO).

Catcher Vessel Ownership and Activity. The AKKO-owned fleet is very diverse. Some vessel classes, especially the larger trawl vessels, have displayed remarkable stability over time. Smaller trawlers have become fewer. Fixed gear vessels have increased in number. Most of the fleet's fishing activity is in the Central Gulf of Alaska (CG), and product is delivered to Kodiak shore plants. Since 1991, catcher vessels owned by AKKO residents have harvested a significant amount of fish in the BS as well. In 1996 these vessels harvested about the same amount in the BS as in the CG. Since 1997, Kodiak-owned vessels have tended to harvest 2.5 to 3.5 times as much groundfish in the CG as in the BS. Based on federal blend data, the 1999 harvest was about 58 percent pollock, 31 percent Pacific cod, and about 11 percent in the other two categories. In value, Pacific cod contributed 43 percent, pollock about 30 percent, flatfish about 6 percent, and ARSO about 22 percent. State fish ticket data indicate more delivery and processing of Pacific cod, both in terms of weight and value.

Harvest Diversity. In terms of the "annual round" for groundfish catcher vessels owned by residents of AKKO, groundfish and other species tend to complement each other. Groundfish have accounted for less than half of the total ex-vessel value accruing to these vessels in recent years. Halibut, crab, and salmon are also important fisheries to these vessels. More than 50 percent of the groundfish catcher vessels participate in the halibut fishery, and more than 33 percent participate in the salmon fishery.

Processing Diversity. Groundfish have accounted for roughly 30 to 47 percent of ex-vessel value for all onshore processing plants in AKKO from 1991 to 1999, with a general increase in value over this period. This increased to about 61 percent for 2000 (with the qualification that halibut numbers were not included in the 2000 totals, so that the significance of this increase is suspect). Groundfish are economically more important than any other species or species group. Salmon are second in importance, in some years being close (or as recently as 1995 exceeding) groundfish in value. Halibut, while relatively more important for AKKO than for AKAPAI, generally accounts for less than 20 percent of the ex-vessel value of fish delivered to shoreplants in AKKO.

Subsistence. Kodiak is the single regionally important groundfish community. Residents of the City of Kodiak are reported to harvest and consume about 151 pounds of subsistence resource per capita, of which 72 percent is fish. However, groundfish comprise only about 8 percent of the total (12 pounds per capita).

Tables 2.3.3-1 through 2.3.3-4 summarize information on regional engagement with the groundfish fishery through 1999, the last year pre-AFA onshore co-ops.

Table 2.3.3-1. North Pacific Groundfish Fishery Participation Measures for the Kodiak Island Region by Year, 1991-1999

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999
Processor Employment and Payments to Labor									
Employment (Est. FTEs)	NA	455	557	502	561	429	473	534	574
Payments to Labor ($Millions)	7	26	27	29	31	25	24	27	29
Groundfish Processing by Regional Inshore Plants									
Reported Tons (Thousands)	NA	92.2	111.9	98.9	76.8	66	83.7	96.8	101.4
Product (Thousands)	NA	23.9	28.9	25.8	24.3	20.5	21.5	24.1	27.7
Utilization Rate (Percent)	NA	26	25.8	26.1	31.6	31	25.7	24.9	27.3
Product Value ($Millions)	NA	69	72.3	77.5	84	63.44	62.9	70.4	74
Value per Ton ($)	NA	748.4	645.8	783.9	1093.7	960.5	751.5	727.2	729.9
Processors Owned by Regional Residents									
No. of Processors Owned	9	10	11	10	9	6	5	7	10
Reported Tons (Thousands)	38.8	74.7	79.4	78.9	43.4	32.7	38.2	32.4	37.5
Wholesale Value ($Millions)	NA	50.8	46.8	51.6	29.6	19.4	18.1	17.4	22.5
Catcher Vessels Owned by Regional Residents									
No. of Catcher Vessels	204	229	162	196	198	182	217	205	NA
Employment (Persons)	796	886	628	669	751	715	804	767	NA
Payments to Labor ($Millions)	8.7	10.6	8.5	8.7	10.7	11.3	12.4	8.9	NA

* Value suppressed due to the confidentiality of the data.
NA = Not available

Table 2.3.3-2. Groundfish Reported by Kodiak Inshore Plants by Species, 1999

	Total Reported Harvest by Species				
	FLAT	ARSO	PCOD	PLCK	Total
Reported Tons (Thousands)	8659	9814	30738	52143	101354

Source: NMFS Blend Data, 1991-1999.

Table 2.3.3-3. Retained Harvest by Catcher Vessels Owned by Residents of the Kodiak Region by FMP Subarea, 1998

	Retained Harvest and Ex-Vessel Value by FMP Subarea					
	AI	BS	WG	CG	EG	Total
Retained Tons (Thousands)	0	16.9	2.2	56.8	0.3	76.2
Ex-Vessel Value ($Millions)	0.1	3.4	1	17	0.8	22.3

[a] Due to the confidentiality of the data presented, this value has been added to the CG value.

Table 2.3.3-4. Retained Harvest by Catcher Vessels Owned by Residents of the Kodiak Region by Species, 1998

	Retained Harvest and Ex-Vessel Value by Species				
	ARSO	FLAT	PCOD	PLCK	Total
Retained Tons (Thousands)	4.4	4.5	23.4	43.9	76.2
Ex-Vessel Value ($Millions)	4.8	1.3	9.7	6.6	22.3

Tables 2.3.3-5 and 2.3.3-6 update the selected existing conditions information for the tables from the Groundfish SEIS abstracted above. As they are not based on exactly the same information, a time series is provided to "calibrate" them with the more developed information contained in the groundfish SEIS. Our intent is not to furnish precise numeric values for the measures of interest, but rather to concentrate on continuities and changes, and for the latter, the direction and magnitude of change. These tables, and their proper interpretation, are especially important as they provide the only comparative quantitative information for 2000 with previous years for this section, and for the onshore sectors 2000 was the first year of AFA implementation. Since this represents only one year of information, any numeric value is at best an approximation of change and has little or no significance in and of itself as an indicator of trends. Information for the year 2000 must be interpreted in the context of ongoing dynamics, as well as the changes introduced by the AFA, and interviews with industry participants and other key individuals in the communities we visited was essential for this process.

Table 2.3.3-5 provides information for all processing sectors for groundfish only, using federal blend data for the years 1996-2000. This table indicates that motherships last operated in the GOA in 1997, and that catcher processors are excluded from the GOA pollock target fishery. Table 2.3.3-6 presents similar information for CVs, using fish ticket data. This table demonstrates that even though less GOA pollock was harvested in 2000 than in 1999, Kodiak CVs share of that harvest increased relative to 1999, and the value of that catch even increased in absolute terms. More generally, Kodiak boats maintained their positions relative in 1999 in all groundfish fisheries except for the "other-ARSO" category, where the weight harvested was increased but the value was about the same as in 1999. Weight harvested and value increased significantly in the flatfish category. In the BSAI, Kodiak boats participated at a somewhat lower rate than in 1999 (although in absolute terms one more Kodiak boat fished pollock in the BSAI than in 1999), but harvest by weight and value increased somewhat more than the expected average. The harvest of flatfish and Pacific cod for Kodiak boats decreased in 2000 relative to 1999, although there was a relatively small relative increase in terms of the "other-ARSO" category.

Table 2.3.3-5. Groundfish Processed by Sector by Species by Year for the AKKO Region, 1996-2000

	1996	1997	1998	1999	2000
Mothership Sector Species Group					
ARSO					
FLAT					
PCOD					
PLCK					
Catcher-Processor Sector					
ARSO	11,950	7,193	5,642	4,562	4,863
FLAT	2,931	7,962	6,668	4,490	6,088
PCOD	7,614	8,583	8,988	13,909	13,043
PLCK	2,514	2,468	1,782	2,801	2,728
	25,009	26,206	23,080	25,763	26,723
Shoreplant Sector					
ARSO	6,984	6,874	6,817	8,318	10,807
FLAT	10,749	11,514	5,924	5,361	9,894
PCOD	23,336	29,344	27,452	34,123	25,823
PLCK	19,894	36,371	68,323	58,835	46,414
	60,963	84,104	108,516	106,637	92,974
	85,972	110,310	131,596	132,400	119,697

Source: Federal Blend Data provided by NPFMC staff

Table 2.3.3-6. Number of Boats and Retained Catch by Weight and Value by Species Category by Catcher Vessel Ownership by Region, by Area of Harvest

AKKO

Data		Year 1995	1996	1997	1998	1999	2000
ARSO							
BSAI	Boats	16	22	19	14	14	18
	Pounds	88,301	190,249	242,714	149,248	122,134	194,485
	Dollars	149,296	332,401	524,074	200,298	178,647	350,594
GOA	Boats	92	98	131	114	103	111
	Pounds	3,336,981	9,170,722	9,279,118	9,458,843	7,605,123	12,989,104
	Dollars	4,010,398	7,009,584	6,598,739	4,491,983	4,285,298	5,460,383
Combined	Sum of BOATS	108	120	150	128	117	129
	Sum of TOTLBS	3,425,282	9,360,971	9,521,832	9,608,091	7,727,257	13,183,589
	Sum of TOTDOL	4,159,694	7,341,985	7,122,813	4,692,281	4,463,945	5,810,977
Flatfish							
BSAI	Boats	7	17	15	10	13	14
	Pounds	3,731	175,631	353,189	318,318	127,392	99,407
	Dollars	98	16,259	98,204	82,578	31,483	13,895
GOA	Boats	40	44	46	39	27	28
	Pounds	10,932,445	15,737,158	14,650,674	9,569,914	4,825,295	12,327,408
	Dollars	1,594,015	2,566,390	2,139,704	1,196,478	559,375	1,417,637
Combined	Sum of BOATS	47	61	61	49	40	42
	Sum of TOTLBS	10,936,176	15,912,789	15,003,863	9,888,232	4,952,687	12,426,815
	Sum of TOTDOL	1,594,113	2,582,649	2,237,908	1,279,056	590,858	1,431,532
Pacific Cod							
BSAI	Boats	28	40	26	17	29	32
	Pounds	11,621,478	20,074,372	11,573,666	6,440,718	6,309,423	2,535,632
	Dollars	2,159,134	3,379,597	2,095,425	1,174,872	1,701,358	712,254
GOA	Boats	150	106	170	160	170	195
	Pounds	42,545,649	32,331,944	44,827,588	43,492,012	50,012,120	37,794,878
	Dollars	9,384,393	6,490,926	9,661,966	8,158,708	14,890,525	11,914,213
Combined	Sum of BOATS	178	146	196	177	199	227
	Sum of TOTLBS	54,167,127	52,406,316	56,401,254	49,932,730	56,321,543	40,330,510
	Sum of TOTDOL	11,543,527	9,870,523	11,757,391	9,333,580	16,591,883	12,626,467
Pollock							
BSAI	Boats	12	13	12	9	10	11
	Pounds	26,403,887	23,938,247	10,519,254	1,235,146	10,368,040	14,412,243
	Dollars	2,557,258	1,943,470	1,097,600	78,584	985,540	1,657,205
GOA	Boats	43	44	69	60	55	60
	Pounds	35,571,339	28,835,667	50,391,007	65,115,300	44,820,534	38,456,408
	Dollars	3,463,953	2,686,694	5,294,998	4,448,952	4,256,741	4,457,960
Combined	Sum of BOATS	55	57	81	69	65	71
	Sum of TOTLBS	61,975,226	52,773,914	60,910,261	66,350,446	55,188,574	52,868,651
	Sum of TOTDOL	6,021,211	4,630,164	6,392,598	4,527,536	5,242,281	6,115,165

All Groundfish Species							
Combined	Total Sum of BOATS	217	209	235	211	218	250
	Total Sum of TOTLBS	130,503,811	130,453,990	141,837,210	135,779,499	124,190,061	118,809,565
	Total Sum of TOTDOL	23,318,545	24,425,321	27,510,710	19,832,453	26,888,967	25,984,141

2.3.3.2 Regionally Important Groundfish Communities and AFA Impacts: Kodiak

In the Kodiak region, only the City of Kodiak has direct links with the groundfish fishery, so it will be the only regional community discussed in detail. This section will draw upon previous profiles (IAI 1991, Northern Economics et al. 1994, IAI 1994) as well as more current information from the Groundfish SEIS and field interviews.

Kodiak's identity is that of a fishing community. Through time, both its fishermen and processors have developed a dependency upon groundfish (summarized below), but a singular characteristic of both sectors is the participation in many different fisheries. That is, many participants display a wide diversification in their fishery operations. This section will focus on their participation in the groundfish fishery, and on linkages between the community and the groundfish fishery.

Commercial fish processing in the Kodiak region began on the Karluk spit in 1882. Not long after that, canneries were established in the community of Kodiak. While the quantity and form of shore processing plants in Kodiak has changed, this sector remains an influential component of the fishing industry that is, in turn, fundamental to the community and its economy.

Shore processing facilities or "canneries" in the Kodiak region concentrated primarily on salmon and herring prior to 1950, although there was a cold storage facility at Port Williams where halibut was frequently landed. As their common name suggests, the product produced was most often canned fish. Cannery operations expanded in the 1950s to accommodate King crab processing. Thirty-two processors processed 90 million pounds of crab in 1966. In the following years, there was some growth within the sector; for example, one new shore plant was built in Kodiak in 1968. Declining harvest levels, however, prompted several shore plants to move their operations during the late 1960s and early 1970s to Unalaska/Dutch Harbor in the Aleutian Islands, closer to the larger supply of Bering Sea-Aleutian Island King crab. This move also diverted some of the crab which had previously been taken to Kodiak for processing, and the number of shore plants in Kodiak declined by more than half. A temporary resurgence in the Kodiak red King crab stocks in the mid-to-late 1970s instigated expansion of existing plants once again, and fostered the building of two new plants in Kodiak. Larger freezing capacity was a notable addition to most of the shore plants. This allowed flexibility in storing larger volumes and processing more species into more diversified products. Larger docks also became important to the processors so that they could unload more boats in a given amount of time. With a larger overall capacity to process fish, competition by the plants for the fish resource increased, and the rate of return for individual shore plants declined. Diminishing crab stocks as the fishery entered the 1980s compounded this problem. After a record catch in 1980, the Kodiak King crab stocks crashed. Several factors, including over harvesting and natural conditions, have been cited by fishermen and scientific sources as contributors to this collapse. There has not been a red King crab opening in the Gulf of Alaska since 1982. Waters around Kodiak still produce tanner and Dungeness crab fisheries, and Kodiak shore plants process these species in addition to the few deliveries of crab they receive from boats returning from the Bering Sea fishery.

When King crab stocks started to crash in the late 1960s, some of the Kodiak plants sought to diversify. At least one plant added facilities to separate the previously dominant crab line; and the main plant was then converted into a shrimp plant. Other plants report they "evolved into shrimp" to augment their crab production. Kodiak shrimp landings peaked in 1971, and stocks crashed in the late 1970s. The reason, while not definitive, may have been related to predation by large stocks of cod and pollock. Between 1978 and 1981, several Kodiak processing plants stopped shrimp production.

Efforts to fish Dungeness crab along the Kodiak coastline were slower to intensify, and landings peaked in 1981. At about the time when the Kodiak shore plants started processing shrimp, the bairdi tanner crab fishery "started to become a reality," but the tanner crab seasons, like the seasons of other crab species, soon became shorter and less productive. Many of the plants maintained halibut production lines while they were processing crab, shrimp, and salmon. At that time, halibut processing was not the intense activity it was to become under the Olympic open access system. The season was open most of the year and there were relatively few boats fishing it. As the crab and shrimp faded as viable resources to maintain shore-plant production, salmon became much more important to the processing companies in Kodiak, as they continued looking for products to fill the gaps in their production.

The provisions of the Magnuson Act of 1976 gradually expelled the foreign fleets capitalizing on the groundfish fishery within the Gulf of Alaska EEZ, while American boats and processors entered the fishery. By the late 1970s a few Kodiak shore plants, according to one plant manager, started experimenting with groundfish resources "because there wasn't much crab to do." However, the majority of the groundfish caught prior to 1988 was processed aboard foreign vessels, first by wholly foreign operations, and then by joint ventures where American boats delivered to floating foreign processors. One informant described the late 1970s and 1980s as years of "forced" diversification:

> In that same time period [late 70s-early 80s] we started playing around with halibut and black cod, and very early playing around with other groundfish, and then in the mid-80s we got a lot more serious, and then in 1988 we built the new factory for surimi. It's pretty easy to see that we were kind of just forced into it. I mean, if you wanted to stay in the fish business you got into groundfish because that is all there was. And of course during that whole period, we continued to process salmon and herring and other products that were available to us.

Plant and dock expansions fostered their ability to further utilize groundfish resources. The first surimi production in Alaska took place in Kodiak in 1985 with the aid of an Alaska Fisheries Development Foundation Saltonstall-Kennedy grant. Also in the mid-80s, "the State of Alaska came out with their tax credit program for getting into the groundfish, and so we fully utilized that," according to one plant operator, and his was not the only plant to do so. In 1987, a single plant processed about one-third of all the pollock that was taken out of the Gulf, but tax credits and other incentives contributed to additional effort and capitalization in the processing sector. This had limiting effects on large volumes being received by any one plant. The growth of the shore-based groundfish fishery in the Gulf of Alaska provided most Kodiak processors with products needed to keep their plants running nearly year round. Large capital investments made the capacity to process groundfish resources greater than the total amount delivered, but a number of factors have converged to change operations significantly. Changing seasons have forestalled the opportunity to run plant operations year-round or at maximum capacity for extended periods of time, and competition for the "race for fish" stimulated overcapitalization in both the harvesting and processing sectors. Inshore/Offshore-1 management measures provided protection to GOA onshore processors and the harvesters who deliver to them from preemption by the offshore sector, but even with license limitation the GOA fishery is still characterized by overcapitalization. The derby-style fishing tactics and, in particular, the large volumes of pollock that can be caught in a short amount of time with contemporary equipment and technology can effectively "plug" the shore plants. If plants increase their capacity to handle these peak demands, they are essentially "capitalizing for inefficiency" as much of this capacity will be idle for most of the year. After the implementation of the AFA in the Bering Sea, some Kodiak processors also cite the "race for history" in GOA fisheries (and especially pollock) as an additional pressure towards inefficiency in local groundfish fisheries, in anticipation of eventual groundfish rationalization of some sort in the GOA.

The development or evolution of the Kodiak harvesting fleet has essentially paralleled that of the processors to which they deliver (along with the development of a fleet component that in part or in whole participates in Bering Sea fisheries). The details and dynamics are somewhat complex, but have resulted in a fleet of multi-species, multi-gear boats (although trawlers may be somewhat more specialized, they can also switch gear or work as tenders). This versatility is especially important to harvesters as seasons have become more compressed and competition to harvest the resources has increased, although management restrictions such as license limitations or IFQs have increased the cost and perhaps reduced the possibility for such versatility. Kodiak fishermen greatly value having options and making their own decisions. Thus, both the potential benefits (generally increased stability of access and amount harvested for those who can fish) and the potential costs (increased cost for entry into fisheries and reduced flexibility) of any proposed management alternatives are generally quite clear to them.

Kodiak's economy has become increasingly diversified. The Coast Guard base, although relatively self-sufficient, contributes a great deal to the local economy. Housing has been relatively scarce since the 1980s and new house construction has been constant since that time, both to meet this demand as well as in a response to increased population and more Coast Guard personnel living off-base. The housing market is currently softer than it has been in the collective memory of most Kodiak residents, due to the problems of the fishing industry. The service sector, and especially the retail sector, has continued to grow and has become increasingly important. Fishing support services have been affected by the downturn in the fishing industry. The local timber industry is at a relative low point currently, but has been significant in the past. Education is an important economic and social component, represented by the facilities of Kodiak College and The Fishery Industrial Technology Center. The aerospace industry has the potential, through the rocket launch facility, to contribute to the economy both directly as well as more indirectly through support services and facilities provided to outside specialists who work at the launches.

Population

Table 2.3.3-7 provides sufficient detail to discuss Kodiak's gross population dynamics. The Russian history of Kodiak will not be discussed here. The City of Kodiak did not attain the status of the largest community on the island until about 1920 or so, and has grown steadily since then, although exact rates cannot be derived from Table 3.2-28, as the numbers are inexact. The KIB was formed much later, and numbers for the borough are not available until 1960 when 7,174 people were enumerated. Named places within KIB only totaled 3,320 people however (mostly in the City of Kodiak). Based on present conditions, it can be assumed that most of the difference (whatever its "true" value) represented people living in the area of, but outside of the city limits of, the City of Kodiak (Linda Freed, personal communication 2001). This would account for a good deal of the sudden increase between 1950 and 1960 of the population of the "Greater City of Kodiak" (Table 2.3.3-7).

Table 2.3.3-7. Kodiak Island Region Population 1880-2000

Year	KIB	Greater City of Kodiak[1]	City of Kodiak	Total Hinterland[2]
1880	NA	0	0	694
1890	NA	495	495	1,334
1900	NA	341	341	623
1910	NA	438	438	655
1920	NA	374	374	343
1930	NA	442	442	444
1940	NA	864	864	589
1950	NA	1,710	1,710	567
1960	7,174	6,482	2,628	692
1970	6,357	5,358	3,798	999
1980	9,939	8,842	4,756	1,097
1990	13,309	11,610	6,365	1,699
1999	13,989	12,185	6,893	1,804
2000	13,913	12,211	6,334	1,702

[1] "Greater City of Kodiak" encompasses the City of Kodiak, Kodiak Station, and the derived unincorporated population – see text
[2] "Total Hinterland" is the total population of all named places on Kodiak Island, other than the City of Kodiak and Kodiak Station

The 2000 "unincorporated population" is 4,037 and is generally believed to approximate the population that could be considered part of the "greater City of Kodiak" area but not within its incorporated city limits. This "unincorporated" population is thus equal to about 64 percent of the city's 2000 incorporated population of 6,334. This is a dramatic relative increase, from only 50 percent in 1999, and reflects a slight increase in the "unincorporated" population and a decrease in the City of Kodiak population. An additional 1,840 people live on the Coast Guard base, which most people also consider as part of the "greater City of Kodiak" area. Together these three populations include 12,211 of the KIB's total 2000 population of 13,913, or about 86 percent. Note that this does not include Chiniak or Women's Bay (about 5 percent of the KIB's population) as part of the "Greater City of Kodiak," although it could be argued that they should be. This calculated percentage has varied from 84 to 90 percent since the formation of the KIB. Prior to that time (1880-1950) the City of Kodiak had been increasing in size relative to the other named places on the island (Table 2.3.3-7).

A common dynamic in fish processing towns is that the population increases seasonally, during peak harvest and processing periods. In Kodiak, this has historically occurred in summer (July and August). With the development of groundfish processing, Kodiak processors have increasingly tried to operate year-round with an increasingly resident labor force. The strong national economy has also decreased the number of people willing to come to Kodiak to work seasonally, and the cost of transporting and training such temporary employees has also increased. While such transient workers are still part of Kodiak, they had not been as significant as in the past, due to the development of a more resident processing work force. Recent trends may be for the increased employment of more transient workers. These dynamics are discussed below in terms of the processing and harvesting labor force.

Ethnicity

Kodiak is a complex community in terms of the ethnic composition of its population. Sugpiaqs (Koniags) were the original inhabitants of Kodiak Island. In the late 1700s Russian contact and their sea otter operations had devastating effects on the Native population and culture. Alutiiq is the present-day Native language. Alaska (and Kodiak) became a U.S. Territory in 1867, and a cannery opened on Karluk spit in 1867. This marked the start of the development of commercial fishing on Kodiak, although Karluk remained the largest community on the island until about 1920. Fishing and military buildup associated with WWII brought many non-Natives to Kodiak, primarily Caucasians but also a substantial number of other minorities, at least initially associated primarily with fish processing employment.

Tables 2.3.3-8 and 2.3.3-9 below present some basic time series information on ethnicity. While the information is not all directly comparable due to changing definitions and different sources, certain conclusions are fairly clear. Most Filipino or Asian and Pacific Islanders live in the City of Kodiak. Nearly all can be assumed to live in the immediate area of that city. They are the segment of the KIB population that is most rapidly increasing, from an unknown population in 1970 (but no more than 3 percent) to 6+ percent in 1980 to 11+ percent in 1990 to 17 percent in 2000. This supports the common community perception, and plant manager reports, that fish processing workers are more of a resident work force than in the past. The Alaskan Native population has stayed at approximately the same percentage through time, but is clearly a smaller percentage of the City of Kodiak population than it is of the KIB as a whole. The Caucasian population has declined in terms of percentage over time. Overall, there has thus been a gradual, long-term shift in ethnic composition, with Asian and Pacific Islanders increasing in percentage and Caucasians declining in percentage. Native Americans and African Americans have shown relatively little change. The U.S. Census Bureau also has collected information on people of "Hispanic Origin" and it is potentially useful as an indicator of population dynamics. Plant managers have reported that they are hiring more Hispanics than in the past, and the limited census information available supports the anecdotal information that the Hispanic population is increasing, located primarily in the City of Kodiak (KIB website). This is the same pattern and dynamic described in IAI 1991.

Table 2.3.3-8. Ethnic Composition of Population Kodiak Island Borough; 1970, 1980, 1990 & 2000

Race/Ethnicity	1970		1980		1990		2000	
	N	%	N	%	N	%	N	%
White	NA	-	7,046	71%	9,289	70%	8,304	59.7%
African American	NA	-	72	0%	135	1%	134	1%
Native Amer/Alaskan	NA	-	1,710	17%	1,723	13%	2,028	14.6%
Asian/Pacific Islands*	NA	-	624	6%	1,492	11%	2,342	16.8%
Other**	NA	-	283	3%	670	5%	1,105	8%
Total	6,357	-	9,939	100%	13,309	100%	13,913	100%
Hispanic***	NA	-	204	2%	NA	-	848	6.1%

Source: U.S. Bureau of Census.
* In the 2000 census, this was split into Native Hawaii and Other Pacific Islander (pop 110) and Asian (pop 2,232).
** In the 2000 census, this category was Some Other Race (pop 387) and Two or more races (pop 718).
*** Hispanic' is an ethnic category and may include individuals of any race (and therefore is not included in the total as this would result in double counting).

Table 2.3.3-9. Ethnic Composition of Population Kodiak City; 1970, 1980, 1990 & 2000

Race/Ethnicity	1970		1980		1990		2000	
	N	%	N	%	N	%	N	%
White	3,094	81%	3,337	71%	4,028	63%	2,939	46.4%
African American	44	1%	26	1%	47	1%	44	0.7%
Native Amer/Alaskan	479	13%	573	12%	629	10%	663	10.5%
Asian/Pacific Islands*	NA	-	554	12%	1,282	20%	2,069	32.6%
Other**	116	3%	-	-	379	6%	619	9.8%
Total	3,798	100%	4,686	100%	6,365	100%	6,334	100%
Hispanic***	NA	-	196	4%	NA	-	541	8.5%

Source: U.S. Bureau of Census.
* In the 2000 census, this was split into Native Hawaii and Other Pacific Islander (pop 59) and Asian (pop 2,010)
** In the 2000 census, this category was Some Other Race (pop 276) and Two or more races (pop 343).
***' Hispanic' is an ethnic category and may include individuals of any race (and therefore is not included in the total as this would result in double counting).

Table 2.3.3-10 provides information on group housing and ethnicity for Kodiak. Group housing in the community is largely associated with the processing workforce. As shown, only six percent of the population lived in group housing in 1990. This is a much lower percentage of population in group quarters than in the other communities profiled.

Table 2.3.3-10. Ethnicity and Group Quarters Housing Information, Kodiak, 1990

Kodiak City	Total Population		Group Quarters Population		Non-Group Quarters Population	
	Number	Percent	Number	Percent	Number	Percent
White	4028	63.28	192	53.93	3836	63.84
Black	29	0.46	3	0.84	26	0.43
American Indian, Eskimo, Aleut	811	12.74	21	5.90	790	13.15
Asian or Pacific Islander	1282	20.14	118	33.15	1164	19.37
Other race	197	3.10	22	6.18	175	2.91
Total Population	6365	100.00	356	100.00	6009	100.00
Hispanic origin, any race	407	6.39	42	11.80	365	6.07
Total Minority Pop	*2429*	*38.16*	*181*	*50.84*	*2248*	*37.41*
Total Non-Minority Pop (White Non-Hispanic)	*3936*	*61.84*	*175*	*49.16*	*3761*	*62.59*

Source: Census 1990 STF2

Sex Composition

The KIB is unbalanced in terms of ratios of males to females (Table 2.3.3-11). The City of Kodiak shows a similar imbalance, and has been relatively stable in this regard for the period 1970-2000 (Table 2.3.3-12). This is characteristic of communities where at least one major economic sector disproportionately employs single members of one sex. The fishing industry has historically employed many single males, both as harvesters and processors. Although this population has apparently become more resident (rather than transient) than in the past, evidently this has not greatly affected the overall population's sex composition. Single males are still disproportionately attracted to Kodiak, and females may tend to migrate out more than do males. IAI 1991 indicates that the male/female ratio for the Native population was approximately equal, as would be expected from a resident population. The sex ratio for Caucasians was somewhat skewed (54/46), and for Filipinos was even more skewed. This was interpreted as evidence for a relatively resident Native population, with a predominately resident Caucasian population somewhat more prone to movement in and out, and a much more mobile "other minority" population which contained a smaller percentage of family units with children. This interpretation seems to continue to apply.

Table 2.3.3-11. Population by Sex, Kodiak Island Borough; 1990

	1990	
	N	%
Male	7,395	56%
Female	5,914	44%
Total	13,309	100%

Table 2.3.3-12. Population by Sex, Kodiak City; 1970, 1980, and 1990

	1970		1980		1990	
	N	%	N	%	N	%
Male	2,055	54%	2,498	53%	3,496	55%
Female	1,743	46%	2,188	47%	2,869	45%
Total	3,798	100%	4,686	100%	6,363	100%

Housing Types and Population Segments

Household type in Kodiak varies by population segment, although information is far from systematic in this regard. In the 1980s housing was in very short supply, and it was not unusual for complete strangers to be more than willing to share space in a marginal housing unit. Sales of houses and the rental of apartments was almost totally through word of mouth and almost instantaneous. This has changed to the point where houses are now on the market for a period of time more typical of other Alaskan urban communities before selling, although apartment vacancy rates are still lower than are private housing vacancies. Average rent for apartments is higher or equal to rent in other Alaskan urban communities, although the vacancy rate for units is higher than in places such as Anchorage, Juneau, and the Matanuska-Susitna Borough (AHFC 2001). Construction of new housing to meet the local demand has continued through the present, although it may have slowed somewhat in the recent past, and contractors are building few or no new houses on speculation. There are incentives which have encouraged the building of new housing outside of Kodiak city limits. The state will subsidize the mortgage rate one full percentage point for housing outside of the City of Kodiak. Further, undeveloped land within the current city limits is somewhat scarce.

It is recognized that fish processors tend to live in smaller structures and/or with more household members, than do people with other employment. There are sections of town or developments where certain ethnic groups or socioeconomic classes of people are concentrated. However, there are also members of these same groups scattered throughout Kodiak.

One housing dynamic that had been operating until the recent past, already mentioned above, has been that of the development of a resident processing force. Kodiak processors had been able to close down bunk houses as those attracted to Kodiak by fairly steady processing work preferred more private housing in the community. With the more recent contraction of fishing seasons and processor operating days, the processing labor force has once again become somewhat transient. Processors report that they can maintain only a smaller “core” group of employees than has been the case in the past, and several have reopened or even constructed bunkhouses of sufficient size to handle their transient peak labor needs. There are still local people who work in the processing plants on a less than full-time basis, but the pay scale associated with most processing work requires a large number of hours to support a local resident. Other than for peak processing periods most labor is still local and has some sort of local housing arrangement. Systematic information is lacking, but anecdotally the same mechanism by which people are recruited to Kodiak to work in fish processing also allows them to find a place to live. Many such workers come because they have a relative or friend who is already working in Kodiak. This person then becomes a resource to locate housing. This is also one reason that household size and household structure tends to be different for different ethnic groups in Kodiak, and is especially fluid for fish processor workers.

The Coast Guard base also affects the local housing supply in that it is "home" to close to 2,000 people. The base is reported to have been built in the 1930s as a temporary facility, and so had a large supply of substandard housing. Much of this has since been dismantled, with a substantial but not equivalent amount of new and better housing being erected on-base. Most Coast Guard personnel have the option of living off-base if they prefer, so this has increased the local demand for housing.

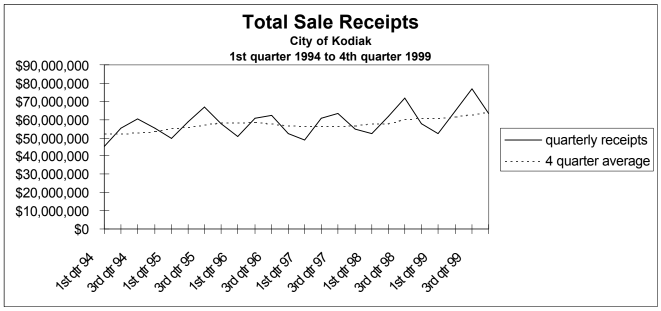
Seasonality of the Kodiak Economy

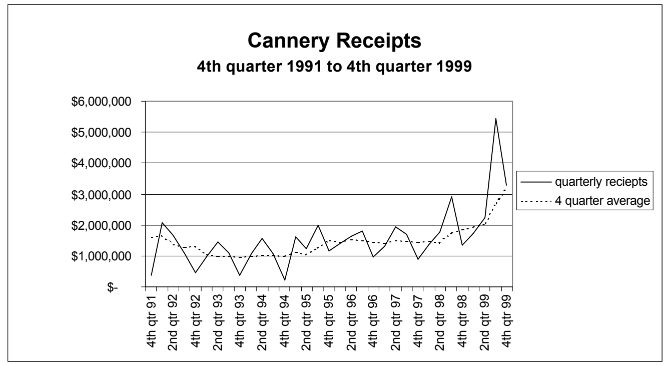
The regular and cyclical annual variation endemic to the Kodiak Island region's fishing economy was introduced in the general regional employment discussion above. This section merely wishes to reinforce this point, using the City of Kodiak as a focused example. The Kodiak Chamber of Commerce has provided city sales tax receipt information for the first quarter of 1994 through the fourth quarter of 1999 (Figure 2.3.3-1). Graphs of tax receipts over this period, by quarter, are presented for total sales receipts and selected economic sectors. The comparison of these graphs is the basis for the following brief discussion.

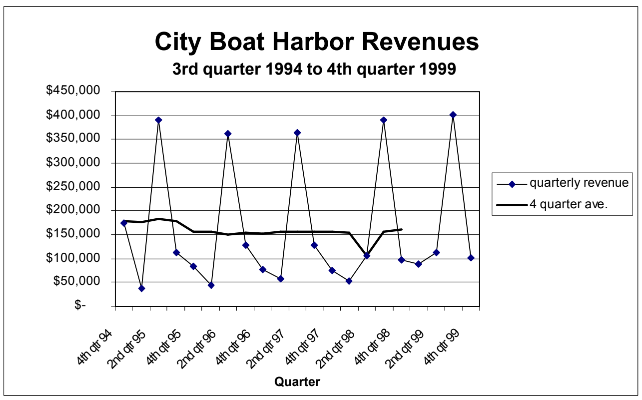
Total sales tax receipts are variable in a regular, cyclical way – but within a relatively well-defined range (the high point is generally no more than 1.5 times the low point, although that range seems to be increasing through time). Cannery receipts can be seen to vary in the same way as do total sales receipts, but the fluctuation between high and low points is much more extreme (the high point is over two times the low point). City boat harbor revenues are even more extreme, but this is an artificial variation, as most long-term moorage fees and such are billed and paid on an annual basis. On the other hand, charter boat revenues are perhaps the most extreme case of true extreme seasonal variation in economic activity, from zero in the winter to a peak in the summer. As this industry also depends on fish (primarily salmon and halibut), it has the same seasonal variation pattern as does the commercial processing sector. Retail sales, on the other hand, while showing some seasonal variation in response to the variation in many of primary economic sectors, exhibits a much narrower range of variation than does total sale receipts. This is what would be expected, as a certain level of sales has to be maintained year-round to support the resident population. Sales would increase during peaks of economic activity, in proportion to the size of the peak in relation to the "base" level of sales. The city utilities graph is especially telling in this regard. The variation is less cyclical, but does exhibit some seasonality confounded by an overall trend towards increased revenues (increased use of utilities). This is an indicator that Kodiak has been experiencing consistent growth, both in population, housing supply, and general infrastructure. The last graph can be no more than suggestive, but the decline in revenues for artists and photographers may suggest that there is less discretionary income in the community, or that such expenditures for luxury or specialty items are increasingly being spent outside of the region.

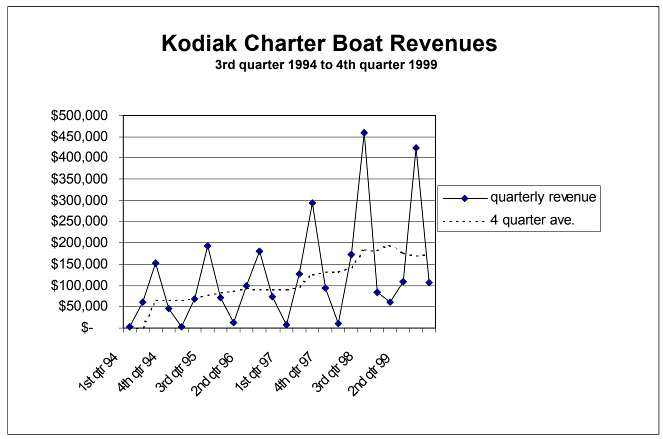
Information through the fourth quarter of 2000 is now available, but the chart has not been updated as the pattern is essentially the same (Kodiak Chamber of Commerce 2001). As for Sand Point, this pattern may mask some of the indications of a local economic downturn by reporting only through June of 2000. Also, Kodiak has a more robust and diversified economy than does Sand Point, and sales tax receipts are an overall economic indicator, and do not necessarily reflect the contraction of one economic sector which is countered by the expansion of another. While both Kodiak and Sand Point are the regional centers for government for their respective regions, that of Kodiak is much larger. Kodiak also has a much larger school system as well as a branch of the University of Alaska system.

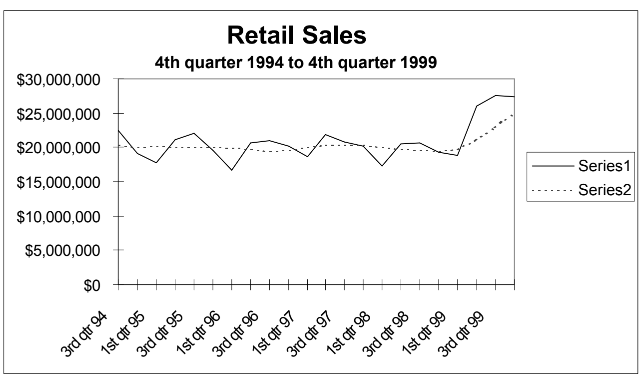
Figure 2.3.3-1. Kodiak Seasonal Economic Fluctuations

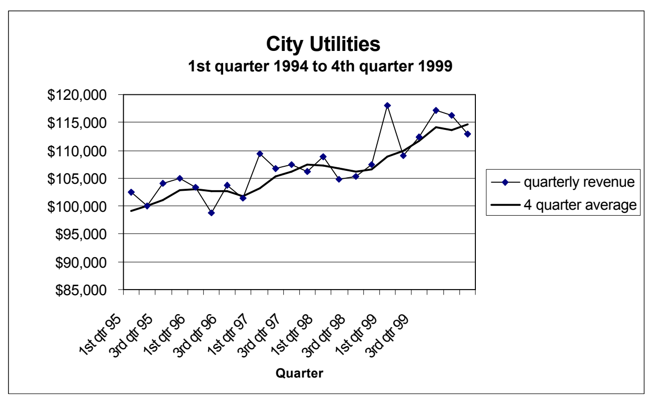


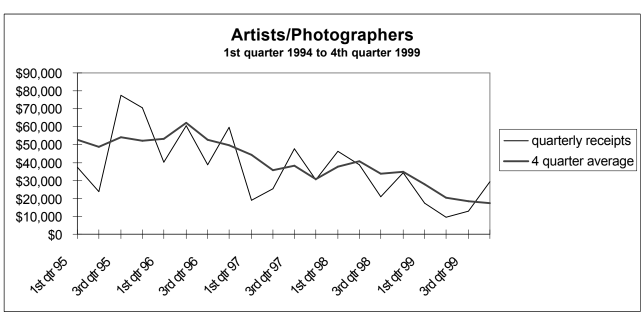












Still, excluding the U.S. Coast Guard, 5 of the top 6 employers in Kodiak in 1996 were fish processors, and one more was listed in the top 20 employers (Table 2.3.3-13). Notably absent from the list is the K-Mart, which opened in 1999 and that should no doubt also be present on the list. It is likely that seafood companies would still predominate on a list of the top 20 Kodiak employers in 2000, although their totals would be lower and they would probably fall to lower positions on the list.

Table 2.3.3-13. Top 20 Kodiak Employers, 1996

Rank	Employer	Avg. Monthly Employment
1	Ocean Beauty Seafoods, Inc.	451
2	Kodiak Island Borough School District	376
3	Tyson Seafood Group, Inc	365
4	International Seafoods of Alaska, Inc	244
5	Cook Inlet Processing, Inc.	247
6	Alaska Pacific Seafoods ,Inc.	179
7	City of Kodiak	169
8	Safeway Inc.	153
9	Providence Kodiak Island Medical Center	134
10	Western Alaska Fisheries	100
11	Ben A. Thomas Inc. (logging)	87
12	Kodiak Area Native Association	76
13	Alaska Commercial Company	76
14	Alaska Department of Fish & Game	74
15	Kodiak Island Borough	71
16	University of Alaska Anchorage	70
17	U.S. Department of Transportation	70
18	Silver Bay Logging, Inc.	61
19	AK MAC Inc. (McDonald's)	49
20	Buskin River Inn	41

Source: Kodiak Chamber of Commerce website

Links to the Groundfish Fishery

The development of commercial fishing in Kodiak was summarized above. Table 2.3.3-14 below displays the total volume of fish landed at Kodiak for 1984 through 1999. Kodiak has consistently ranked in the top three U.S. ports in terms of value of fish landings and in the top seven in terms of volume of landings.

Table 2.3.3-14. Volume and Value of Fish Landed at Kodiak, 1984-1999

Year	Pounds (millions)	U.S. Ranking	Value (millions)	U.S. Ranking
1984	69.9	7	113.6	2
1985	65.8	6	96.1	3
1986	141.2	7	89.8	3
1987	204.1	3	132.1	2
1988	304.6	3	166.3	1
1989	213.2	6	100.2	3
1990	272.5	3	101.7	3
1991	287.3	4	96.9	3
1992	274.0	3	90.0	3
1993	374.2	2	81.5	3
1994	307.7	2	107.6	2
1995	362.4	2	105.4	2
1996	202.7	5	82.3	3
1997	267.5	6	88.6	3
1998	357.6	5	78.7	3
1999	331.6	6	100.8	3

Source: NMFS, past years posted on KIB website

Table 2.3.3-15 lists detailed information on total fish landings for Kodiak for 1997 by species or general category. The three most important groupings for our purpose are salmon, halibut, and groundfish. In terms of volume landed, these categories account for about 22, 4, and 65-70 percent of the total, respectively. In terms of value, the respective percentages are about 23, 25, and 32-35. Thus, groundfish are the largest component of the fishery by volume, as well as a significant component in terms of value. Pollock are the highest volume groundfish, but the cod harvest has the highest groundfish ex-vessel value. Flatfish and sole comprise a third component of the groundfish complex, lower in volume and value but also important for harvesting and processing operations. Rockfish are a fourth component. Sablefish and herring were also significant components of 1997 landings.

Table 2.3.3-15. Fish Landed at the Port of Kodiak, 1997

Species	Pounds (thousands)	% of Total Pounds	Ex-vessel Value	% of Total Value
Bering Sea Crab	509,389	0.2	$1,781,948	2.1
Dungeness Crab	650,248	0.2	1,316,106	1.6
Scallops	398,152	0.1	2,600,000	3.1
Sea Cucumbers	130,915	0.0	151,861	0.2
Miscellaneous	18,641	0.0	19,691	0.0
Octopus	218,327	0.1	124,614	0.2
Halibut	11,039,896	4.1	20,975,802	25.3
Pacific Cod	73,139,944	27.4	15,546,138	18.8
Sablefish	3,887,386	1.5	8,014,256	9.7
Pollock	83,331,663	31.2	8,139,083	9.8
Flatfish	16,636,317	6.2	2,947,214	3.6
Flathead Sole	2,519,706	0.9	352,591	0.4
Pacific Ocean Perch	4,833,278	1.8	242,446	0.3
Rockfish	2,997,638	1.1	390,720	0.5
Rex Sole	666,202	0.2	153,253	0.2
Black Rockfish	174,389	0.1	59,114	0.1
Salmon	57,828,811	21.7	18,798,037	22.7
Herring	7,982,000	3.0	1,273,000	1.5
Total	266,962,938	100.0	82,885,874	100.0

Source: KIB Website

The following discussion of the fishing industry is divided into the harvesting and processing sectors, as each is extremely important for the Kodiak economy and community. A third section provides some general contextual information on fishery industry support services.

Harvesting

The enumeration and geographic distribution of the groundfish catcher vessel sector is detailed in previous documents and abstracted for communities of interest for this document. The most important point in regard to the Kodiak component of this fleet is that most are multi-gear and multi-species boats. The majority of boats harvesting groundfish and crab for deliveries to Kodiak shore processors are Kodiak-based boats. Non-local boats from Newport or Seattle augment the trawl and longline fleets. One recent development, with the shift of GOA pollock quota from areas 610 and 620 to the Shelikof Area has been the temporary transfer of some boats from the Trident plant in Sand Point to the Trident plant in Kodiak.

Vessels in this fleet usually have a handshake agreement with a shore processor for the delivery of fish. The vessel is said to "work for" the shore plant and sometimes the plant operators refer to "their boats" meaning those with which working relationships exist. These vessels deliver to that plant on a regular basis. The size and composition of processor fleets vary, depending on the plant's capacity and product mix. Most of the boats that deliver to Kodiak processors are multi-purpose vessels that can change fisheries to meet the current market and fishing circumstances. For example, some vessels will switch between crab, halibut, and cod or crab, halibut, and pollock. One vessel reported that he fished for in excess of 20 species with three different types of gear. The size of a processor's fleet depends on what season it is and what they are targeting at the time. It is not uncommon, however, for a plant to have a fleet of 8 to 16 boats fishing groundfish and crab. If a plant processes pollock, they usually have a fleet of 4 to 10 trawlers, and more often 8 to 10. Most plants also have 6 to 10 fixed-gear vessels in their fleet. Most of the fixed gear boats are pot boats fishing for Pacific cod and/or tanner crab. There is a small fleet which fishes for Dungeness crab as well.

Fleet sizes are smaller now than they were when shellfish was a larger part of production. Prior to the implementation of the AFA in the Bering Sea, we were told that the GOA pollock (and flatfish) fleet tended to cooperate in an effort to balance deliveries to maintain high levels of production. This was a somewhat unique relationship to develop in an open access fishery, but was a form of industry-developed "rationalization" to counter some of the inherent inefficiencies of a high volume/low value fishery with excess capacity. Ideally, the plants want just the right amount of boats to keep production lines busy all of the time, but with a trawl fleet's capacity to catch groundfish, its harvest can easily exceed its processor's capacity. After the implementation of AFA in the Bering Sea, Kodiak processors have reported that this arrangement is, in essence, no longer in effect. With the anticipation of eventual pollock (and other groundfish) rationalization in the GOA, a "race for history" in the GOA has resulted, with at least one new processing entrant and a host of wasteful and inefficient practices (see processing discussion below).

The exchange of product between fishermen and processors continues to be largely dependant upon what kind of relationship the boat operator has with the plant. According to one plant staffer, when a fisherman comes to talk to a processor, he has several main concerns. He wants to know how he's going to get in to make deliveries and if he is going to be able to deliver all the fish that he can catch. He does not want to have to wait to deliver fish because the processor has too many other boats delivering as well.

A reliance on flexibility and adaptability in the fishing industry has caused boats to become very good at converting from one gear type to another, if they have the gear available. In the mid-1980s this did not happen frequently, but it is easier and more common now (subject to license limitation and other management measures). While boats may switch from one gear-type to another, operators usually deliver to the same processor. If a new operator comes aboard, the vessel may or may not change delivery sites, depending on the established relationships of the vessel owner/operator to processor.

Within the trawl fleet, there are conversions too. There is a switch in nets for midwater or pelagic trawling to bottom trawling when going from pollock to cod. Almost everybody who trawls has both types of nets. Medium-sized and the small trawlers (usually those less than 70 feet in length) will make a conversion as soon as tanner season is closed, but the bigger Kodiak trawlers, those in the 80-120-foot range, will usually leave their trawl gear on and not make any conversions, unless they are going tendering for salmon or herring. It wasn't that long ago that they could trawl the better part of the year, so a number of them sold their pots and abandoned the fixed-gear fishery. Also, The Kodiak area tanner quota has been so small in recent years that the bigger boats can't justify going out.

Generally speaking, fishermen stay with one company although there is no formal (written) contract to bind this relationship. Boats will usually try to set up some sort of a market before they leave the dock, although that depends, somewhat, on who's operating the boat and what kind of relationship he has with the plant. Often a plant will help find a market for a load it cannot use from one of its “regular” boats, especially for a high volume/low value species like pollock, or one that requires more time to process, such as flatfish.

Shore plants also provide certain services as inducement to do business. In general, the production capacity in Kodiak to process fish far exceeds the amount of product currently available, so all the processors in town are in competition with each other for available product. As a result, things like being able to provide a tendering contract serve as incentives for fishermen to do business with a certain plant. Providing gear storage for fishermen is an incentive. Providing a line of credit – if a fisherman's short on funds and needs to buy gear or equipment – is another inducement the local processors sometimes offer to a fisherman.

For some vessel operators, these tendering contracts are not only lucrative, but they become an important part of the total yearly income for vessels. Consequently, maintaining the handshake agreement to deliver groundfish when the processors need it most can be rewarded with a tendering contract that is important to the fishermen.

Table 2.3.3-6 above displays just how overwhelmingly GOA-oriented is most of the Kodiak CV fleet. While Kodiak CVs have more of a presence in the BSAI pollock fishery than for the other species (in terms of pounds harvested and dollars earned), the GOA is still clearly where most Kodiak boats fish. It is this orientation, and their position as harvesters of the GOA, that Kodiak fishermen wish to protect, and which they fear may be adversely affected by the AFA in a number of ways.

One of the two effects most commonly attributed to AFA by Kodiak fishermen was the allocation of fishing rights with a determinable value to a protected class of vessels in the BSAI, the owners of which could then collateralize that asset to increase their activities in the GOA. Further, the claim is made that the AFA established conditions such that these boats are no longer under the severe time constraints of the race for fish in the BSAI, and so can modify their schedules to accommodate both BSAI and GOA fishing. These fishermen acknowledge that the AFA-sideboards do limit such activity (and, indeed, have appeared to limited such activity to date consistent with the intent of the sideboards), but they are concerned that some boats, and especially the AFA-exempt boats, have received a competitive advantage vis-a-vis most of the Kodiak fleet. One example was cited, by a processor, of a non-local AFA-exempt boat owner who had used his AFA-fishing rights to secure a loan to increase the fishing capacity of his vessel, so that he could catch his BSAI allocation quicker, and have more time to devote to the open access GOA pollock (and other) fisheries. This would also allow him to increase his catch history in anticipation of eventual rationalization in the GOA. Given the demand for product by the competing plants in Kodiak, it is not likely that this vessel owner will not be able to find a market for his increase GOA harvest, which will reduce that caught and delivered by the Kodiak fleet. The magnitude of the effects of such actions is unknown, however, as the number of people and boats involved is difficult to determine, but would appear to be small to date. While the numbers may be relatively small, however, the effects on at least parts of the Kodiak fleet could be relatively large, which would translate into community (resident) effects. It should be noted that the case cited is an example of where a rationalization measure taken to reduce overcapitalization in the BSAI has apparently resulted in increased capitalization in the GOA, which is still open access.

The second common effect generally attributed to AFA was the fostering of speculative "race for history" for species that may be rationalized in the future. This has reportedly led to behaviors where individuals prepare for rationalization by optimizing their history through speculative pursuits or by undertaking what are uneconomic strategies in the short term. In public testimony before the NPFMC in June, 2001, one Kodiak fisherman expressed this point as follows:

> As an example, I'd say, probably 75 percent of the effort in our last Kodiak Tanner crab fishery was speculative effort, we had a one day season in one area, a 3 or 4 day season in another area, a huge effort. There were some boats [that] had as many as 4 permit holders on one boat, it was kind of ridiculous, probably most people didn't [even] cover their insurance costs . . . this is the mind set we [have] created [with AFA and other uneven rationalization]. . . it changed the definition of rationalization, what rationalization means now is maximizing your windfall. It isn't about changing your fishery, making the best fishery you can think of, [rather, it is about] how we can put the most money in our pockets right now . . . we had some trawlers out there last pollock season, tangling the [trawl] doors, and these guys are running into each other. They wouldn't do that . . . if it wasn't for this race for history. I had a buddy, a little while ago here [in Kodiak] he was getting 600 pounds for the skate of halibut fishing and he had a guy tow off one end of his gear. The guy told him . . . he wouldn't be in that zone if he wasn't in a hurry, [but in the] pollock season everyone fishes as close to town as they [can] because they knew [the opportunity] was going to go fast. [If it wasn't for the race for history] they would be spread out, [but] people are doing all kinds of crazy things, and it is just sort of the framework they have been put in.

Kodiak fishermen, and especially the “small boat” fishermen, are quite concerned over the formation of a “closed class” of groundfish processors, as they believe that this could affect the price negotiations for all species of fish. That is, they feel that the formation of a closed class of processors for selected species of fish will make it very difficult for any new (or non-member of the class) processing entity to compete in any markets. They feel that members of the closed class will have an ability offer somewhat lower prices than would otherwise be the case, since they have some form of vested interest in the closed-class species. This is a somewhat of a speculative and theoretical argument, but one with some intrinsic plausibility. The magnitude of the potential effect cannot be assessed here.

There is also the observation that after rights in a specific fishery are vested, monitarized, and readily transferable that they tend to become non-local. Several fishermen and processors noted that the ownership group for the cod catcher-processors “from” Kodiak had for the most part relocated elsewhere. Vessels associated with this company still operate from Kodiak, but are in some sense no longer as much of a “local” operation. This may reflect a fear that eventual rationalization of GOA fisheries will result in a greater degree of participation of outside capital and fishermen, accompanied by a possible weakening of the local fishing economy and identity.

Processing

In early 2000, there were six or seven (one was very new to Kodiak and was not available to provide information) plants processing groundfish in Kodiak. Interviews conducted in 2001 confirmed that seven plants processed groundfish, and that the new entrant was actively competing for all species. Other non-groundfish processors also exist. While capable of continuously processing large volumes, actual production, of course, varies during the year. Plants will add a shift, hire additional employees, and maximize processing and freezing capabilities during various seasons and season overlaps; various species require separate processing lines, machinery, and crews. At other times, especially during the later months of the year, the plants have little, if anything, to process, so they must layoff employees and attempt to minimize their overhead costs. Tables 2.3.3-16 and 2.3.3-17 show the aggregated volume and value, respectively, of the species processed in Kodiak by year for the period 1993-2000. With the exception of salmon, which is processed at several different locations within the KIB, nearly all of this activity takes place within the City of Kodiak.

Table 2.3.3-16. Volume of Groundfish Processed by Kodiak Shoreplants, by Species Group and Year, 1993-2000

Species	1993	1994	1995	1996	1997	1998	1999	2000
Salmon	105,954,109	42,512,087	150,212,021	38,480,944	47,096,755	85,182,682	63,097,929	60,096,447
Halibut	9,886,361	8,959,621	7,345,008	7,396,190	10,673,472	8,398,551	8,269,475	See Note
Crab	5,110,307	2,863,187	1,832,762	1,675,086	1,164,703	1,148,083	1,284,728	2,504,560
Herring	8,886,771	5,845,320	4,998,580	5,868,669	5,336,494	2,482,571	1,985,822	2,080,860
Other Non-GF	106,458	384,948	168,940	206,174	175,448	181,668	137,575	116,912
Pollock	155,412,622	163,440,241	65,393,556	45,996,042	83,781,584	164,936,160	129,788,161	106,386,467
Other GF	75,932,965	57,408,356	92,397,635	90,887,954	113,031,829	105,863,668	112,819,856	114,519,388
Total	361,289,593	281,413,760	322,348,502	190,511,059	261,260,285	368,193,383	317,383,546	285,704,634

Note: Halibut numbers not available for 2000
Source: State of Alaska Fish Ticket information supplied by NPFMC staff

Table 2.3.3-17. Value of Groundfish Processed by Kodiak Shoreplants, by Species Group and Year, 1993-2000

Species	1993	1994	1995	1996	1997	1998	1999	2000
Salmon	$30,919,937	$19,837,476	$41,353,791	$21,319,667	$16,552,661	$26,327,348	$28,587,045	$18,448,920
Halibut	$11,705,472	$16,874,425	$14,228,126	$16,144,982	$22,115,588	$10,254,625	$17,374,278	See Note
Crab	$8,840,233	$7,149,258	$4,124,565	$3,463,420	$2,775,965	$1,704,518	$4,414,024	$7,026,046
Herring	$2,583,290	$1,614,485	$2,815,598	$4,595,484	$941,584	$517,132	$608,933	$566,940
Other Non-GF	$83,036	$415,673	$143,154	$246,052	$193,067	$190,220	$146,081	$174,606
Pollock	$11,501,119	$12,625,509	$6,670,763	$4,369,377	$8,625,741	$11,190,308	$12,311,467	$12,255,024
Other GF	$18,421,120	$17,180,178	$25,630,081	$24,708,464	$28,861,917	$21,660,833	$32,556,598	$28,857,786
Total	$84,054,207	$75,697,004	$94,966,078	$74,847,446	$80,066,523	$71,844,984	$95,998,426	$67,329,322

Note: Halibut Numbers are not available for 2000.
Source: State of Alaska Fish Ticket information supplied by NPFMC staff.

In the words of one long-time Kodiak fisherman, "Our key is to be able to diversify, but it is still tough to make it." This ability to diversify has become paramount to both the fishermen and the processors of Kodiak. Shore-based plants have added crews, space, freezers, equipment, and searched for new markets as fishermen have been seeking, entering, and participating in pulse fisheries that feature wildly variable deliveries. Occasionally when open fisheries are exploited by new entrants, new products emerge. While this includes previously unexploited resources such as sea cucumbers or snails, it also includes variations of existing resources. Pacific cod harvested in pot gear is such an example.

Processors differ in the degree to which they actually do diversify their operations, but all those plants which process groundfish agree that it is essential for their plants. It is the highest volume component and provides essential employment for their work crews. Without groundfish these plants could not provide enough work to support their crews as Kodiak residents. Several plant managers made the same point about the other species they processed as well, although groundfish was perhaps considered a fundamental base of operations (up to 80 percent of most operations). Similarly, most processors consider their plant as only one component of an integrated system that requires a healthy harvesting sector, a stable and reliable processing labor force and an efficient plant, and capable management and adequate financial backing.

The general sector description contained in IAI 1994 is still generally valid, with a few caveats. Less halibut is delivered and processed in Kodiak than in previous years, as one result of the IFQ system has been to reduce the processors margin on halibut to very little. Harvesters can receive a higher price in Homer or Seward than in Kodiak, and both of those ports receive more halibut than does Kodiak. Most processors are also very uncertain as to how they will meet their future labor requirements. At present most retain a “core” crew of Kodiak residents, which they supplement as necessary with additional resident labor, and transient labor housed in a bunkhouse for peak demand periods. Processors seldom wish to bring labor in for any period shorter than the summer, due to the need to train and house such labor, but at least one plant was forced to do so the last couple of years. They constructed a forty-person bunkhouse to accommodate them. Other plants that are part of companies with several processing facilities will transfer labor from one to another as labor needs change in the various locations. Labor costs are reported to have increased, due to the strong national economy as well as the increase in locally available entry-level jobs in the retail and service sectors. Plant managers also report that many fewer college students approach them (either remotely or by simply appearing in Kodiak) than in years past.

While a good part of these dynamics can be attributed to factors such as generally low fish prices, fluctuations in fish stocks, and general overcapacity, the implementation of the AFA in the Bering Sea was also cited as a contributing factor in at least several different ways. Most of the established groundfish processors attributed the interest of the new seventh groundfish processor directly to the AFA. This processor reportedly wanted to operate in the Bering Sea, but was precluded from doing so by the AFA. Kodiak was the only available opportunity to enter into groundfish processing, and this plant (and at least one of the other “more established” plants) has reportedly been very aggressive in buying groundfish, salmon, and other product – to the extent that some competitors have claimed that they buy fish at non-economic prices and take delivery of fish which are too small to effectively process. They reportedly will send their fleet out to fish on pollock with poor roe quality (when other plants restrain themselves from doing so), in order to harvest a larger share of the quota. The motivation attributed to such allegedly non-economic behavior is that they wish to establish as large a GOA pollock processing history as possible prior to an eventual rationalization of the GOA pollock fishery. Even if other processors do not choose to emulate these practices, they are adversely affected in the short-term by not having “their share” of pollock to process, and in the long-term if GOA pollock is rationalized based on the historical catch which includes such practices. Such practices, if they occur, are also clearly detrimental to conservation and wise use of the resource.

Similar to the case seen with Kodiak based catcher vessels, there is also strategic positioning behaviors among processors to build a history of pursuing a variety of species in anticipation of AFA-like rationalization of those fisheries, and while some of this type of activity preceded AFA, at least a portion of this behavior is reportedly in response to the AFA itself. This has led to tensions between harvest and processing sectors. One Kodiak fisherman in testimony before the NPFMC stated:

> Just for some other examples of what the race for history is, a couple of years ago I attempted to sell halibut to processors that bought all my fish the year before. I was told [they] can't do it, [they said] 'we are too busy doing flatfish,' and that same processor turns around and says now they have been injured by IFQs. But what they are doing – they are not concerned about the halibut – they [are] concerned about maximizing their processing history . . .

Another aspect of the AFA affecting Kodiak processors, and which adds credence to the need for some form of eventual pollock fishery rationalization in the GOA, is the recognized benefits that the AFA has bestowed on BSAI processors, in terms of increased recovery rates and increased quality. GOA groundfish processors, for the most part, produce the same sorts of products and compete in the same markets, and have found themselves to be at a competitive disadvantage to the BSAI AFA-qualified processors. While none could demonstrate this effect in terms of hard numbers, almost all mentioned it as one of their first points during our interviews, and it is a logically compelling argument. Processors commonly cited the pre-AFA advantage that they perceived themselves as holding in the fillet market, which yielded them higher prices and returns, since the sheer volume of the pre-AFA BSAI open access fishery required that a large volume of that fishery be made into surimi, because of time constraints. Because of the relaxation of the race for fish, the AFA has enabled BSAI processors to modify their product mix to take advantage of different market prices available for different products, one of the effects of which is claimed to have been the negation of any market advantages that GOA processors may have had prior to the implementation of the AFA. This would certainly have adverse effects on the communities within which GOA groundfish processors are located.

Perhaps as a sidebar to this competitive issue, GOA processors with no AFA connections speculate that those companies with both an AFA-qualified entity and a GOA (or indeed, any other fishery) presence will be able to use the AFA “allocation” to finance or leverage expansion in the GOA (or some other fishery). This is the processor parallel of the fear of GOA CVs of AFA-qualified boats expanding their operations in the GOA. Little documentation for this point was offered or claimed to be available, other than allegations of “non-economic” prices and price adjustments made in various non-groundfish fisheries by certain AFA-qualified processors. The likelihood of this effect cannot at this time be assessed, but it would seem to be possible, and could have ramifications for the communities such as Kodiak that are the location of non-AFA processors.

Processors are realistic in their assessment that the AFA is not likely to go away, and that given the disadvantages the open access system in the GOA imposes on them, that some form of rationalization in the GOA is required and inevitable. The alternative is a GOA fishery potentially owned by BSAI fishing entities and wasteful and inefficient practices. Processors are also adamant that any rationalization plan would need to include some form of processor quota share, although there is no agreement on whether AFA-like co-ops would be sufficient, or whether full processor shares equivalent to harvesting shares would be necessary. Processors all cite the example of halibut IFQs, which essentially resulted in the individual processor's margin being so reduced, and the incentive for fishermen to deliver non-locally to be so great, that most halibut is now delivered elsewhere.

Support Services

The full spectrum of services for the fishing industry is present in Kodiak, as described in detail in IAI 1991. Support services include a wide range of companies, including such diverse services as accounting and bookkeeping, banking, construction and engineering, diesel sales and service, electrical and electronics services, freight forwarding, hydraulic services, logistical support, marine pilots/tugs, maritime agencies, ship repair facilities (recently enlarged), stevedoring and shipping, and vehicle rentals, among others. There is no other community in the area with this type of development and capacity to support the GOA (and some Bering Sea) fisheries.

The Port of Kodiak is home to Alaska's largest and most diverse fishing fleet. It has more than 600 boat slips and 3 commercial piers that can handle vessels up to 650 feet long. Kodiak is also a vital link in the regional transportation network. As the hub of the Gulf of Alaska container logistics system, Kodiak serves Southwestern Alaska communities with consumer goods and provides outbound access to world fish markets. LASH Marine Terminal, in Women's Bay, provides service to several freight carriers, freight forwarders and consolidators, construction contractors, and Kodiak's diverse fishing fleet. Regularly scheduled container ships operate between Kodiak and the Pacific Northwest, and between Kodiak and the Far East. Kodiak is a key link for Alaskan Coastal communities.

It was not possible in our limited time to collect any systematic information on how support services have been affected by AFA, or changes in the local economy in general. However, as for other communities, certain less systematic indicators are available. The loss of population in the City of Kodiak relative to outlying regions may reflect a weakening economy. Interviews with such primary fisheries support services such as the boat yard and the hydraulics shops indicated that fishermen were deferring more regular maintenance, and even canceling upgrades that had been scheduled in the past but which now, in the light of adverse fishing conditions, do not appear to be prudent investments. Several such jobs were said to have been canceled the day after the Steller sea lion RPAs were announced. These operations also note that the number of their uncollected bills has increased.

Thus, it does not appear that the AFA has so far had a major effect in this area. While the AFA may have affected the competitive position of the processing plants, and the operations of some percentage of the local groundfish fleet, it is probable that such effects are swamped by the more immediate effects of local Steller sea lion measures and low prices for salmon and other species. It is estimated that at least 50 percent of local salmon permits are not fished, due to low prices. Given more time, and further adaptation to the system, however, AFA-related effects may become more pronounced.

2.3.4 Southcentral Alaska Region

2.3.4.1 Regional Characterization

Overview. In AKSC, participation in the groundfish fishery varies considerably from other Alaska regions, and the region is little involved with the Bering Sea pollock fishery specifically. Ninety-eight percent of groundfish processed in Alaska is processed in regions other than AKSC. While accounting for less than 1 percent of the pollock, 2 percent of the flatfish, and 5 percent of the Pacific cod processed inshore in Alaska regions over the period 1991-1998, AKSC did account for 23 percent of the ARSO species group. The region is also different by virtue of its connection of communities and ports by a road system. Homer and Seward serve as the primary ports for groundfish trucked on the Alaska road system. During 1991-1999, groundfish were processed in 11 regional communities, with Cordova, Nikiski and Seward accounting for the majority of processing.

Population. At 363,450 persons, AKSC is the largest of the four Alaska regions, and it includes Anchorage (population 260,000), as well as small rural communities. Many fishing enterprises and organizations as well as government agencies have offices in Anchorage, and the community is the home of the North Pacific Fishery Management Council (NPFMC). AKSC groundfish communities tend to be largely non-Native. The high male-to-female ratio often present in small to moderate-sized communities with relatively large processing capacity (such as AKAPAI communities) is not present in this region. This circumstance reflects both a smaller scale of processing operations and a more resident workforce.

Employment and Income. The economies of AKSC groundfish communities tend to be more diversified than those of AKAPAI or AKKO. In part, this greater diversification is a function of road-connectedness and associated access to a large population base, as well as the presence of other developable resources. Groundfish are of lesser importance for employment and income to the region in absolute and relative terms than for either AKAPAI or AKKO. In comparison with the manufacturing sector, in 1997 8 sectors had greater employment and 10 sectors had greater income (the service sector alone had 10 times the number of jobs and 8 times the income of manufacturing).

Tax and Revenue. None of the AKSC groundfish processing communities has a local or borough fish tax. At $1,521,569 in fiscal year 1999, 73.3 percent of the region's shared taxes and fees were fisheries-related. This is a higher amount than the Kodiak region received (although derived to a lesser extent from groundfish).

Inshore Processing. The groundfish processed in AKSC account for only two percent of the groundfish processed inshore in all Alaska regions. The ARSO species group accounted for 43 percent of the volume reported over the period 1991-1998, and Pacific cod, pollock, and flatfish accounted for 35, 17, and 5 percent of the total, respectively. Pollock landings were highly variable. The value per metric ton (more than $2,400 in 1999) for AKSC was by far the highest among Alaska regions (four times higher than in AKAPAI). The total product value, $26 million, is the lowest among the Alaska regions, about nine times lower than in AKAPAI and about two-thirds of the value in the next lowest region. The differences between the regions can be accounted for by dependence on relatively high-value, low-volume groundfish species. Furthermore, the ARSO species group varies internally among regions, with Atka mackerel (lower value) concentrated to the west, and rockfish (higher value) becoming more important to the east. Processing is also different in the aggregate, as shown by the much higher utilization rates in AKSC (more than 60 percent in 1999) compared to AKAPAI and AKKO (35.1 and 27.3 percent in 1999, respectively).

Processor Ownership. Groundfish processor ownership by residents is concentrated in the AKSC shore plant sector, with secondary focus on head and gut trawl and longline catcher processor sectors. More processing entities are owned by AKSC residents than by residents of any other Alaska region. For these processors during 1991-1999, ARSO and flatfish far outdistanced Pacific cod in volume for most years. Although variable, Pacific cod, in turn, represented a higher-volume fishery year to year than pollock. Total reported tons ranged from 48,000 to 91,000 metric tons, and estimated wholesale value of processed products ranged from $35 million to $64 million per year.

Catcher Vessel Ownership and Activity. More groundfish catcher vessels are owned by AKSC residents than by residents of either AKAPAI or AKKO. Fixed gear catcher vessels predominate, and since 1995, five or fewer trawl vessels have been locally owned. In the fixed gear vessel class, smaller vessel classes predominate by a large margin. This articulation is due, in part, to the relatively small scale of fisheries (and processing capacity) in AKSC, the diversified nature of the fisheries pursued, and the presence of relatively sheltered waters. Locally owned vessels harvested groundfish in all five Alaska FMP areas, but very little effort is directed at the AI or EG areas. In 1998, 65 percent of the volume and 69 percent of value came from the CG. From 1988 to1998, Pacific cod accounted for approximately two-thirds of all groundfish landings, pollock and ARSO were variable as second highest in volume, and flatfish represented a distant fourth. During 1988-1998, the ARSO group was substantially more valuable than the other groundfish species listed, even the much-higher-volume Pacific cod.

Harvest Diversity. In recent years, groundfish has accounted for roughly 25 percent of ex-vessel value for groundfish catcher vessels owned by AKSC residents. In 1998, halibut was the most important species, accounting for about one-third of total ex-vessel value. Groundfish and salmon account for roughly 25 percent and crab about 15 percent of the total ex-vessel value. Fully 75 percent of all groundfish vessels fished halibut, and 6 out of every 10 fished salmon.

Processing Diversity. Groundfish has accounted for roughly 10 to 35 percent of ex-vessel value at all AKSC inshore plants over the period from 1991 to 1998. In 1998, ex-vessel value was slightly less for groundfish than for halibut (29 and 31 percent, respectively), and quite a bit less important than for salmon (40 percent of ex-vessel value). Virtually no crab is processed at these plants.

Subsistence. Until May 2000, Homer, Kenai, and Seward were not classified as subsistence communities. Older data suggest that residents of Homer and Kenai consumed between 84 and 94 pounds of subsistence resources per capita per year and zero or less than one pound of subsistence groundfish. No information exists for Seward. Anchorage is not classified as a subsistence community. For Cordova, groundfish are reported as approximately 4 percent (7 pounds per capita) of the total subsistence consumption (179 pounds per person per year).

Tables 2.3.4-1 through 2.3.4-4 summarize information on regional engagement with the groundfish fishery through 1999, the last year pre-AFA onshore co-ops.

Table 2.3.4-1. North Pacific Groundfish Fishery Participation Measures for the Southcentral Alaska Region by Year, 1991-1999

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999
Processor Employment and Payments to Labor									
Employment (Est. FTEs)	NA	241	232	140	239	222	303	290	219
Payments to Labor ($Millions)	12	24	25	16	27	25	24	20	17
Groundfish Processing by Regional Inshore Plants									
Reported Tons (Thousands)	NA	13	13.2	12	13.1	13.5	16.5	17.7	10.8
Product (Thousands)	NA	6.6	6.6	5.3	7.1	6.8	9	9.7	6.6
Utilization Rate (Percent)	NA	50.6	50.1	44.2	54	50.8	54.6	54.8	61.2
Product Value ($Millions)	NA	25.7	31.3	28.8	40	35	39.9	32	26.3
Value per Ton ($)	NA	1968.3	2362.6	2393.5	3058.9	2600.3	2421.1	1808.8	2426.3
Processors Owned by Regional Residents									
No. of Processors Owned	20	27	22	21	19	17	17	16	19
Reported Tons (Thousands)	59.6	71.9	90.8	48.2	69.8	86.4	86.7	77.7	75.2
Wholesale Value ($Millions)		48.5	54.4	35.3	61.4	63.6	49.6	49.4	48.8
Catcher Vessels Owned by Regional Residents									
No. of Catcher Vessels	415	464	359	412	388	321	342	288	NA
Employment (Persons)	1427	1632	1303	1393	1228	1015	1093	944	NA
Payments to Labor ($Millions)	5.6	5.8	4.5	4.5	5.7	3.8	4.5	3.3	NA

* Value suppressed due to the confidentiality of the data.

Table 2.3.4-2. Groundfish Reported by Southcentral Alaska Inshore Plants by Species, 1999

	Total Reported Harvest by Species				
	FLAT	ARSO	PCOD	PLCK	Total
Reported Tons (Thousands)	875	4,593	3,348	2,031	10,846

Source: NMFS Blend Data, 1991-1999.

Table 2.3.4-3. Retained Harvest by Catcher Vessels Owned by Residents of the Southcentral Alaska Region by FMP Subarea, 1998

	Retained Harvest and Ex-Vessel Value by FMP Subarea					
	AI	BS	WG	CG	EG	Total
Retained Tons (Thousands)	0.1	2.2	1.8	7.9	0.3	12.1
Ex-Vessel Value ($Millions)	0.2	0.8	0.7	5.7	0.8	8.2

[a] Due to the confidentiality of the data presented, this value has been added to the CG value.

Table 2.3.4-4. Retained Harvest by Catcher Vessels Owned by Residents of the Southcentral Alaska Region by Species, 1998

	Retained Harvest and Ex-Vessel Value by Species				
	ARSO	FLAT	PCOD	PLCK	Total
Retained Tons (Thousands)	1.4	0.2	8.1	2.5	12.1
Ex-Vessel Value ($Millions)	4.1	0.1	3.7	0.4	8.2

Table 2.3.4-5 displays information on groundfish processing in terms of capacity owned by residents of the Southcentral Alaska region for several years pre-AFA and up to the present. As shown, there is no current regional ownership of mothership processing capacity. Catcher processor capacity is also limited, and there is very little processing of pollock in this sector. There is somewhat more regional shoreplant processing. Pollock processing in this sector has notably declined in 1999-2000 after growing over the 1996-1998 to become the highest volume groundfish species processed by 1998 within this sector. By 2000, it was well behind ARSO and Pacific cod by volume for regionally owned shore processors. This is probably related to Steller sea lion protection measures, which place most pollock in areas which cannot be fished.

Table 2.3.4-5. Groundfish Processed by Sector by Species by Year for the AKSC Region, 1996-2000 (Reported Tons)

Species Group	1996	1997	1998	1999	2000
Mothership Sector					
ARSO	39				
FLAT					
PCOD	51				
PLCK					
Sector Total	89				
Catcher-Processor Sector					
ARSO	369	417	416	321	494
FLAT	357	644	495	386	357
PCOD	4,801	5,749	1,982	3,245	4,124
PLCK		1	117	163	219
Sector Total	5,527	6,810	3,010	4,115	5,194
Shoreplant Sector					
ARSO	5,198	4,415	4,072	4,170	5,295
FLAT	166	357	188	353	194
PCOD	5,499	5,367	3,577	6,412	5,706
PLCK	2,064	7,391	9,982	3,918	2,898
Sector Total	12,926	17,530	17,819	14,852	14,104
Three Sector Total					
Grand Total	18,543	24,340	20,830	18,966	19,298

Source: Federal Blend Data provided by NPFMC staff

Table 3.3.4-6 displays information on retained catch by weight and value by catcher vessels owned by residents of the AKSC region. As shown, pollock is economically far less important to vessel owners in the region than ARSO and Pacific cod (by a factor of approximately 6 and 7, respectively), although pollock value has grown steadily since 1997.

Table 2.3.4-6. Number of Boats and Retained Catch by Weight and Value by Species Category by Catcher Vessel Ownership by Region

AKSC

	Year					
Data	1995	1996	1997	1998	1999	2000
ARSO						
Sum of BOATS	207	214	223	187	154	173
Sum of TOTLBS	3,942,615	3,200,211	3,261,682	2,550,221	2,918,192	4,045,053
Sum of TOTDOL	6,353,731	4,915,905	5,956,506	3,472,804	3,721,373	5,346,339
Flatfish						
Sum of BOATS	6	13	13	21	9	14
Sum of TOTLBS	239,041	388,679	252,293	422,844	430,609	2,118,245
Sum of TOTDOL	66,712	105,975	96,759	102,761	88,284	247,693
Pacific Cod						
Sum of BOATS	244	159	223	190	178	204
Sum of TOTLBS	15,312,911	16,232,523	18,583,911	16,744,461	16,270,252	19,145,173
Sum of TOTDOL	3,575,065	3,619,676	4,282,605	3,376,376	5,402,343	6,764,180
Pollock						
Sum of BOATS	5	15	28	22	25	36
Sum of TOTLBS	5,011,761	2,762,353	2,275,429	5,187,538	5,495,066	7,719,026
Sum of TOTDOL	476,230	243,997	241,108	333,573	537,961	898,683
All Groundfish Species						
Total Sum of BOATS	292	247	276	240	207	237
Total Sum of TOTLBS	24,506,328	22,583,766	24,373,315	24,905,064	25,114,119	33,027,497
Total Sum of TOTDOL	10,471,738	8,885,553	10,576,978	7,285,514	9,749,961	13,256,895

NOTE: While vessel class definitions are the same as for the NMFS SEIS, criteria for inclusion in the classes was somewhat modified to remove “ghost” vessels or those with very limited participation (due to landed bycatch or other circumstances). Also, these totals are based on participation in any of the groundfish category fisheries (pollock pacific cod, flatfish, or “ARSO”) and thus may be more inclusive than for the NMFS SEIS for regions such as WA and OR. Thus vessel numbers may not agree exactly with those of the NMFS SEIS. Note also that the total sum of boats is not additive from the counts by species, as a single boat may appear in more than one species subtotal.

Source: Fish ticket information as processed by NPFMC staff

2.3.4.2 Regionally Important Groundfish Communities and AFA Impacts

Due to relative lack of direct engagement in the Bering Sea pollock fishery (through locally based harvesting, processing, or support service provision) and the absence of spillover impacts directly attributable to either to the AFA itself or the AFA-related sideboard issues, none of the communities of the Southcentral Alaska region are considered to have experienced community level social impacts as a result of the AFA. While some entities based (at least partially) in the Southcentral Alaska region may be engaged in the Bering Sea pollock fishery, or may have otherwise been effected by provisions in the AFA or associated sideboards, these entities are not concentrated in such a way as to have had a significant social or economic impact on any individual community. The catcher-processor industry association is headquartered in Anchorage, and is the location of job fairs for hiring for the sector, but these activities have not been altered significantly as a result of AFA.

The southcentral region has been affected by Steller sea lion protection measures, and processing entities do have connections with operations in the GOA. For instance, CIP used to process pollock in Seward, but Steller sea lion RPAs placed most pollock in areas that could not be fished, and essentially caused CIP to shut their Seward pollock line. This has some effects on the operation of the company as a whole, but the ties to AFA-related effects are too diffuse to trace in this document.

2.3.5 Southeast Alaska Region

2.3.5.1 Regional Characterization

Overview. AKSE encompasses a wide range of communities from Yakutat to Ketchikan and Prince of Wales Island. AKSE accounts for only 3.3 percent (by weight) of the groundfish landed and processed in Alaska. In this regard it is much more similar to AKSC than to AKKO or AKAPAI. The top three AKSE ports account for almost all of the region's reported processing. In alphabetical order, they are Petersburg, Sitka, and Yakutat. All three communities support diverse fisheries, pursued by fishers participating in multiple fisheries. Of most importance are salmon and halibut. The main groundfish fisheries are rockfish and sablefish.

Population. There is no clear common regional dynamic of community growth in AKSE from 1880 to the present. Petersburg, Yakutat, and Sitka all display different patterns. Southeast Alaska is ethnically mixed, but communities differ markedly in this matter. Furthermore, ethnic diversity is more limited in AKSE than in the other Alaska regions considered in this document. The main groups present are Caucasians and Alaska Natives, with other groups present only in relatively small percentages. In Sitka and Petersburg, Caucasians are the great majority of the population (74 and 87 percent respectively), with Alaska Natives at 21 and 10 percent, respectively. Yakutat is 55 percent Native and 43 percent Caucasian. This overall population composition reflects the general identity or "feel" of each community, as Petersburg highlights its Norwegian fishing history, Sitka its diverse Native/Russian-American history, and Yakutat its Native heritage. Males outnumber females, but no community shows the great differences that are present in the four large groundfish ports of AKAPAI.

Employment and Income. Fisheries in general, and groundfish fisheries in particular, are relatively small contributors to AKSE employment, especially compared to the government, services, and retail sectors. For the three communities of most concern, fishing and fish processing are more important in absolute terms than the "average" regional community. Still, the groundfish fishery does not provide a large base for regional employment. There are fewer overall economic opportunities in Yakutat compared to the other two communities.

Tax and Revenue. In contrast to some Alaska groundfish communities in other regions, revenues directly resulting from local landings or processing of groundfish are not the basis for local taxation in AKSE. Only Yakutat has a local fish tax, and it applies to salmon rather than to fish in general (and thus does not apply to groundfish). Shared state fisheries taxes do generate revenue for local communities, however. The region's share of the fisheries business tax and fishery resource landing tax amounted to $2,221,926 in 1999, which was 88 percent of such shared revenue for the region.

Inshore Processing. Most regional groundfish processing occurs in Petersburg, Sitka, and Yakutat. These communities differ in the degree to which they participate in groundfish fisheries and in the mix of species that they exploit. Of greatest significance, both regionally and for the groundfish fishery as a whole, is ARSO, the mixed category that lumps Atka mackerel, rockfish, sablefish, and other groundfish. Most of the active processors in this region use groundfish only as a supplementary product acquired as bycatch. Rockfish are targeted only sometimes as a primary product, and total volume is still low. The groundfish fishery is important for components of the local fleet, but serves a secondary role for most processors. Southeast Alaska processing plants extract a large return from the fish that they process, with a relatively large utilization rate, compared to AKKO and AKAPAI. For the most part, regional processors tend to concentrate on higher-value, low-volume species such as sablefish and rockfish that are typically sold whole or as headed and gutted product.

Processing Ownership. Groundfish processing capacity in AKSE owned by residents of the region is concentrated in two sectors, inshore processing plants and longline catcher processors. A significant percentage (half or more) of regional onshore processing capacity is owned by residents of other areas. It appears that regional pollock and flatfish processing is concentrated primarily in non-locally owned onshore facilities. For regionally owned facilities, groundfish of greatest importance are Pacific cod and the ARSO category (mainly sablefish and rockfish).

Catcher Vessel Ownership and Activity. Ownership patterns for catcher vessels are much the same as for processors in that they indicate a fishery more dependent on limited quantities of Pacific cod, rockfish, and sablefish pursued with longline gear rather than higher volumes of fish pursued with trawl gear. Most locally owned vessels are relatively small and use longline gear for groundfish (and probably participate in other fisheries). Most of their harvest is in the EG. A significant harvest is also taken from the CG, and some from the WG. The value of the harvest retained by regionally owned catcher vessels comes predominantly from the EG. It is likely that regionally owned vessels harvest and deliver nearly all fish in the ARSO category. Virtually no harvest is taken from the Bering Sea. This local fleet is a multi-species, multi-gear fleet concentrated in Sitka and Petersburg. For groundfish, the fleet targets sablefish and rockfish. Thus most of the Pacific cod and pollock processed by the region's shore plants is harvested and delivered by non-local vessels.

Harvest Diversity. In terms of the fishing annual round, groundfish and non-groundfish species tend to complement each other. The importance of groundfish as a proportion of total ex-vessel value has remained relatively stable, between 30 and 40 percent in recent years. Halibut and salmon each contribute about 25 percent each of the total ex-vessel value. The fleet is relatively diversified, with more than 80 percent of groundfish catcher vessels owned by AKSE residents participating in the halibut fishery, and about 70 percent of groundfish vessels participating in the salmon fishery. Twenty-five percent of the vessels also fish for crab. About 60 percent participate in fisheries other than halibut, salmon, and crab.

Processing Diversity. Groundfish has accounted for roughly 20 to 30 percent of ex-vessel value at regional processing facilities over the period from 1991 to 1998, with a gradual increase in value. Groundfish accounts for roughly 29 percent of the value of total plant production, compared to 40 percent for salmon and 20 percent for halibut.

Subsistence. Subsistence utilization in the regionally important groundfish communities of Petersburg, Sitka, and Yakutat ranges between about 200 and 400 pounds per capita. Groundfish represents 1 to 5 percent of the total subsistence resources consumed.

Tables 2.3.5-1 through 2.3.5-4 summarize information on regional engagement with the groundfish fishery through 1999, the last year pre-AFA onshore co-ops.

Table 2.3.5-1. North Pacific Groundfish Fishery Participation Measures for the Southeast Alaska Region by Year, 1991-1999

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999
Processor Employment and Payments to Labor									
Employment (Est. FTEs)	NA	121	123	129	107	117	140	169	144
Payments to Labor ($Millions)	3	17	16	20	18	18	19	18	16
Groundfish Processing by Regional Inshore Plants									
Reported Tons (Thousands)	NA	23.5	24.1	25.8	18.8	15.3	23.2	24.1	20
Product (Thousands)	NA	8.5	8.6	9	7	6.8	8.1	9.2	7.2
Utilization Rate (Percent)	NA	36.1	35.9	35	37.3	44.4	35.1	38.3	36.3
Product Value ($Millions)	NA	40.3	41.3	50.8	49.6	46.5	51.5	46.7	38
Value per Ton ($)	NA	1713.1	1713	1971	2637	3041.9	2222.9	1941.1	1900.1
Processors Owned by Regional Residents									
No. of Processors Owned	14	15	14	17	12	15	12	8	11
Reported Tons (Thousands)	11.2	11.6	11.7	13.8	10.7	11.4	12.4	9.9	11.1
Wholesale Value ($Millions)	NA	12	12.5	15.8	14.5	16.1	12.6	9.8	10.7
Catcher Vessels Owned by Regional Residents									
No. of Catcher Vessels	923	926	889	844	649	654	633	548	NA
Employment (Persons)	2076	2235	2159	2081	1645	1646	1581	1380	NA
Payments to Labor ($Millions)	9.1	9.8	9.5	13.7	14.2	13.6	13.8	9	NA

* Value suppressed due to the confidentiality of the data.

Table 2.3.5-2. Groundfish Reported by Southeast Alaska Inshore Plants by Species, 1999

	Total Reported Harvest by Species				
	FLAT	ARSO	PCOD	PLCK	Total
Reported Tons	1672	6197	4499	7611	19979

Source: NMFS Blend Data, 1991-1999.

Table 2.3.5-3. Retained Harvest by Catcher Vessels Owned by Residents of the Southeast Alaska Region by FMP Subarea, 1998

	Retained Harvest and Ex-Vessel Value by FMP Subarea					
	AI	BS	WG	CG	EG	Total
Retained Tons (Thousands)	0	0.1	0.1	2.1	5.8	8.1
Ex-Vessel Value ($Millions)	0	0.1	0.3	4.2	17.9	22.6

[a] Due to the confidentiality of the data presented, this value has been added to the CG value.

Table 2.3.5-4. Retained Harvest by Catcher Vessels Owned by Residents of the Southeast Alaska Region by Species, 1998

	Retained Harvest and Ex-Vessel Value by Species				
	ARSO	FLAT	PCOD	PLCK	Total
Retained Tons (Thousands)	6.7	0.1	1.2	0.1	8.1
Ex-Vessel Value ($Millions)	22	0	0.5	0	22.6

Table 2.3.5-5 presents information on groundfish processing by entities owned by Southeast Alaska residents. As shown, the mothership group had no local ownership activity in 1999, and only processed Pacific cod in 2000. The groundfish catcher processor sector has had relatively low levels of activity in general, but the pollock processing fell a large percentage basis from 1998 to 1999-2000 levels, with the 1999 processing total being less than 2 percent of the 1998 amount. Regionally owned shoreplant groundfish processing activity is dominated by ARSO species, with no pollock currently being processed ashore.

Table 2.3.5-5. Groundfish Processed by Sector by Species by Year for the AKSE Region, 1996-2000 (Reported Tons)

Species Group	1996	1997	1998	1999	2000
Mothership Sector					
ARSO	0				0
FLAT	157	0			0
PCOD	3,208	4,698	1,075		6,860
PLCK	2	657	686		9
Sector Total	3,368	5,355	1,761		6,869
Catcher-Processor Sector					
ARSO	716	412	422	440	376
FLAT	3,379	1,140	359	459	591
PCOD	11,105	11,153	10,215	10,393	12,414
PLCK	8,571	6,857	10,171	187	344
Sector Total	23,771	19,562	21,166	11,479	13,725
Shoreplant Sector					
ARSO	8,070	7,443	7,125	6,035	6,795
FLAT	2	45	5	1	3
PCOD	201	308	251	184	135
PLCK		4	7	0	
Sector Total	8,273	7,799	7,388	6,244	6,934
Three Sector Total					
Grand Total	35,412	32,717	30,315	17,723	27,529

Source: Federal Blend Data provided by NPFMC staff

Table 2.3.5-6 provides information on volume and value of groundfish species harvested by catcher vessel owners from the Southeast Alaska region. As shown, pollock (and flatfish) are worth very little to these CV operations compared to ARSO and Pacific cod. In 2000, Pacific cod was worth close to $1 million to these operations and ARSO was worth well in excess of $21 million; pollock was worth less than $40 thousand.

Table 2.3.5-6. Number of Boats and Retained Catch by Weight and Value by Species Category by Catcher Vessel Ownership by Region

AKSE

Data	Year					
	1995	**1996**	**1997**	**1998**	**1999**	**2000**
ARSO						
Sum of BOATS	383	376	344	305	290	274
Sum of TOTLBS	14,426,529	12,651,057	10,676,500	10,225,995	9,070,417	9,983,918
Sum of TOTDOL	27,064,835	23,982,541	22,710,231	15,079,385	15,608,260	21,483,281
Flatfish						
Sum of BOATS	***	***	***	***	6	14
Sum of TOTLBS	***	***	***	***	106,951	89,825
Sum of TOTDOL	***	***	***	***	23,986	21,069
Pacific Cod						
Sum of BOATS	109	98	111	84	123	105
Sum of TOTLBS	1,624,023	2,199,155	3,022,624	2,176,650	3,580,004	3,139,907
Sum of TOTDOL	362,959	453,393	647,912	405,531	966,369	852,496
Pollock						
Sum of BOATS	***	***	***	***	5	7
Sum of TOTLBS	***	***	***	***	78,820	337,010
Sum of TOTDOL	***	***	***	***	6,930	38,541
All Groundfish Species						
Total Sum of BOATS	390	380	350	307	294	280
Total Sum of TOTLBS	16,075,914	15,053,589	13,789,622	12,725,399	12,836,192	13,550,660
Total Sum of TOTDOL	27,432,755	24,467,970	23,374,875	15,533,209	16,605,545	22,395,387

NOTE: While vessel class definitions are the same as for the NMFS SEIS, criteria for inclusion in the classes was somewhat modified to remove "ghost" vessels or those with very limited participation (due to landed bycatch or other circumstances). Also, these totals are based on participation in any of the groundfish category fisheries (pollock pacific cod, flatfish, or "ARSO") and thus may be more inclusive than for the NMFS SEIS for regions such as WA and OR. Thus vessel numbers may not agree exactly with those of the NMFS SEIS. Note also that the total sum of boats is not additive from the counts by species, as a single boat may appear in more than one species subtotal. "***" indicates that the information is suppressed due to confidentiality concerns.

Source: Fish ticket information as processed by NPFMC staff

2.3.5.2 Regionally Important Groundfish Communities and AFA Impacts

Similar to the case seen in the Southcentral Alaska region, due to relative lack of direct engagement in the Bering Sea pollock fishery (through locally based harvesting, processing, or support service provision) and the absence of spillover impacts directly attributable either to the AFA itself or the AFA related sideboard issues, none of the communities of the Southeast Alaska region are considered to have experienced community level social impacts as a result of the AFA. While some entities based (at least partially) in the Southeast Alaska region may be engaged in the Bering Sea pollock fishery, or may have otherwise been effected by provisions in the AFA or associated sideboards, these entities are not concentrated in such a way as to have had a significant social or economic impact on any individual community.

2.3.6 Washington Inland Waters Region

2.3.6.1 Regional Characterization

Overview. The WAIW region as a whole, and especially the greater Seattle area in particular, is engaged in all aspects of the overall North Pacific groundfish fishery, and the Bering Sea pollock fishery specifically. While this region is distant from the harvest areas, it is the organizational center of much of the industrial activity that comprises the human components of the fishery. More accurately, specific industry sectors based in or linked to Seattle are substantially engaged in or dependent on the North Pacific groundfish fishery. The scale and diversity of the WAIW makes a socioeconomic assessment directly related to the Alaska groundfish fishery very complex. Seattle's relationship to the Alaska groundfish fishery in general (and the Bering Sea pollock fishery in particular) is paradoxical. When examined from certain perspectives, Seattle is arguably more involved in the Alaska groundfish fishery than any other community. One example is the large absolute number of Seattle jobs in the Alaska groundfish fishery compared to all other communities, whether counted in terms of current residence, community of origin, or community of original hire (setting aside the matter of where the jobs are actually located). On the other hand, when examined from a comparative and relativistic perspective, it could be argued that the fishery is less important or vital for Seattle than for the other communities considered. Using the same example, the total number of Alaska groundfish-fishery-related jobs in greater Seattle compared to the overall number of jobs in Seattle is quite small, in contrast with the same type of comparison for the much smaller Alaska coastal communities.

Regional Economy. As expected of a region encompassing a large metropolitan area and containing 3.8 million residents, retail trade and services are extremely important economic sectors and are the two largest in employment. Manufacturing employs more people than the government sector, followed by finance, construction, wholesale trade, and transportation. The military, civilian federal, agricultural, and mining sectors are relatively small. The fishing industry has a significant presence in parts of WAIW, but is greatly overshadowed in terms of employment by other industry sectors. During the period 1992-1999, between 1,687 and 2,620 WAIW region residents were employed annually by Alaska groundfish processing sectors. Offshore catcher processor sectors (motherships, trawl catcher processors, and longline catcher processors) are by far the most significant contributors. Due to the methodology employed for the Groundfish SEIS (upon which the baseline analysis is based), in which all employment for these entities accrues to the region of the residence of the owner, regional employment attributable to these offshore sectors is probably overstated in absolute terms. On the other hand, many entities in these sectors have various business relationships with Alaska CDQ groups, and have special arrangements to foster Alaska, and especially Native Alaska, hire. Furthermore, shoreplant employment for WAIW residents may be understated, because all such employment except for head office staff is attributed to the region where the plant is located. Payments to labor for processing employment ranged between $183 million and $323 million during this same period.

Processing Ownership. Ownership of Alaska groundfish processing capacity is highly concentrated among owners with residence in WAIW. (While this remains true for majority ownership, CDQ groups have recently been increasing minority ownership in at-sea processing operations, as discussed elsewhere in this document.) This concentration applies to both shoreplants and catcher processors, and varies in degree between sectors. In 1999, WAIW-owned processors reported 1.5 million metric tons of groundfish. Of this total, 71 percent was pollock, 13 percent was Pacific cod, 9 percent was flatfish, and 7 percent was ARSO. In terms of estimated wholesale value, WAIW-owned processors processed $900 million worth of groundfish (down from about $1.3 billion in 1992). Of this value, 64 percent came from pollock, 21 percent from Pacific cod, 9 percent from ARSO, and 5 percent from ARSO.

Catcher Vessel Ownership. Residents of WAIW own catcher vessels in each vessel class that participate in the Alaska groundfish fishery. Numbers in all categories except the smaller vessels (fixed gear vessels less than 60 feet [and especially those less than 32 feet] and trawl vessels less than 60 feet) are significant relative to ownership levels in the Alaska regions. Catcher vessels owned by residents of WAIW tend to be larger than those owned by residents of Alaska, and this comparison emphasizes the region's concentration of ownership (and participation) in the BSAI groundfish fisheries. This is especially true for trawl vessels in general and large, AFA-eligible trawlers in particular. Catcher vessels owned by WAIW residents accounted for between 865 and 1,390 employees per year over the period 1988-1998, and payments to labor ranged from $27 million to $63 million. Harvest retained by these vessels is heavily concentrated in the BS FMP area. In 1999, of the 514,000 tons retained by these vessels, 86 percent came from the BS, 6 percent from the CG, 5 percent from the WG, 2 percent from the EG, and 1 percent from the AI.

Value of retained harvest followed a similar pattern, with variation attributable to differences in the mix of volume and relative value of species harvested in the different FMP areas. Of the $96 million total value, 71 percent came from the BS, 12 percent from the CG, 9 percent from the EG, 6 percent from the WG, and 2 percent from the AI. In 1998, pollock comprised 92 percent of the total Alaska groundfish catch for these vessels, Pacific cod 6 percent, ARSO 1 percent, and flatfish less than 1 percent. Pollock accounted for 79 percent of value of the harvest of these vessels, ARSO 21 percent, Pacific cod 12 percent, and flatfish less than 1 percent. In the region, 43 percent of the vessels representing 67 percent of the volume and 62 percent of the value of the harvest are located in Seattle. No other community in WAIW has residents with ownership of more than 6 percent of the region's vessels or 10 percent of the region's total volume or value of harvest.

Catcher Vessel Diversity. While Alaska groundfish make up the greater part of the ex-vessel value of the harvest by Alaska groundfish catcher vessels owned by WAIW residents, other fisheries are seasonally important. Although harvest volumes and values vary, over the period 1988-1998 groundfish has amounted to about 60 percent of the ex-vessel value of the harvest for these vessels. In 1998 specifically, groundfish comprised 57 percent of the ex-vessel value of the annual harvest round. About 27 percent was from crab, 11 percent from halibut, and 5 percent from salmon. Among regionally owned Alaska groundfish vessels, 47 percent also fished for halibut, about 28 percent also fished for crab, about 28 percent also fished for salmon, and about 27 percent also fished for other species in Alaska FMP areas.

Tables 2.3.6-1 through 2.3.6-4 summarize information on regional engagement with the groundfish fishery through 1999, the first year of offshore co-ops, and the last year pre-AFA onshore co-ops.

Table 2.3.6-1. North Pacific Groundfish Fishery Participation Measures for the Washington Inland Waters Region by Year, 1991-1999

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999
Processor Employment and Payments to Labor									
Employment (Est. FTEs)	NA	2277	2035	2032	2353	2620	2145	2165	1687
Payments to Labor ($Millions)	323	282	191	212	256	232	222	186	160
Groundfish Processing by Regional Inshore Plants									
Reported Tons (Thousands)	NA	0	0	0	0	0	0	0	0
Product (Thousands)	NA	0	0	0	0	0	0	0	0
Utilization Rate (Percent)	NA	0	0	0	0	0	0	0	0
Product Value ($Millions)	NA	0	0	0	0	0	0	0	0
Value per Ton ($)	NA	0	0	0	0	0	0	0	0
Processors Owned by Regional Residents									
No. of Processors Owned	159	170	148	141	137	128	119	114	105
Reported Tons (Thousands)	2298	2102	1936	2014	1965	1855	1846	1711	1500
Wholesale Value ($Millions)	NA	1307	869.6	1014	1236	1080	1063	957.1	899.6
Catcher Vessels Owned by Regional Residents									
No. of Catcher Vessels	315	343	288	312	303	277	293	280	NA
Employment (Persons)	1214	1390	1121	1214	1263	1148	1217	1147	NA
Payments to Labor ($Millions)	47.2	63.1	35.7	44.1	57.7	48.5	58.1	38.5	NA

* Value suppressed due to the confidentiality of the data.
NA = Not available

Table 2.3.6-2. Groundfish Reported by Washington Inland Waters Inshore Plants by Species, 1999

	Total Reported Harvest by Species				
	FLAT	ARSO	PCOD	PLCK	Total
Reported Tons (Thousands)	0	0	0	0	0

Source: NMFS Blend Data, 1991-1999.

Table 2.3.6-3. Retained Harvest by Catcher Vessels Owned by Residents of the Washington Inland Waters Region by FMP Subarea, 1998

	Retained Harvest and Ex-Vessel Value by FMP Subarea					
	AI	BS	WG	CG	EG	Total
Retained Tons (Thousands)	6.9	443.8	26.1	29.3	8.3	514.4
Ex-Vessel Value ($Millions)	1.7	68.2	6	11.7	8.7	96.3

[a] Due to the confidentiality of the data presented, this value has been added to the CG value.

Table 2.3.6-4. Retained Harvest by Catcher Vessels Owned by Residents of the Washington Inland Waters Region by Species, 1998

	Retained Harvest and Ex-Vessel Value by Species				
	ARSO	FLAT	PCOD	PLCK	Total
Retained Tons (Thousands)	6.2	2.2	31.9	474.1	514.4
Ex-Vessel Value ($Millions)	16.6	0.4	10.3	54.3	81.5

Table 2.3.6-5 displays information on groundfish processed by sector for those entities with ownership addresses in the Washington-Seattle region. As noted in previous documents produced for the NPFMC, most of the AKAPAI shoreplants have ownership ties to Seattle. The database provided by NPFMC staff did not include an ownership field for shoreplants, but rather coded their production only to their physical location. Thus we are relying on earlier ownership information, and the rough approximation that ownership in 2000 is equivalent to ownership in previous years (with Tyson replaced by Trident) in the following discussion. Motherships and catcher processors are both concentrated, in terms of majority ownership, in Seattle.

Table 2.3.6-5. Groundfish Processed by Sector by Species by Year for the WA-Seattle Region, 1996-2000 (Reported Tons)

Species Group	1996	1997	1998	1999	2000
Mothership Sector					
ARSO	138	20	15	8	3
FLAT	1,479	2,064	436	6	93
PCOD	11,383	14,774	7,787	7,878	4,104
PLCK	177,920	158,967	160,075	108,377	114,144
Sector Total	190,920	175,825	168,313	116,269	118,360
Catcher-Processor Sector					
ARSO	100,226	78,269	68,732	73,843	63,270
FLAT	118,159	144,094	95,582	77,689	105,325
PCOD	93,904	111,579	104,681	83,520	83,077
PLCK	547,674	518,202	552,419	410,248	495,951
Sector Total	859,963	852,143	821,414	645,300	747,688
Shoreplant Sector					
ARSO	NA	NA	NA	NA	NA
FLAT	NA	NA	NA	NA	NA
PCOD	NA	NA	NA	NA	NA
PLCK	NA	NA	NA	NA	NA
Sector Total	NA	NA	NA	NA	NA
Three Sector Total					
Grand Total	1,051,219	1,028,302	1,026,588	782,098	910,080

Source: Federal Blend Data provided by NPFMC staff

Table 2.3.6-6 provides information on volume and value of groundfish species harvested by catcher vessels owned by residents of the Washington-Seattle region. Of most interest for our discussion are the 1999 and 2000 columns, representing pre- and post-AFA, although it is of course unrealistic to expect that the first year after a management change will reflect all eventual effects. Perhaps most striking is that for all four species categories, participation of WAIW boats in BSAI fisheries increased in terms of boat numbers, weight, and dollars. For all but cod, the increase in dollars was significantly more than the increase in weight. At the same time, for all four species categories, participation of WAIW boats in GOA fisheries declined in terms of numbers of boats, and only increased in weight and value for the flatfish group. The "other" ARSO group was a little below 1999 in terms of weight, and 125 percent of the 1999 value in terms of dollars. Both Pacific cod and pollock declined significantly on all three measures. In the context of general increases in quota and catch in the BSAI for 2000 compared to 1999, and decreased quota and catch for pollock and Pacific cod and increased quota and catch for flatfish and "ARSO" in the GOA for 2000 compared to 1999, WAIW boats participated about as expected in BSAI fisheries, but were below expected activity levels in GOA fisheries.

Table 2.3.6-6. Number of Boats and Retained Catch by Weight and Value by Species Category by Catcher Vessel Ownership by Region

Area	Item	1995	1996	1997	1998	1999	2000
ARSO							
BSAI	Boats	101	94	98	82	101	109
	Pounds	1,915,763	1,292,681	1,981,568	1,928,516	1,083,257	1,522,371
	Dollars	2,602,884	1,386,762	1,336,419	964,573	1,163,933	2,092,677
GOA	Boats	172	164	168	188	183	144
	Pounds	15,441,603	13,329,008	12,153,753	11,510,705	13,543,883	12,738,630
	Dollars	29,189,149	23,482,221	23,447,075	15,209,896	16,389,522	20,443,075
ARSO Sum of BOATS		273	258	266	270	284	253
ARSO Sum of TOTLBS		17,357,366	14,621,689	14,135,321	13,439,221	14,627,140	14,261,001
ARSO Sum of TOTDOL		31,792,033	24,868,983	24,783,494	16,174,469	17,553,455	22,535,752
Flatfish							
BSAI	Boats	85	85	83	80	83	111
	Pounds	21,725,115	15,686,472	39,975,570	2,732,865	4,900,065	7,886,973
	Dollars	1,872,987	792,425	2,136,965	119,841	238,738	933,646
GOA	Boats	62	40	56	57	62	33
	Pounds	2,215,870	4,286,667	4,401,026	2,229,895	3,120,569	3,274,751
	Dollars	395,094	703,432	667,830	255,172	300,259	376,631
FLATFISH Sum of BOATS		147	125	139	137	145	144
FLATFISH Sum of TOTLBS		23,940,985	19,973,139	44,376,596	4,962,760	8,020,634	11,161,724
FLATFISH Sum of TOTDOL		2,268,081	1,495,857	2,804,795	375,013	538,997	1,310,277
Pacific Cod							
BSAI	Boats	138	124	127	107	137	163
	Pounds	73,580,579	92,329,417	85,573,726	47,592,117	51,614,412	82,384,009
	Dollars	11,993,640	14,237,194	14,971,764	6,904,687	12,240,135	13,934,909
GOA	Boats	124	81	114	127	135	113
	Pounds	28,012,578	28,168,573	32,070,737	23,606,659	27,969,604	21,009,167
	Dollars	5,179,056	4,640,514	5,862,637	3,691,556	7,347,782	4,802,080
PACIFIC COD Sum of BOATS		262	205	241	234	272	276
PACIFIC COD Sum of TOTLBS		101,593,157	120,497,990	117,644,463	71,198,776	79,584,016	103,393,176
PACIFIC COD Sum of TOTDOL		17,172,696	18,877,708	20,834,401	10,596,243	19,587,917	18,736,989
Pollock							
BSAI	Boats	71	73	80	77	87	112
	Pounds	768,212,986	720,091,305	681,387,046	727,262,006	831,096,294	969,115,993
	Dollars	73,808,638	57,468,653	69,545,885	47,504,755	78,269,942	111,445,896
GOA	Boats	69	46	64	65	77	40
	Pounds	61,426,245	40,637,691	75,517,902	116,461,921	78,362,700	37,576,886
	Dollars	5,797,838	3,546,736	7,795,788	7,650,565	7,575,599	4,325,694
POLLOCK Sum of BOATS		140	119	144	142	164	152
POLLOCK Sum of TOTLBS		829,639,231	760,728,996	756,904,948	843,723,927	909,458,994	1,006,692,879
POLLOCK Sum of TOTDOL		79,606,476	61,015,389	77,341,673	55,155,320	85,845,541	115,771,590

All Groundfish Species						
Total Sum of BOATS	408	363	391	363	388	358
Total Sum of TOTLBS	972,530,739	915,821,814	933,061,328	933,324,684	1,011,690,784	1,135,508,780
Total Sum of TOTDOL	130,839,286	106,257,937	125,764,363	82,301,045	123,525,910	158,354,608

NOTE: While vessel class definitions are the same as for the NMFS SEIS, criteria for inclusion in the classes was somewhat modified to remove ""ghost"" vessels or those with very limited participation (due to landed bycatch or other circumstances). Also, these totals are based on participation in any of the groundfish category fisheries (pollock pacific cod, flatfish, or ""ARSO"") and thus may be more inclusive than for the NMFS SEIS for regions such as WA and OR. Thus vessel numbers may not agree exactly with those of the NMFS SEIS. Note also that the total sum of boats is not additive from the counts by species, as a single boat may appear in more than one species subtotal.

Source: Fish ticket information as processed by NPFMC staff

2.3.6.2 Regionally Important Groundfish Communities and AFA Impacts: Seattle

As noted earlier, there are a number of communities in the Washington Inland Waters region that have important links to the North Pacific groundfish fishery. However, none of these communities have the breadth and depth of ties found in the greater Seattle metropolitan area. NCR 1999 notes that the "Alaska groundfish and halibut fisheries conducted by Washington-based fleets are presently the most important engine of this region's fishing industry." They continue in their report to document how these fleets are, in fact, based mostly in the Port of Seattle.

NCR enumerates the Washington State-based fleet and describes the fisheries in which they participate. They divide the 2,800 total vessels into the 1,450 vessels distant water fleet (most of which clearly do not fish for groundfish) and the 1,350 vessels in the local fleet. They report that the distant water fleet accounts for 95 percent of the catch and revenue, compared to 5 percent for the local fleet. They do not specifically focus on individual fisheries (although some information is provided in terms of graphs and diagrams), but it is evident that a number of Alaskan fisheries contribute to this pattern – salmon, halibut, sablefish, herring, crab, and of course groundfish (NRC 1999:4, 50-76 with associated table). They also describe the currently dismal condition of local Washington State fisheries (NRC 1999:77-88, with associated tables).

There is relatively little information which deals specifically with the Alaskan groundfish distant water fleet, or with those geographical areas of Seattle most identifiable with fishing and perhaps characterizable as "fishing communities." Past documents produced for the NPFMC have contained profiles of the Port of Seattle, Ballard, and the Ballard/Interbay/Northend Manufacturing Center (BINMIC) planning area, as potential types of (or proxies for) Seattle "fishing communities." Information for these areas is abstracted from those documents and presented in the appropriate sections below. For the most part, no additional information relevant to the Alaskan groundfish fisheries has been developed for those areas since the earlier documents were produced. The current status of whatever recent information is available is discussed in the relevant section.

Overview: Greater Seattle Area

"Seattle" as used in this section refers to the greater Seattle metropolitan area, and is not confined to the port or municipality of Seattle, except where specifically noted. As is clear from a consideration of the individual sector profiles, Seattle, in one way or another, is engaged in all aspects of the North Pacific groundfish fishery. While Seattle itself is quite distant in geographic terms from the harvest areas of the fishery, it is the organizational center of much of the industrial activity that comprises the human components of this fishery. More accurately, specific industry sectors based in and/or linked to Seattle (or, in some cases, specific geographic subareas within Seattle), are "substantially engaged in" or "substantially dependent upon" the North Pacific groundfish fishery.

What makes Seattle an analytic challenge, in terms of a socioeconomic assessment directly related to the Alaska groundfish fishery, is its scale and diversity. Seattle's relationship to the Alaska groundfish fishery is a paradox. When examined from a number of different perspectives, Seattle is arguably more involved in the Alaska groundfish fishery in general, and the Bering Sea pollock fishery in particular, than any other community. One example is the large absolute number of "Seattle" jobs within the Alaska groundfish fishery compared to all other communities, whether counted in terms of current residence, community of origin, or community of original hire - setting aside, for the moment, where the jobs are actually located. On the other hand, when examined from a comparative and relativistic perspective, it could be argued that the fishery is less important or vital for Seattle than for the other communities considered. Using the same example, the total number of Alaska groundfish fishery-related jobs in greater Seattle compared to the overall number of jobs in Seattle is quite small, in contrast with the same type of comparison for the much smaller Alaska coastal communities. The sheer size of Seattle dilutes the overall impact of the Alaska groundfish fishery jobs, whereas in Alaskan communities such jobs represent a much greater proportion of the total employment in the community setting aside, for the moment, the consideration of whether those jobs are filled by 'residents.'

As is also clear from earlier compiled sector descriptions, while all sectors are tied to Seattle in one way or another, the magnitude and nature of these ties varies considerably between sectors. It is through these ties, and how they are manifested in Seattle, that the role of the community in the Alaska groundfish fishery can be seen. While it was possible, and desirable for analytic purposes, to include some brief community level description for a few of the Alaska coastal communities in this document to show the relative 'engagement' or 'dependence' on the fishery, for Seattle this type of comparison tends to understate the importance of the Alaska groundfish fishery for particular sectors or subareas, losing the importance of the fishery in the 'noise' of the greater Seattle area.

The precise nature of the relationship between a given sector and the Seattle area varies from sector to sector, in terms of employment patterns, expenditure patterns, and concentration or localization in the Seattle area. While local experts and industry participants are well aware of these patterns, systematic quantitative information to describe these patterns was not available at the time of this study. We have used the limited information that is available and supplemented it with information garnered from field interviews to provide a community context characterization.

There are (at least) two ways to approach a discussion of the localization of fishing activity in general, and Alaska groundfish fishery activity in particular, within the Seattle area. The focus could be on port activity and economic organization, or on a more general historical/geographical (neighborhood or community) focus centered around fishermen, fishing activities, and marine support businesses. The first has the advantage of being well-defined, but is totally industry focused, and fishing-related activities comprise only a small portion of total activity and are not an easily 'isolatable' component using existing information. The second, generally corresponding to the common identification of Ballard and its environs with Seattle's fishing community, would incorporate much more of the overall social organization of fishing activity, but is very difficult to define and characterize within an overall economic and social context as large as Seattle's. Either approach would be a huge task for which available information is limited. A compromise has been reached in this document by briefly discussing the Port of Seattle in regard to the Alaska groundfish fishery and a cursory history and characterization of Ballard within the context of greater Seattle. This section first overviews the fishery from the community context, and then focuses on fishery-related industrial areas. The conclusion includes a discussion of the issue from the perspective of the 'community side' of the links.

The Seattle 'Geography' of the Alaska Groundfish Fishery

In this section, locational issues are discussed with respect to the Seattle area and the Alaska groundfish fishery. Here, the discussion is divided into two components: the Port of Seattle and the community of Ballard. Each provides a different and useful perspective on the Seattle social/socioeconomic ties to the fishery. The Port of Seattle is one of the more obvious ways to discuss the localization of the fishing economy in Seattle and the concentration of potential socioeconomic impacts of fishery management upon Seattle. Ballard is another locally recognized and labeled area with a fishing identity. The characterization of neither is a straightforward task, but the first is much more possible than the second. There are practical limitations on the availability of data attributable specifically to the Alaska groundfish fishery. Further, the port is well defined as an institutional entity, whereas Ballard as a community is not.

The Port of Seattle

Martin Associates (2000) provides an overall assessment of the economic impact of fishing activity based at Port of Seattle facilities. They conclude that such activity generates $400 million in wages (direct, indirect, and induced), $315 million in business revenues, $42 million in local purchases, and $48 million in state and local taxes. There is no way to desegregate the Alaskan distant water fleet from this overall impact, so the utility of the information for our purposes is limited. They do provide estimates for the annual expenditures in Seattle of the various fishing vessels home ported there, and as might be expected, those for the larger vessels, such as participate in the Alaskan groundfish fisheries, are the highest in terms of expenditures per vessel – $250,000 for catcher trawlers, $900,000 for factory trawlers, and $1.7 million for motherships. Most of the vessels in these classes home ported in Seattle probably participate in the Alaskan groundfish fisheries, but also participate in other fisheries. There are also many vessels in the Seattle distant water fleet that do not participate in the Alaskan groundfish fisheries. The Port itself does not have information on moorage fees received and other such information readily available, but conversations with Port of Seattle officials has indicated that moorage fees from the Alaskan groundfish fleet have declined in the past two years for two principal reasons – there are fewer vessels (the retirement/scrapping of catcher processors) and vessels are spending more time at sea and less time in port. Both of these are directly attributable to AFA. While it would appear to be a negative effect, this was in fact explained as a positive indicator for the economy of the region as a whole, as a smaller number of profitable vessels is more of an economic driver than is a larger number of marginally viable vessels. The "loss" of Port of Seattle moorage fees is merely one of the more noticeable effects of this change, but not necessarily one of the more significant ones.

The Port of Seattle is separate from the Municipality of Seattle and is an economically self-supporting entity. Besides its direct revenues, it receives 1 percent of the property tax collected in King County, but with a cap on funding not to exceed $33 million a year. In turn, all port revenues are charged a 12.4 percent tax, which is split between the city of Seattle and the state of Washington (in lieu of property tax). The Port's charge is the development of infrastructure that will support local and regional economic activities, especially in cases where the rate of return on investment in that infrastructure may be too low (although still positive) for the private investor. Such development contributes to the overall economy of the region through synergistic and multiplier effects.

The Port of Seattle includes not only marine facilities but the airport as well. The port publishes various reports on their activities, but most are either too general or far too specific for the purposes of this study. The Marine Division of the port tracks economic activity by general service area - container terminal, cargo piers and industrial properties, central waterfront piers and property, warehouse and distribution operations, Shishole Bay Marina (recreational moorage), and Fishermen's Terminal Pier and property. None of this information is organized so that expenses and revenues attributable to fishing activity (let alone specific fisheries such as the Alaska groundfish fishery) can be aggregated and assessed - although projects now underway will, in the future, provide such information to a greater degree than at present. Given this lack of breakout documentation, most of the information on the nature and magnitude of the importance of the Alaska groundfish fishery for the Port of Seattle came from talks with the Director of Marine Operations for the port.

The Port's marine facilities occupy an extensive area, but can generally be characterized as the Ship Canal-Elliott Bay areas. The Director of Marine Operations estimated that Alaska-related fishing activity generates port revenues of $1 million to $2 million a year. Facilities, and the degree to which they are connected with fishery activities, were identified as follows:

- Fishermen's Terminal (Ship Canal) - an estimated 10 percent of its revenues (roughly $2 million for all fisheries per year) were judged to result from catcher processor operations and an additional 10 percent from catcher vessel activity associated with Alaska fisheries (not just groundfish);
- Pier and Terminal 91 (North Elliott Bay) - used extensively by catcher processor fleet and provides the bulk of the Port's revenue derived from the Alaska groundfish fishery, through moorage and other fees. This facility also caters to ferries, a tug and barge company, an auto importer, apple exports, and cold storage facilities;
- Central waterfront (mid-Elliott Bay) piers –not so fishery related, although they are sometimes used by larger vessels (Pier 48, Pier 66, Pier 69);
- Pier 25 (East Duwamish Waterway, south Elliott Bay) - permanent moorage for one of the mothership operations, but also used for catcher processor offloading, has cold storage facilities to hold product for transhipping, and a small surimi plant is located there;
- South end in general (Duwamish manufacturing and industrial center) - has some fisheries-related activities (such as cold storage facilities) but is more oriented to cargo operations and other industrial activities.

The summary conclusion for port-focused analysis is that fishing-related activities take place throughout the Port, but are concentrated in the Fishermen's Terminal and Pier 90/91 areas. Of primary importance for fishing activity, and especially for larger vessels, is the availability of suitable moorage. Much of this moorage is supplied by the port, in an aggressive response to the demand from the fishing fleet.

The initial development of Fishermen's Terminal in the 1980s was because of the perceived need for more moorage for larger vessels involved in the distant water fisheries. The current redevelopment of Fishermen’s Terminal will likely increase this emphasis through the conversion of smaller moorage stalls to facilities more suitable for vessels 50 feet and longer (NRC 1999). This is in response to the drastic downturn in the economic viability of the local fishing fleet, especially the local salmon fleet which had been historically based at Fishermen’s Terminal, and the increasing importance of Alaskan distant water fisheries for Seattle-based boats. These vessels tend to be 50 feet in length or more.

Ballard

When looked at on a neighborhood basis, one of more obvious foci of the distant water fishery in the greater Seattle area is the community of Ballard. Today the term 'Ballard' represents a loosely defined geographical neighborhood of northwest Seattle. There is no geographically standard area for which various types of comparable information exists. Nonetheless, the area does have a geographical identity in peoples' minds and, together with Magnolia and Queen Anne, has its own yellow pages telephone directory (published by the Ballard and Magnolia Chambers of Commerce). The following brief section is based predominately on information from the Ballard Chamber of Commerce (1998), Reinartz (1988a, 1988b, 1988c, 1988d), Hennig and Tripp (1988), and McRae (1988).

Fishermen's Terminal on Salmon Bay is recognized as the home of the Pacific fishing fleet and has been characterized as the West Coast's 'premier home port.' Fishermen's Terminal (Salmon Bay Terminal) in turn has often been identified with Ballard - formerly a separate city (incorporated 1890) annexed by Seattle in 1907. Until the construction of the Chittenden Locks and the Lake Washington Ship Canal, opened in 1917, Salmon Bay Terminal was confined to relatively small vessels, but was the focus of a developing fishing fleet. Once the area was platted and incorporated it quickly attracted settlers and industries desiring or dependent upon access to Puget Sound. The timber industry was the first to develop, due to the need to clear land as well as the value of the timber that was available. By the end of the 1890s Ballard was a well established community with the world's largest shingle manufacturing industry, as well as developing boat building and fishing industries. By 1900 Ballard was the largest area of concentrated employment north of San Francisco.

Ballard effectively blocked the expansion of Seattle to the north, and court decisions had given Seattle control over Ballard's fresh water supply, with the result that Ballard became part of Seattle in 1907. At that time the community had 17 shingle mills, 3 banks, 3 saw mills, 3 iron foundries, 3 shipyards, and approximately 300 wholesale and retail establishments. The Scandinavian identity of Ballard developed at or somewhat before this time. In 1910, first and second generation Scandinavian-Americans accounted for 34 percent of Ballard's population, and almost half of Ballard's population was foreign-born. Currently, less than 12 percent of the population is of Scandinavian descent, but the cultural association remains pervasive.

Ballard's economy continued to develop and diversify, but remained fundamentally dependent on natural resources, and especially timber and fishing. In 1930 the *Seattle Weekly News* reported that 200 of the 300 schooners of the North Pacific halibut fleet were home ported in Ballard, demonstrating not only the centrality of Ballard but the long-term importance of distant water fisheries to Seattle fishermen. In 1936 the Port of Seattle built a new wharf at the Salmon Bay terminal, and in 1937 a large net and gear warehouse was scheduled for construction there. Over the years, Seattle-based vessels were central to the evolution of a number of North Pacific fisheries.

Thus in some ways Ballard is considered a 'fishing community within' Seattle. While this has historically been the case, when examined with specific respect to the Alaska groundfish fishery, the area cannot cleanly be considered a 'village within a city.' While there is a concentration of multigenerational fishing families within the area, the 'industrialization' of the Alaska groundfish fishery has tended to disperse the ties and relationships of the fishery. While support service businesses remain localized to a degree (as discussed in another section below), there would not appear to be a continuity of residential location that is applicable to the Alaska groundfish fishery that is consistent with, for example, the historic halibut fishery. This is due to the many changes within the cluster of individual species fisheries that make up the overall Alaska groundfish fishery, and particularly the relatively recent development of one of the more dominant components of the fishery, the pollock fishery. In summary then, this 'community within the community' issue is not straightforward due to the complex nature of historical ties, continuity of fishing support sector location through time, changes in the technology and methods of fishing, and industrialization of the fishery. Clearly, Seattle represents a different pattern of co-location of residence and industry with respect to the Alaska groundfish fishery than that seen in the relevant Alaska communities.

General Community Links

The focus of the analysis in this section is the contribution of the Alaska groundfish fishery to Seattle. This section will examine the issue from the 'other side of the equation' - from the community 'side' of the sector-community links (and on a topical rather than a geographic focus). Unfortunately, most of the information available does not facilitate focusing on this issue with a fine resolution. Different sources address different partial aspects of this comprehensive question. Some discuss different scales of detail - local versus distant fisheries, groundfish versus other fisheries (crab, salmon, and so on), or fishing as a whole versus other maritime activity (shipping, for example). Some discuss different components of commercial fishing activity - harvest versus production, or one particular type of operation versus all others. Some concentrated on more confined, or more broadly regional, geographical areas. By collecting some of this material and piecing it together, however, some sort of understanding of the overall contribution of commercial fishing to Seattle should be possible.

Natural Resource Consultants (NRC 1986, 1999) have compiled quite comprehensive accounts of commercial fishing activity by the Seattle and Washington State fleet. They provide a brief historical narrative on the development of the various fisheries and then a more detailed summary of the status of fish stocks and historical harvest information. In 1986, the estimated ex-vessel value of the grand total of all seafood taken from local waters by Washington's local fleet was about $93 million (NRC 1986:18,19). Distant water fisheries, primarily in the Gulf of Alaska and the Bering Sea, yielded an estimated grand total of $290 million by 1,371 vessels with an aggregate crew of 6,088 (NRC 1986:28,33). The joint- venture fleet accounted for about $80 million (ex-vessel) of this, with about 81 vessels and 405 crew, with an additional 11 catcher processors accounting for another $25 million (ex-vessel) and about 330 jobs. In terms of weight or volume, 92 percent of the seafood harvested by Washington fishermen came from Alaskan waters, and only 7 percent from local waters. In terms of ex-vessel value, the Alaskan harvest was worth $283 million and local harvest $110 million (and other harvest $8 million). None of these general statements has changed to any appreciable degree in 1998/99. Alaskan distant waters fisheries still provide 95 percent of the harvest for the Washington state fishing fleet (NRC 1999).

Most of the Alaskan catch was processed to some extent in Alaska by a processor based in Seattle (mobile facilities, or on shore facilities owned by Seattle-based entities). NCR states that there were about 130 seafood processing/wholesaling and 33 wholesale/cold storage companies in Washington in 1985, operating 250 primary processing and wholesale plants in Washington and 120 shore based or at sea in Alaska. Washington processing employment was 4,000 seasonally and in Alaska was 8,000, with half coming from Washington (NCR 1986:35-39).

A similar NRC study in 1988 found that Washington fishermen harvested about 80 percent (ex-vessel value) of their catch in distant waters, with 98 percent of that coming from Alaskan waters. About 72 Washington state vessels participated in the joint venture trawl fishery, directly employing about 360 people. There were also 43 catcher processors employing about 2,200 people, and 26 shore-based trawlers, employing about 130 people.

NRC's summary of the contribution of commercial fishing to Washington State's economy in 1988 is shown in Table 2.3.6-7. Local water harvest and processing accounted for about 19 percent of this, distant water fisheries and processing about 57 percent, and other processing activities by Washington companies for about 24 percent. Of the estimated 36,608 FTEs associated with this economic activity, 39 percent were attributed to the distant water fishing fleet and 40 percent to out-of-Washington-state processing. The $1.794 billion of direct and indirect benefits associated with the activities of the distant water fleet was also estimated to generate an additional $795 million of induced benefits. Similar numbers are difficult to generate from their 1999 report, which was written with a different focus, but the general relative relationships between the value of various fisheries for the fleet should remain much the same (except perhaps for crab, which may have declined in terms of economic return).

Table 2.3.6-7. Estimated Volume and Value of Washington Distant Water Commercial Fish Harvest, 1985 and 1988

Fishery	Harvest Volume (000 mt)		Harvest Value (million $)		Wholesale Value (million $)	
	1985	1988	1985	1988	1985	1988
Salmon	80.3	66.8	106.1	240.0	238.0	525.6
King and Tanner Crab	26.4	51.7	42.2	129.4	54.9	191.5
Longline Halibut and Blackcod	12.1	19.8	20.9	40.7	34.8	63.1
JV Trawl	720.8	802.8	78.3	120.4	78.3	120.4
Catcher Processor	111.6	546.0	24.6	103.7	61.6	334.1
Roe Herring	12.6	5.9	8.5	5.9	18.7	10.8
TOTAL	963.8	1493.0	280.6	640.1	486.3	1245.5

Note: Shore-based trawl landings are not included. Dungeness crab landings have been excluded. Volume and value estimates for salmon landings may be as much as 5 percent too high, but are retained for consistency with earlier work.
Source: NRC 1988:10

Table 2.3.6-8 provides summary information on economic contributions of local and distant water landings.

Table 2.3.6-8. Total Economic Contribution to the Washington State Commercial Fishing Industry in 1988

	(Millions of $ to Washington Economy)		
Locally landed	Landed Value	137	269
	Value added by processing	171	320
Subtotal		308	589
Distant Water	Landed Value	639	1,257
	Value added by processing	288	537
Subtotal		927	1,794
Non-State Landings: Washington State share of value added		405	756
TOTAL		1,640	3,139

Source: NRC 1988:16

Turning to relatively more recent data, Chase and Pascall (1996) focus on the importance of Alaska as a market for Seattle region (Puget Sound) produced goods and services. They do so by identifying particular industrial sectors that generate the bulk of these economic impacts, but they do not locate these industrial sectors in terms of particular geographic locations within the region. In their discussion of the fisheries sector, Chase and Pascall indicate that only a fraction of the regional economy is based on fishing and seafood processing industries, but that these industry sectors are concentrated in several communities and rely heavily on North Pacific (Alaskan) resources. The communities that they single out are Bellingham, Anacortes, and the Ballard neighborhood of Seattle. They say that Seattle is the major base for vessels for various fisheries – groundfish (catcher vessels, catcher processors, motherships), halibut, crab, salmon, and others. There are numerous secondary processing plants in the region, and about 60 percent of the seafood harvested and shipped south for processing moves through the Port of Tacoma (Chase and Pascall 1996:23).

The relative value of Alaskan groundfish (cod, pollock, sablefish, flounder, and other bottom fish aggregated together) for the Seattle fleet varies from year to year, but in 1994 was about 17 percent of the ex-vessel value of the Alaska/North Pacific commercial fishing harvest (Chase and Pascall 1996:26), which represented about 75 percent by harvest value, and 92 percent by weight, of all fish harvested by the Puget Sound fishing fleet (Chase and Pascall 1996:23 - citing ADF&G, NPFMC, NMFS).

Other relatively recent work (Martin O'Connell Associates 1994) indicates the wide range of activities that the Port of Seattle supports and the web of support services which commercial fishing helps support, but provides no measure of the contribution of the Alaska groundfish fishery to this support. Fishing activities are included in this study only to the extent that they are reflected in activities at Fishermen's Terminal. This may reflect some Bering Sea and Gulf of Alaska catcher vessel activity, but would greatly underestimate catcher processor, mothership, and secondary processing activities. By their estimation, fishing activity at Fishermen's Terminal in 1993 generated 4007 direct jobs (the majority of them crew positions), earning an average of $48,690 per direct job (total $195 million). Also, an additional 2,765 induced and indirect jobs were created. Fishing businesses also expended $145 million on local purchases of goods and services (Martin O'Connell Associates 1994:45-49). Again, this does not indicate the contribution of the Alaska groundfish fishery so much as it establishes that the local fishing/processing economy is densely developed. Also, if the estimates or models of vessel expenditures developed for operations using Fishermen's Terminal can be extrapolated to other vessels based in Seattle, an estimate of the contribution of the Alaska groundfish fishery may be possible. The estimate for annual expenditures in Seattle for a factory trawler using Fishermen's Terminal was about $2 million in 1993. Miller et al. (1994) indicate that for a model surimi vessel, 1993 operating expenditures other than for crew had been in the range of $10 million annually. These would have been distributed among all the places where the vessel fished, as well as its Seattle (or Tacoma) home port, but still indicates that there is a large contribution to the regional economy from the presence of these vessels. Each vessel also represents more than 100 direct jobs and a payroll of $3 to $5 million (Miller et al. 1994:1,23).

A summary profile of the Puget Sound maritime industry, which includes commercial fishing, is included in Economic Development Council of Seattle and King County 1995 (Appendix A:39-49). Pertinent information has been abstracted here. The list of included businesses is quite long and is a good indicator of how far indirect benefits can spread:

> . . . cargo shipping, tugs and barges, commercial fishing and supply; sip and boat building; cruise ships; vessel design and repair; fueling; moorage; the fabrication and sale of marine gear such as electronics; refrigeration, hydraulics, and propulsion equipment; the operation of marinas, dry docks and boat yards; services provided by customs and insurance brokers and shipping agents; and maritime professional services including admittedly law, marine surveying and naval architecture (Appendix A:39).

It was estimated that in 1992 there were 30,000 jobs in the maritime sector within the four-county region, including: 10,000 in commercial fishing, 7,000 in fish processing, 5,000 in marine recreation, and 3,900 in boat building and repair. Average wages were estimated at $24,000 for fish processors; $32,000 for ship and boat building and repair; and $50,000 to $80,000 for commercial fishing. The sector is one noted for providing entry-level positions for those with limited education and job skills, so that they can learn a high-wage job. Each job in this sector creates or supports one to two other jobs in the regional economy, and each dollar of sector output generates about one additional dollar in output from the rest of the economy.

Seattle offers the maritime sector, and the distant water fleet in particular, a "critical mass" of businesses that allows vessel owners and other buyers a competitive choice of goods and services. The same is true to a lesser extent of other regional ports, such as Tacoma. Efficient land transportation systems are also critical, and Seattle has good rail and truck linkages (and the Port of Seattle is working to improve them).

Although the maritime sector is an important one for the region, some of its components are currently experiencing some difficult times. Other regional communities (Anacortes, Bellingham, Port Townsend) as well as locations in Alaska (closer to the distant fishing waters) are working to develop port facilities to lure vessels so that they may gain the economic benefits of the associated support and supply business. Common sorts of projects are the improvement of shoreside access, building additional moorage, or work and storage capacity.

Natural Resource Consultants revised some of their earlier work and added additional analysis focused specifically on the contributions of inshore Washington State (but also Alaska) processing plants to the Washington State economy (NRC nd, 1997). The Washington inshore seafood processing industry purchased $859.5 million of raw material in 1991, $720.1 million from Alaska and $139.4 million from Washington waters. Salmon accounted for 46 percent of the total value of these purchases, while groundfish accounted for 19 percent. The total finished product from all this raw material was worth $2.1 billion ($1.8 billion from the Alaskan raw material). Salmon accounted for $780 million of the final product's value, while groundfish accounted for $482 million. "... inshore processors operating in Alaska and Washington account for more than 50 percent of the value of U.S. seafood exports" (NRC nd:4).

Expenditure patterns for Washington (and Washington-owned Alaskan) inshore plants were modeled in these NRC documents. Inshore plants expenditures average 46 percent for their raw materials (fish and shellfish), 16 percent for wages and benefits, 9 percent for processing materials, and 7 percent for tendering and other transportation costs. About 55 percent of these expenditures were made in Washington, 43 percent in Alaska, and 2 percent from other states. This is stated to include fish and shellfish purchased in Alaska from fishermen who home port in Washington (NRC nd:9), and economic benefits were produced from these expenditures in direct proportion to their magnitude.

The estimated total economic output from primary and secondary processing activities for all seafood to the Washington state economy in 1991 was calculated to be $1.865 billion. This was the result of three main factors:

- A substantial portion of expenditures for raw material (fish) in Alaska are made to fishermen whose home ports are in Washington.
- The majority of administrative and sales functions of processing companies are carried out in Washington.
- A major portion of support industries (equipment and packaging manufacturing) are located in Washington.

That is also the order of their significance in terms of contributions to economic benefits.

In addition, a substantial amount of secondary processing takes place in Washington. This produces additional benefits to that of primary processing of about 3,635 FTEs, earnings of $81 million, and indirect benefits of $287 million. The report also points out that the Washington inshore processing sector is the second highest value food product contributor to the Washington state economy, being topped only by the apple.

NRC updated this report in 1997 and reached essentially the same conclusions. In 1996 the Washington inshore seafood industry generated 32,837 FTEs (21,308 in Washington and 11,529 in Alaska) and $791 million of earnings impacts ($532 million in Washington and $259 million in Alaska). In terms of economic output, it contributed $1.9 billion to the Washington state economy and $1.2 billion to the state of Alaska economy (NRC 1997).

As noted earlier, these data underscore the interrelatedness of the economies of Alaska and Washington and, as has been seen through the sector profiles and the ties to particular communities, the ties between Seattle and specific Alaska communities. Companies based in Washington depend on Alaska fisheries for the great bulk of the raw materials processed in Washington, and residents of both states harvest Bering Sea resources. Also, as noted earlier, the corporate offices and sales outlets of the processing companies are located in Washington, as are most of the suppliers and support services for the industry. The following section looks at the localization of the fishing industry within the waterfront area of Seattle.

The Ballard Interbay Northend Manufacturing Industrial Center

With previous discussion as a regional context, an attempt to more closely associate a specific area of Seattle with commercial fishing (and other associated) activities now can be examined. One of the fundamental purposes for the establishment of the Ballard/Interbay/Northend Manufacturing and Industrial Center (BINMIC) Planning Committee was the recognition that this area provided a configuration of goods and services that supported the historical, industrial, and maritime character. At the same time, developmental regional dynamics are promoting changes within the BINMIC area which may threaten the continued vitality of its maritime orientation. Among other objectives, the BINMIC final plan states:

> The fishing and maritime industry depends upon the BINMIC as its primary Seattle home port. To maintain and preserve this vital sector of our economy, scarce waterfront industrial land shale be preserved for water-dependent industrial uses and adequate uplands parcels shall be provided to sufficiently accommodate marine-related services and industries (BINMIC Planning Committee 1998:6).

Previous documents produced for the NPFMC have discussed the BINMIC area, and some of this information is abstracted below, for the sake of completeness. It is not vital to this discussion, however, as the BINMIC planning document has remained in the form in which it was "finalized" and the City of Seattle does not collect comparable time series measures for the BINMIC area.

As previously noted, Ballard, in northwest Seattle, is commonly identified as the center of Seattle's fishing community. This may be true in an historical residential sense, but commercial fishing-related suppliers and offices are spread along both sides of Salmon Bay-Lake Washington Ship Canal, around Lake Union, along 15th Avenue West through Queen Anne, and then spread along the shores of Elliot Bay on both sides of Pier 91. Not surprisingly, this is also the rough outline of the formal BINMIC boundaries, which is bordered by the Ballard, Fremont, Queen Anne, Magnolia, and Interbay neighborhoods. It is defined so as to exclude most residential areas, but to include manufacturing, wholesale trade, and transportation-related businesses. It includes rail transportation, ocean and fresh-water freight facilities, fishing and tug terminals, moorage for commercial and recreational boats, warehouses, manufacturing and retail uses, and various port facilities (Terminal 86, Piers 90 and 91).

The BINMIC "Economic Analysis" document (Economic Consulting Services 1997) uses much of the same information as was reviewed above, in combination with an economic characterization of the BINMIC area, to establish that certain economic activities are especially important for that area. One of these activities is commercial fishing - although again the connection to the Alaska groundfish fishery in particular is somewhat difficult to establish concretely.

The BINMIC area is a relatively small one, but contributes disproportionately to the city and regional economy (Table 2.3.6-9). Again, those characteristics are part of what determined its borders. The BINMIC resident population is only 1,120 (1990 census), but there are 1,048 businesses in the area and 16,093 employees. The great majority of business firms are small - 85 percent have fewer than 26 employees, but accounted for only 30 percent of total BINMIC employment. Self-employed individuals (i.e. fishermen) are probably not included in these numbers. Employment by industry sector is displayed in Table 2.3.6-10.

Table 2.3.6-9. Relationship of Estimated BINMIC Population and Employment to Local, Regional, and State Population and Employment

Area	1990 Population	BINMIC as % of Total	1994 Employment	BINMIC as % of Total
BINMIC	1,120	100	16,093	100
City of Seattle	516,259	0	490,632	3
King County	1,507,319	0	912,038	2
Puget Sound	2,748,895	0	1,363,226	1
Washington State	4,866,692	0	2,212,594	1

Note: Percent of total reflects BINMIC's share of each area's total population and employment
Source: Economic Consulting Services 1997:14

Table 2.3.6-10. BINMIC Employment by Industry Sector

Industry Sector	Units	Employees	Percent of Total
Agriculture, Forestry, & Fishing	129	750	5
Mining & Construction	83	1169	7
Manufacturing	216	5322	33
Transportation & Utilities	35	1608	10
Wholesale Trade	178	2239	14
Retail Trade	121	1606	10
Finance, Insurance, & Real Estate	43	306	2
Services	233	2604	16
Government	10	489	3
TOTAL	1048	16093	100

Source: Economic Consulting Services 1997:29

An important indicator of the importance of commercial fishing and other maritime activities is the availability of commercial moorage. As of 1994, more than 50 percent of all commercial moorage available in Puget Sound was located in Seattle, and of that, more than 50 percent was in the BINMIC area (representing 30 percent of all commercial moorage in the Puget Sound area). Thus, the BINMIC area is clearly important in terms of being an area where vessels (especially larger commercial vessels) are concentrated. The Port of Seattle has concluded that only the ports of Olympia and Tacoma at present provide a significant source of moorage in Puget Sound outside of Seattle. Port Angeles may build additional capacity at some point in the future. Olympia's facility was rebuilt in 1988. Some older moorage constructed of timber piling prior to 1950 is nearing the end of its useful life and will need to be replaced. On the other hand, it is expected that much of the private old timber moorage will not be replaced, so that overall moorage capacity will decline. In the Seattle area, there has also been a dynamic whereby commercial moorage had been converted to recreational moorage. Within the BINMIC area, recreational moorage within the UI Shoreline is prohibited altogether, because of the importance of commercial activity and the danger of interference from recreational moorage. The Port has concluded that it is unlikely that any new private commercial moorage will be developed (because of cost and regulatory regime) and is examining their options (Port of Seattle 1994). As previously mentioned, the Port is pursuing a program of repairing its facilities where economically feasible (when it can be fairly well assured of a steady tenant).

The BINMIC area is fairly well "built out." The BINMIC area contains 971 acres, divided into 806 parcels with an average size of 1.043 acres, but a median size of .207 acres. Thus there are many small parcels. Public entities of one sort or another own 574.8 acres (59 percent). The Port of Seattle is the largest landowner with 166 acres, while the city has 109 acres. Private land holders own 396 acres, of which only 19.45 acres were classified as vacant - 19.27 acres in 81 parcels as vacant industrial land and .18 acres in 2 parcels as vacant commercial land. An additional 200.76 acres were classified as "underutilized," meaning that it had few buildings or other improvements on it. This classification does not mean that the land may not be in use in a fruitful way (for instance, storage of gear or other use that is not capital intensive).

Economic Consulting Services (1996) lists 85 companies that have a processing presence in Washington state (Appendix C). Of these, over half (47) are located in Seattle, with many in the surrounding communities (Bellevue, Kirkland, Redmond). Of these 47, at least 18 are located within the BINMIC, and the rest are located very near the boundaries of the BINMIC. Some examples of fairly large fishing entities that are located within BINMIC (as well as elsewhere) are Trident Seafoods, Icicle Seafoods, Ocean Beauty Seafoods, Peter Pan, Alaska Fresh Seafood, and NorQuest Seafoods. All demonstrate some degree of integration of various fishing industry enterprises.

The BINMIC area of Seattle displays the following characteristics which indicate its important economic roles:

- it is a significant component of, and plays a vital role in, the greater Seattle economy;
- it is integrated into local, regional, national, and multinational markets;
- it is a key port for trade with Alaskan and the West Coast, Pacific, and Alaska fishing industries - and the Alaskan fishery is especially significant;
- Salmon Bay, Ship Canal, and Ballard function as a small port of its own, but also support fishing and a wide range of other maritime activities - including recreation and tourist vessels and activities; and
- it is, and has been, an area of concentration of businesses, corporations, organizations, institutions, and agencies that participate in, regulate, supply, service, administer, and finance the fishing industry.

Summary: Seattle and AFA/Groundfish Socioeconomic Issues

As noted in the introduction to this section, Seattle is an analytic challenge, in terms of a socioeconomic description and a social impact assessment directly related to the Alaska groundfish fishery, because of its scale and diversity. Seattle is arguably more involved in the Alaska groundfish fishery than any other community, but from a comparative perspective, Seattle is arguably among the least involved of the communities considered. The sheer size of Seattle dilutes the overall impact of the Alaska groundfish fishery jobs and general economic contributions when viewed on a community scale, in contrast to Alaskan communities where such jobs and revenues are a much greater proportion of the total economic base of the community. This section has attempted to portray the complexities of the ties of the Alaska groundfish fishery to Seattle in terms of sectors, specific portions of the economy, and on a geographically localized basis.

All of the Alaska groundfish fishery sectors are tied to Seattle in one way or another, although the magnitude and nature of these ties varies considerably between sectors. It is clear that Seattle, as a community is, from a number of different perspectives encompassing specific sector structures and geographically attributable industrial areas, engaged in and dependent upon the Alaska groundfish fishery. To avoid losing the importance of the fishery in the 'noise' of the greater Seattle area, the AFA impacts will be described in terms of Alaska groundfish fishery industry sectors and their linkages to Seattle, as described in this section, rather than attempting an overall contextualization of the fishery and impact analysis within the metropolitan area.

Links to Specific Groundfishing Sectors

In addition to looking at port-focused and neighborhood-focused activities, a relevant way to examine the nature of Seattle's involvement with the Alaska groundfish fishery is to look at the nature of the links between Seattle as a community and the relevant individual sectors of the Alaska groundfish fishery. This type of information is specifically intended to provide a general level overview of dynamic relationships of Seattle to all of the relevant sectors, and discuss the nature and degree of variation between sectors. Thus, we will specifically address AFA-related effects on the processing sectors (onshore, mothership and catcher processors), as ownership and control of these sectors is concentrated in Seattle, as well as CVs. We will first discuss pre-AFA conditions and then AFA-related effects to date.

Inshore Processing

The Inshore/Offshore-3 analysis (NPFMC 1998) found that all of the larger floating processors with a continuity of participation in the Bering Sea pollock fishery during the 1990s were managed and operated out of Seattle. While moveable in theory, Alaska groundfish floating processors tend to operate in relatively fixed locations in Alaskan State waters, outside of incorporated city and organized Borough boundaries. Thus, they have minimal interaction with local Alaskan communities and can be characterized as true industrial enclaves. As noted in the inshore sector profile of the Groundfish SEIS, they employ relatively few Alaska residents, another potential measure of local community or at least state labor force interaction. This, along with the fact that these operations are supported out of the Seattle area (with some logistical support in Unalaska/Dutch Harbor, and marked reliance on air transportation links to that community), would appear to reinforce the overall ties of this subsector to Seattle as opposed to the Alaskan communities closer to their areas of operation.

As noted in earlier NPFMC documents, while the larger shoreplants which process Alaska groundfish are located in Alaska, all have multi-level ties to Seattle. All are administered from corporate headquarters in Seattle, which is the center for corporate and financial services. Thus, Seattle is the community where business decisions are made, or at least deliberated, for the Alaska shore plants (setting aside, as for other sectors, the complicating issue of degrees foreign ownership that vary by entity). This distinction should not be carried too far, however, as plant managers resident in the communities clearly have a role in corporate decision making, and executives based in Seattle also spend time in the Alaskan communities where their plants are located. Nonetheless, the role of 'Seattle' in the decision-making process, and the profound influence that process has in the Alaska shoreplant communities, is well recognized in the communities themselves.

In terms of the links between Seattle and the important inshore processing community of Unalaska/Dutch Harbor, specifically with the maturing of the fishing industry, the growth of local infrastructure and support services, and the overall changes in Unalaska/Dutch Harbor, the relationship between the communities has changed somewhat. It is no longer common to hear people express their recognition of the strong industry ties between Unalaska/Dutch Harbor and Seattle by saying that in some respects Unalaska is a 'suburb of Seattle,' as was not uncommon in the mid-1980s. The center-periphery relationship is perhaps more complex than ever for this sector. For the Bering Sea portion of the fishery, Seattle is the center of corporate operations; Unalaska/Dutch Harbor is the center of processing operations and the interdependencies are many and complex. A similar pattern applies to Kodiak for the Gulf of Alaska component of the fishery. Further, while there is some variation in this pattern with smaller inshore groundfish processors in other communities, plants in the other three of the top five Alaskan groundfish ports (Akutan, King Cove, and Sand Point) are all operated by firms managed out of Seattle.

In addition to being a decision-making and important administrative support community for the shoreplants, Seattle is also the location of some direct employment associated with the shore plant companies. While administrative shore plant sector employment in Seattle consists of relatively few jobs compared with positions at the plants themselves, the Seattle component has a greater proportion of jobs within the upper compensation range. Physical plants for secondary processing are located elsewhere in the Pacific Northwest, Alaska, other parts of the country, and overseas. Some have direct business operation connections with primary processors (both onshore and offshore).

The day-to-day management of the labor force of shore plants in Unalaska/Dutch Harbor tends to consist of year-round community residents (though these individuals were initially recruited from elsewhere). Managers of other shore plants tend to maintain homes outside of Alaska (many in the Seattle area), even though most spend most of their time in Alaska and may well qualify as Alaskan residents. The bulk of the labor force for shore plants consists of the maintenance/support and the processing crews (although the two may well overlap). The former tends to be employed on a more year-round basis, and thus tends to be more of an Alaska resident labor force. The latter tends to have a higher turnover and, with a significant percentage of the workforce still coming from the PNW and the greater Seattle area in particular, employment ties to Seattle are still important for Bering Sea and Gulf of Alaska community-based operations. As discussed in the 1998 Inshore/Offshore-3 document (NPFMC 1998), for the inshore pollock processing sector as a whole in 1996, non-Alaskan employees accounted for approximately 80 percent of the total workforce, but this figure varies widely by plant, with the range encompassing less than 10 percent to almost 40 percent of the workforce being Alaska residents of any one operation. A similar pattern is assumed to hold for all large groundfish plants. While it is important to recall that there are significant differences between 'residence' and the location of jobs, as discussed in earlier documents, there are impacts derived from the physical location of jobs more or less independent of the formal residency status of the workforce. While specific break-outs are not available, based on interviews with plant managers, it may be safely assumed that the bulk of the non-Alaska jobs come from the PNW region, and a disproportional number of those from Washington State and the greater Seattle area.

Interviews with processing personnel conducted for the 1994 SIA (NPFMC 1994) would indicate that a not insignificant portion of the wages paid to workers in Alaskan plants were used to help support extended families outside of the region. While quantitative data does not exist regarding this type of wage flow, it is one more indication (particularly given a general knowledge of the industry) of the ties between the shoreplants and Seattle (and the greater West Coast area).

In terms of support services for the shore plants, Seattle would appear to play a similar role for the shoreplant sector as it does for several of the other sectors, in nature if not in relative magnitude. Shoreplants do purchase goods and services in their 'host communities' but this is highly variable by plant and community. Among the major plant sites, Unalaska/Dutch Harbor and Kodiak have the highest degree of development of local support services, but it is still the case for these communities that materials and supplies needed for the operation of the plants are not manufactured locally, and a great deal of these are shipped out of the Seattle area, given that Seattle is both the headquarters of the individual companies and the nearest major port in the Lower-48.

In terms of expenditure patterns for the shore plant sector in relation to the Seattle area, there are several main areas to consider. First, the shore plants buy fish from the catcher vessel fleet and, as detailed in the sector profile for the catcher vessel fleet, the inshore delivering fleet is primarily based in Seattle and the Washington Inland Waters region. While there has been a considerable shift in recent years in ownership patterns with respect to shore plants as a sector, with processing entities coming to own and/or control a considerable percentage of their delivering fleets, interview data would suggest that there has not been a dramatic shift in employment patterns for crew members.

That is, while the locus of ownership may have changed, the patterns of employment have not appeared to do so, with most of the crew members and skippers coming out of the Seattle and Washington Inland Waters region and Oregon coastal areas. This being the case, crew compensation as a function of shore plant expenditures for Alaska groundfish disproportionately accrue to Seattle and the Pacific Northwest as a region. Second, expenditures for support services would appear to be primarily directed toward the Seattle/Pacific Northwest area. Third, corporate finances would appear to flow through Seattle, so the community would derive economic benefits from these transactions. In short, shoreplant expenditures are important to Seattle when examined on a sector basis. The localization of such expenditures within Seattle, however, is less clear.

In terms of fiscal impacts to Seattle, clearly the differences of scale between Seattle and the Alaska shoreplant communities make a great difference in relative significance of the sector. Beyond this, there are different types of fiscal inputs/taxation relationships between the companies and communities based on where the actual 'work' or 'industry' of processing takes place. In the shore plant communities themselves, the plants, as described in the Alaska communities discussion, provide a basic fiscal underpinning for local government in the form various business, property, sales, and fish taxes. Seattle, not being the 'industrial' center of the processing, has a different relationship to the industry.

Under the AFA, the inshore processing sector gained a significant amount of pollock quota, although actual rights to the quota are vested in CVs delivering to inshore processing plants. Also, the inshore sector is compensating for the offshore sector, the source of this "transferred" quota and has imposed a surcharge on all pollock processed inshore until the agreed upon sum is paid. Community effects, aside from those discussed in the Alaska regional and community discussions, appear to be absent in Seattle. It was not possible to trace the full ramifications of the larger corporate operations which spanned several regions and often involved participation in several (or all) sectors of the Alaskan groundfish fishery as well as many other west coast (groundfish and non-groundfish) fisheries. It is possible that the AFA has had some positive effect on the operations of the inshore processing plants operating in Seattle, but the scale of Seattle is such that these effects would not likely result in any effects on Seattle as a whole.

Motherships

Motherships, as a sector, have strong ties to the Seattle area. All three Bering Sea pollock mothership operations are headquartered in Seattle, and the motherships themselves are managed and supported principally out of Seattle. Hiring is done from Seattle and, while we have no statistical breakdown of the mothership labor force, many come from the Lower-48 and most are reportedly from the Pacific Northwest. All, and especially the mothership with a CDQ group partner and partial CDQ group ownership, have strong initiatives to hire Alaskans, and especially Alaskans from Western Alaska.

Given that the operations are headquartered in Seattle, the community acts as a corporate center for this industry sector, in terms of corporate and financial services support. There are a few administrative/office positions for each company in Seattle, but these account for less than 10 percent of the workforce in every case, even at the low end of operational range staffing aboard the vessels.

In terms of fiscal impacts to communities, like catcher processors, motherships are subject to the resource landing tax in Alaska, so they developed a different fiscal relationship to Alaska communities in the years just before the AFA as compared to earlier years. Individual operations varied the location and number of offloads, so there was variability between operations in this regard, but motherships in general appeared to offload fewer times in Alaskan communities than did catcher processors. At least one was reported to sometimes take a product directly to Japan, and all reported taking their 'last load' to a non-Alaskan port. These loads are also subject to the Alaska resource landing tax.

The catcher vessel fleet for motherships tends to have Seattle owners and to be maintained in the Seattle/Pacific northwest region. Some vessels have California or Alaska owners, or may have some connections with Oregon. Regardless of ownership or "home port" designation, many of these catcher vessels normally remain in Alaskan waters between the last pollock season of the year and the first pollock season of the following year, unless there is a compelling reason for them to go to Seattle. Those mothership catcher vessels with Pacific whiting permits have an incentive to go south after the first pollock season, and those from that region are most likely to have such permits. They will normally schedule maintenance calls in Seattle during this period. Mothership catcher vessels do participate in more fisheries than do motherships themselves itself, but Alaska groundfish (specifically pollock) is their most important fishery.

Mothership labor forces are predominately Seattle-based. Offices are maintained in Seattle, one in conjunction with its pollock CDQ partner and its parent onshore processing company. Pre-AFA and post-AFA work forces have been about the same size, ranging from 80 to 140 persons on the two smaller operations to 190 to 220 persons on the larger operation. An increasing number of these employees are reported to be from Western Alaska, especially on the CDQ partner vessel. The larger operation employs a crew of 40 to 60 people to maintain the vessel and thus work 6 to 7 months a year. Office staff work year-round, and the rest of the crew works only while the vessel is actively fishing or in transit (estimated at approximately 90 days).

All mothership operations report using Seattle as their primary logistical base. That is, they will leave Seattle with as many of the supplies that they will need for the fishing season as possible. All mothership operations contrasted this with the pattern of their catcher vessel fleet, which obtains most of its logistical support from Alaskan ports. The mothership reportedly does not carry supplies for its catcher vessel fleet (citing lack of storage capacity aboard their vessels). Motherships have a limited number of opportunities to take on additional supplies in Alaskan ports, since they normally do not have many offloads in Alaskan ports. Linkages to Alaskan communities are thus mostly through the resource landing tax paid on offloaded product and the activities of their catcher vessel fleet. Most mothership community linkages are with Seattle.

Interviews related to the effects of the AFA were conducted with representatives of all three motherships operations. Because of confidentiality considerations, we cannot be detailed in our discussion of individual operations, and because all three operations are unique certain details must be discussed in a relatively non-specific way. Two important areas of pre-AFA differences were in the area of ownership structure and access to fish. One of the processors was owned by its CV fleet, while the other two were more conventional corporate ownership with ownership interest in its CV fleet as well. Two had access only to the open access Alaskan fisheries, although one had a relatively long-term relationship with the Pacific Northwest tribal hake fishery. The third had a relatively long-term relationship with a CDQ group and thus had access to an additional source of pollock.

All mothership operators agreed that the AFA had some beneficial results, both overall and for their sector – it slowed down the fishery, reduced costs in some areas, increased utilization rates, resulted in increased proportions of finished product in relation to raw inputs, and increased the quality of products. However, gains in these areas in the mothership sector did not match those in other sectors, at least in part due to the relatively good competitive position of the mothership sector in the open access system. Further, the AFA did restrict the TAC available to the mothership sector and resulted in offshore CVs gaining a large degree of power in the CV-processor relationship. The AFA limited the pollock quota available to the mothership sector to 10 percent of the TAC. While this protected the motherships from competition from other sectors, it also limited it to a harvest below the historical average of the three mothership operations, in terms of percentage of the TAC. All three operations perceived this as a negative aspect of CV cooperatives. As compared to onshore CV cooperatives, where each shore plant's CVs have their own co-op, all mothership CVs belong to a common co-op. Thus, a mothership CV can transfer its deliveries from one mothership to another at the end of any contractual period, without the need to spend a year in an open access fishery or any other penalty. There has been some adjustment of the fleet for the motherships already, with two CVs from one of the operations joining the fleet of another. This, of course, affects the throughput of both of the involved operations. There is some concern expressed by at least one mothership operator that the movement of vessels from one mothership market to another in such a small sector has the potential of being disruptive. Those who express this view would like to see some mechanism that would allow motherships to attract CVs from shoreside co-ops and effectively increase the mothership share of the TAC. Other mothership operators point out that processing capacity limits of individual processors likely preclude additional realignment of quota within the sector co-op. They do not favor transfers between shoreside and mothership co-ops.

The ownership structure of mothership operations tended to change as a result of the AFA. Pre-AFA, one mothership was essentially owned by the CVs delivering to it, and the other two were privately owned with some mothership interest in delivering CVs. Post-AFA, only the first remains as before, and is sometimes characterized as being "preadapted" to AFA because of its ownership structure. Mothership operators pretty much agreed that the AFA shifted the power or leverage in the mothership sector to the CVs, especially with the ability of any CV to shift deliveries to another mothership with no adverse consequences. Both of the other motherships have had to divest of most of their CV interests, and one has sold a significant percentage of itself to the CVs that deliver to it (this includes its CDQ partner, to whom it sold most of its pre-AFA CV interest). They stated that this ownership change was made to assure access of the mothership to fish. It is possible that the CDQ group would have purchased part of the mothership operation without the passage of the AFA. However, neither mothership would have sold any CV interest, or sold partial ownership of the processing facility to delivering CVs, without the passage of the AFA.

As for other sectors, the AFA has resulted in longer fishing (and processing) seasons for the mothership sector. According information provided by the entities themselves, this lengthening has increased benefits resulting from the efficiencies gained with the slowdown, and some increased costs resulting from increases in trips and offloads. Because of internal quota shifts within the sector (CVs changing deliveries to motherships) and CDQ fish being available to one operation and not the other two, not all operations have an equally long season. All operations, in fact, report that overall expenses have increased significantly under the AFA, and that revenues, while increasing, have not kept pace with increased costs. The labor force must be kept at about the same size as before, but is employed for a longer period of time. The "C" and "D" season labor force may be somewhat reduced from pre-AFA conditions, but otherwise labor expenses have increased. Each employee may actually earn more in a year than before, but the rate of pay is about the same as the number of hours worked has also increased. The payments to CVs for fish have increased significantly. While mothership operators consider the magnitude of the increase as sensitive business information, the increase was significant enough to counter any gains in other operational areas. In fact, one mothership manager stated that under the pre-AFA open access system, inefficient as it was, his operation made money, whereas now it did not. His view is that expenses have increased, since operational seasons are longer and fish is not processed as quickly, but that prices for processed product have not increased that much. Of course, one person's expense is another person's revenue, and offshore CV operators no doubt consider the higher payments for fish they are receiving as quite positive. Because of time constraints we were not able to speak with any offshore CV operators on this point. It is significant that none of the three mothership operators stated that they were any more profitable under AFA conditions than under open access, and most reported being less profitable.

Mothership operators also remarked that the AFA had so far not resulted in a great deal of decapitalization of the fishery, except in the catcher processor sector. They noted no shoreside reduction in capacity, and one operator in fact stated that he had to rebuild a sunken vessel in order to gain access to its catch history, even though there was no intention for this vessel to fish. Rather, its quota was distributed among the other members of this mothership's fleet – but in this case, the AFA required the increased capitalization of the fishery. At least one mothership operator was also avid in his contention that the financing considerations in the AFA were detrimental to his, and probably other, sectors of the industry. In his view, the AFA has constructed a system whereby all the economic rent from the mothership sector is being extracted by the CVs, and nothing remains for reinvestment into the processing facilities. These are in decent shape now, but eventually will need some investment. Given the lack of profits to reinvest in the processing facility, they will need to look for outside financing, and this source could foresee little domestic interest or capability in this direction. Thus, the prohibition on foreign loans (as part of the ownership or "control" provisions) may also be an effect on the mothership sector in the future.

In summary, mothership operators seem to agree that AFA had some benefits for their industrial sector, but not necessarily for their individual operations. They are also quite emphatic that, in the absence of the AFA, it is likely that the Steller Sea lion RPAs would have devastated their sector. They realize that a return to open access would not be a return to a "status quo," but rather to a much more restricted and harsher version of pre-AFA conditions. Rather, their view seems to be that the specific conditions of the AFA (10 percent of the TAC, one CV co-op for the entire sector) make it likely that some restructuring of the sector is likely in the relatively near future, even though the mothership sector was reasonably stable for some time prior to the AFA. Sector participants state that the fish currently available to motherships could be adequately processed by two motherships and a reduced CV fleet. Thus, the AFA has some serious implications for the future of individual mothership operations. These are not likely to translate into community effects, and certainly not into effects on Seattle. Effects on CDQ group communities are the subject of another section of the report.

Catcher-Processor Sector

Historically, in terms of majority ownership as well as localization of corporate and support operations, the catcher-processor sector has a strong presence in Seattle and the Puget Sound area. While majority ownership remains highly concentrated in the area, changes have been occurring as a result of AFA and non-AFA factors. Alaska CDQ group ownership interest has broadened the geographic base of the sector with five of the six CDQ groups having significant, if minority ownership interest in the sector. Employment is predominately from Washington State, although in recent years there has been targeted hiring both through CDQ groups and through the Anchorage headquarters of the sector association. These vessels are typically not present in Alaska when not working, although there have been a number of exceptions for ship work in Alaskan ports. Even these vessels for the most part use Seattle or Pacific Northwest facilities for regular maintenance and support. This pattern has been somewhat modified by the investment of CDQ groups in the offshore sector. These ownership shifts have affected some aspects of the operations of these vessels, but not the centralization of management and support services for them in Seattle.

Catcher-processors harvest and process Alaska groundfish in Alaskan waters and, although Seattle based, have fiscal ties to Alaska through the payment of a resource landing tax on the product they offload in taxable jurisdiction areas. For example, as noted in the discussion of Alaskan communities, the resource landing tax is a significant source of income to the community of Unalaska/Dutch Harbor. Catcher processors will typically land their last load in Seattle, since many must make the trip anyway, but this varies somewhat by operation, and depends on a number of variables such as ultimate market, shipping costs, timing with respect to participation in other fisheries, and so on. Those catcher processors which participate in other fisheries (after pollock) producing fillets may tend to land more of their total pollock production in Alaska.

Catcher processor vessels are moored and maintained in the Seattle/Pacific Northwest area. The Port of Seattle has made a sizeable investment in renovating part of Pier 91, partly in response to the need of the largest catcher processor company for moorage and other workspace for its operations. The ability and desire of this company to sign a long-term lease enabled the Port of Seattle to finance these renovations, so there is a direct link seen between the Alaska groundfish fishery and port development. The Puget Sound area, and the Port of Seattle within the Puget Sound area, provides the majority of moorage available for the Alaska groundfish fishery fleet (and especially so for catcher processors).

Hiring for employment within the fleet occurs both in Alaska and the Lower-48. Turnover varies from year-to-year and is highly dependent on levels of compensation. Some people make careers of working on catcher processors, while others treat it as a seasonal activity or a "stage of life" activity. The one group of employees that was readily identifiable were those Alaskans hired from western Alaskan villages, primarily by fishing operations with CDQ partnerships. At least a limited number of individuals have relocated to Seattle, based on catcher processor employment, although interview data would indicate that they maintain contacts with relatives and return to the village at frequent intervals. Management and the vessel maintenance labor force, to the degree that such work does not require work in a shipyard, is clearly concentrated in Seattle. Interview information from the 1998 Inshore/Offshore-3 SIA (NPFMC 1998), derived from contact with five companies with 27 vessels, supported this general picture. Most employees are from Washington or other western states, with Seattle being the major (or only) point of hire. For those operations with CDQ partners, this was generally modified by an effort to incorporate CDQ group residents into the fishing (and other) operations through entry level positions and intern training programs.

Available information on expenditure patterns of the catcher processor fleet is fairly sketchy. Prior to the formation of co-ops, the catcher-processor sector fleet, on average, purchased 10 percent of its open-access pollock from the catcher vessel sector fleet, which is itself predominately Seattle based. Under the co-op system, however, there has been a fundamental change in this pattern, with additional catch capacity becoming much less important. Some drydock work has recently been done in Alaskan ports, specifically in Ketchikan, and in-season work also takes place in Alaska. Seattle is the only locale with a concentration of facilities that can provide these services for a large number of vessels, with the possibility for competitive bidding. Interviews with most firms for the 1998 Inshore/Offshore-3 SIA (NPFMC 1998) resulted largely in general level information; however the overall pattern was clear. Catcher processor operators consistently indicated that most expenditures were made in or through Seattle or the Puget Sound area - with in-season support from Alaskan sources as required. They were quick to point out that they needed to purchase large amounts of fuel in Unalaska/Dutch Harbor, paid a great amount of dock fees and resource landing taxes there, and in general provided a good deal of support for that community, both through fees and taxes and direct expenditures. At the same time, like all other businesses, their operations are managed to minimize expenses, in most cases entailing supplying the vessel as much as possible from Seattle.

The community economic/fiscal links of the catcher/processor sector can be summarized by the overall dichotomy or comparison of (Seattle) financial, most maintenance, and initial supply costs as opposed to (Alaskan and especially Unalaska) in-season operational costs. The majority of the labor force is in some way linked to Washington State or the Pacific Northwest. Thus, in terms of absolute value, the sector expends a great deal more, to a much wider economic network, in Seattle than it does in Alaska. The difference in the scales of the economies in Seattle and Alaska (especially for the community of Unalaska/Dutch Harbor), however, make the catcher processor sector economically important in Alaska in general, and the community of Unalaska/Dutch Harbor in particular. While also important in Seattle, the overall community effects of changes in the operations of this sector are less because of the sheer size of the Seattle economy. There may be identifiable effects on subsections of Seattle's economy, such as the Port, shipyards, or other services concentrated in Ballard.

The AFA certainly had direct and significant effects on the catcher processor sector. The AFA required a reduction in the catcher processor fleet, a reduction in the allocation of pollock quota to this reduced fleet (equal to that of the historical harvest of the removed vessels), and the payment of compensation to the owners of the vessels which were removed from the fleet. While all catcher processor operators we talked with would prefer to have more pollock available to them, the overall gains from other aspects of the AFA have more than offset these sector contractions. The end of the "race for fish" in the pollock fishery has resulted in longer fishing and processing seasons, decreased catch rates, an increased recovery rate, and an increase in quality. Individual operations have also been able to make adjustments to their facilities in order to produce a wider range of products so that they can adjust their production mix to better maximize their return in terms of higher priced products. For instance, many catcher vessels which were formerly only surimi vessels have installed fillet lines. This has reduced their daily "throughput" capacity, but such capacity was purely an adaptation to the open access system and no longer has economic utility in the pollock fishery as managed under the AFA. Finally, all CP operators were agreed that without the AFA co-ops that the Steller sea lion protection measures (fishing exclusion zones) would have resulted in "open access chaos" and severe economic repercussions for at least some of the sector's individual operations, as well as increasing waste and inefficiency. Indeed, the degree of to which the AFA has been economically beneficial to the CP sector, even in the presence of Steller sea lion RPAs, is an indicator of the even greater benefits that may have accrued had the Steller sea lion measures not been required.

Besides the reduction in the CP fleet, the AFA also required other ownership changes. To comply with the new American ownership standard, some owners turned to CDQ investors. One notable example of this was the Coastal Villages and Central Bering Sea CDQ group's investment in American Seafoods. (The ties between the offshore sector and CDQ groups clearly preceded AFA, as the BSAI pollock catcher-processor fleet has historically harvested more than 80 percent of the CDQ pollock allocation.) Other ownership changes (such as Trident Seafoods buying Tyson Foods, Inc.) are for the most part probably not AFA-related, although as with all private business decisions, AFA may have been a factor for some of these buyers and sellers. Information to address these questions for individual transactions was simply not available to us, although trends in ownership shifts related to the AFA are discussed elsewhere in this document. Aside from impacts to CDQ communities as discussed in that section of this document, there have been no community level social impacts resulting from these ownership shifts.

Employment recruitment patterns have not changed a great deal from pre-AFA operations, although the industry sector association has continued to increase the targeted hiring out of Anchorage that was begun pre-AFA. Total employment has of course decreased, but those still working are working more hours and thus earning a higher yearly total than before. This, of course, does not minimize the impact on individuals and families of the loss of employment for an estimated 1,500 to 2,000 individuals as an early and direct result of AFA. (It should be noted that the job losses were not an unforseen or unintended impact resulting from a management action - they were a known and direct result of the removal of the vessels from the fishery as specified by AFA.) Section 2.4.2 addresses employment impacts, but overall concludes that the effect of changes in employment is probably minimal, with those negatively affected being balanced by those positively affected. This is perhaps similar to what the Port of Seattle officials indicated about lower moorage receipts from catcher processors. While this is a measurable “loss” to the Port of Seattle, its root cause is the healthy economic activity of a working fishing fleet, which has many more (but intrinsically more difficult to measure) economic multiplier effects.

In terms of “supplemental” supplies of pollock, over and above the catcher processor co-op allocation, individual operations also contract for the lease of that quota which in pre-AFA years was delivered to CPs from CVs, as well as for CDQ pollock. In the pre-AFA fishery such categories of fish served special needs, and CDQ pollock especially were differentially harvested prior to and after the open access pollock fishery. Under AFA management the harvest of CDQ fish is essentially interspersed with the harvest of CP co-op pollock quota (but careful records of the harvest of CDQ fish must be maintained, separate from that of CP co-op pollock). There have not been any apparent changes in the relative value of CDQ fish, i.e., beyond changes in value likely to be attributable to changed market conditions (roe prices, etc.) that have had an impact on both CDQ and non-CDQ fish, but this is not entirely clear, and AFA could have played a role in the market conditions themselves. Whether such changes should be expected is an interesting economic argument, but one which only a few more years of experience under AFA management will resolve. The first year under AFA management (1999) some of the offshore CVs did harvest pollock and deliver it to CPs. By the second year (2000), all such offshore CV quota had been leased to CPs and was being harvested by the CPs. Again, this pollock is treated in the same way as all other pollock.

Another type of impact resulting from AFA and accruing to the catcher processor fleet is the area exclusion of vessels that did have some catch history in the Bering Sea, but not enough to qualify as AFA vessels. According to one firm that owned more than one of these vessels, loss of access to Bering Sea pollock reduces a vessel's ability to be successful over the long term due to decreased degrees of flexibility. In an example provided in public testimony, it was stated that limiting a trawler's access to a diversity of species across different geographies is inherently problematic when the sector is attempting to respond to PSC-driven fisheries closures as well as changing management and market conditions. The specific example provided noted that in 2000, the Gulf of Alaska trawl fleet was not able to target pollock and cod because of a court injunction; had those vessels been able to participate in the Bering Sea pollock fishery, the argument goes, it could have made up for loss of access to traditional grounds. AFA, however, limited the response options that would have otherwise been (and previously were) available. While there are not a large number of vessels in this situation, and this type of impact is not readily discernable at the community level of analysis, this type of impact is no doubt substantial at the level of the individual enterprise, especially for those who made significant investments to facilitate their participation in the fishery. Similarly, 'future exclusion' impacts resulting from a loss of future flexibility to vessels with no history at all in the Bering Sea is a type of impact at least on the theoretical level, changing the nature of the way both catcher processors and catcher vessels will be able to respond in the future, but this type of impact is not, of course, demonstrable with existing data and is inherent in the nature of limited access management systems.

Catcher Vessels

Aside from the ownership-related ties already discussed, many of the larger class groundfish catcher vessels have other ties to the greater Seattle area. Patterns for smaller vessels are much more variable and Alaska focused, as shown in the ownership information previously discussed. Most of the vessels in the larger classes of catcher vessels will have overhauls and other major work done in Seattle (or an alternate port in Washington, or Portland, Readsport, or Newport in Oregon), but may make the trip only every two years if they do not usually participate in PNW coast fisheries on a regular basis. This is also a tendency which seems to accompany shore plant acquisition of more pollock-specialized catcher vessels. This, and the decreasing fishing opportunities in Pacific coast fisheries, are also factors in this trend. Depending on the degree of shelter provided by moorage at the different plant locations, the pollock-focused catcher vessels may tend to tie up at Alaskan shore plants between seasons. Limited moorage for catcher vessels participating in the Alaska groundfish fishery exists in other Alaskan ports (Kodiak, Sand Point), but only to a very limited extent. Catcher vessels delivering to motherships or offshore tend to go to Seattle every year if they participate in the Pacific coast hake fishery. Otherwise, they also tend to stay in Alaskan waters when they do not need major shipyard work and will look for Alaskan fisheries to 'fill in' their annual harvest cycle. This trend has the effect of increasing the use of air flights to connect crew with vessels, so that an indirect effect is to increase the availability of and support for transportation links for various Alaskan fishery communities (a trend also seen to a much larger degree with the 'transient' components of the shore plant workforces).

No systematic information on the geographic origin of overall sector employment is available, but interview information developed for the Inshore/Offshore-3 SIA (NPFMC 1998) indicates that for the larger classes of catcher vessels, most of the crew is from the Washington/Oregon area, with a concentration in Seattle. This was true even though many catcher vessels apparently spent most of their time in Alaskan waters and may tie up in Alaskan ports more than in Washington or Oregon. This may reflect an historical situation, before Alaskan moorage was available and boats did return to Seattle every year, combined with continued Washington/Oregon ownership.

Catcher vessel expenditure patterns are difficult to generalize. For the smaller vessel classes that tend to be Alaskan in ownership, Alaska-based expenditures are the norm. For the larger classes, in-season operational expenditures are made in Alaskan ports. Catcher vessels tend to tie up in Alaskan waters when possible, but maintenance requiring shipyard work and overhauls tend to take place in or near the owner's physical residence, which in most cases is the Pacific Northwest. Crew tends to reflect the boat's "community of origin" as well, so that the overall revenue flow for most larger catcher vessels is oriented to the Washington/Oregon area, and for the Alaska groundfish fishery, more specifically to Washington. These economic effects are distributed more widely, and to a wider range of communities, than for the processing sectors considered above.

The effects of the AFA on CVs are also difficult to generalize, partially because they are a diverse group, partially because they have operated under AFA management for only one year, and partially because we talked with relatively few CV owners and skippers due to the explicit community focus of this effort. Much of the information below is based on information derived from interviews with CV organization representatives and a relatively few CV operators.

Perhaps one of the biggest changes noted was that introduced by the co-ops. These organizations not only institutionalized cooperation among a processors fleet members, but also encourage fleet members to maximize the economic operation of the processor and others in the fleet. Individual CV operators realize that, by working with the processor, they can also at least potentially organize their own fishing schedule so as to maximize their fishing opportunities which fit around the pollock season. This sense of cooperative effort has extended farther, into interco-op sideboard and bycatch management initiatives, which most people perceive as positive as well. There has also been a learning curve, and most co-ops seem to have come to the conclusion that to be effective, a co-op needs a dedicated manager.

Another aspect of the catcher vessel sector that has changed under AFA is that the level of cooperation between vessels owned by different entities and fishing for competing processors has increased through formal coordination mechanisms. Under the AFA, owners of AFA-endorsed catcher vessels established seven inshore sector co-ops and one mothership sector co-op in 2000. The vessel owners of the High Seas Catcher's Cooperative (HSCC) entered their second season as a co-op in 2000. As of January, 2000, owners of 101 vessels had entered into nine individual co-op agreements and one "umbrella" agreement, the Intercooperative Agreement. Included as an appendix to this document, the Intercooperative Agreement basically governs the relationship between the individual co-ops. The agreement provides the structure for the CV operations to work cooperatively to harvest the Bering Sea pollock allocations as well as the GOA and the BSAI sideboard species limits. Monitoring of the fishery is being done through the United Catcher Boats Association, and includes contracting out real-time catch recording to allow for extremely accurate assessment of levels of quota taken at any particular point in time. (The agreement does not cover the inshore sector vessels that chose to remain in the Bering Sea inshore open access pollock fishery.) This cooperative monitoring methodology has been cited as having had marked positive benefits in responding to Steller sea lion protection measures and the "inside/outside" area splits, allowing the fishery to continue under what would have been problematic enforcement conditions otherwise. This type of management approach can be directly attributed to the conditions fostered by AFA.

This agreement represents a shift in relationship of the catcher vessel fleet to the regulatory/resource environment in at least two fundamental ways. First, it has served as the mechanism to effectively extend the cooperative management structures for pollock promulgated under the AFA to sideboard species. Second, it represents an assumption of active compliance monitoring and enforcement by the participants in the fishery rather than having the participants rely more exclusively or directly federal oversight. In terms of community impacts of the AFA, such cooperation, per se, has not resulted in community level impacts, but it has meant that there have been changes within the sector spanning from the individual vessel level to the entire fleet, and from single species cooperation to multiple species and multiple region cooperation and coordination.

Other operational changes are that fishing can occur at a slower pace, and boats need not go out in marginal weather. Many people invoked a "safety benefits" argument, although there is of course no statistical basis for such statement as yet, due to the short length of time AFA management has been in effect. Another safety aspect is that fishing as a cooperative fleet encourages boats to share information on fishing conditions, and not to be economically disadvantaged by providing assistance to another fisherman in need. While in the past fishermen have repeatedly placed the safety of others over their own economic benefit, not having to make that tradeoff may also make the fishery a bit safer.

Most industry people seem to think that there has been less CV vessel and capitalization reduction than they had anticipated, but that the system has not operated for very long as yet. They also noted that there were a number of CV sales shortly after the AFA was passed, but that these have slowed. The sales noted were for the most part from private owners (or private parties in partnership with corporate processors in CVs) to corporate processor ownership. While on the surface this may appear to continue the industry trend of increased processor ownership of CVs, this trend is difficult to analyze. Clearly the easiest way for a shoreplant to gain predictable access to pollock is to buy CVs, but this also requires that they then manage and operate these vessels. The sales that occurred upon the passage of the AFA were either sales that had been in at least the talking stage for some time, or were cases of where the private owner and the processor owner simply wanted to part company. In an open access, pre-AFA pollock fishery, partial ownership by a processor had advantages to both sides. In an AFA pollock fishery, some of those advantages are not so clear for an independent boat owner, especially if a processor owns a significant number of CVs. For the most part, independent CV owners seem quite satisfied with the results of the AFA, as it was estimated that the AFA had increased the asset value of a CV by about a factor of two. Thus, while the AFA would seem to provide an incentive for processors to continue to acquire CVs, there is little evidence to suggest that the AFA has increased the tendency for sales of CVs from private ownership to processor ownership. The ownership shift effects question is beyond the scope of this section of the document, and the reader is referred to the section which deals specifically with examining that issue.

In terms of employment, employment effects of the AFA for CVs are difficult to determine. Section 2.4.2 indicates how speculative any statements in this regard would be. In addition to the considerations stated there, several CV representatives indicated a concern that processor ownership of CVs, and a perception that a premium need no longer be paid for a "high-liner" skipper and crew due to the quota for each CV, would result in the lowering of skipper and crew compensation on CVs. This was normally expressed as a change from crew shares to a wage or salary system. At this point, in the absence of any information, this is also only an area for speculation.

There are also individual or small groups of CVs that are at least potentially adversely affected by aspects of the AFA. Without belaboring the example, three boats that target Pacific cod have claimed to experience increased competition during the early part of their "normal" season from AFA boats that would in pre-AFA days would be engaged in the pollock fishery. These three boats, in pre-AFA times, used this period when they report that they had the cod grounds pretty much to themselves (with a few other non-AFA boats) to catch the major part of their cod harvest. Only later in the season, when the fishing was perhaps not as good, would boats from the pollock fleet join them on the grounds. With the implementation of AFA and the Pacific cod sideboards, these AFA pollock vessels can still only take their historical harvest in cod, but they are not restricted in the time period in which they take it. By these larger boats concentrating their effort early in the season, rather than later, the three primarily cod boats assert that their own catch in this period is reduced. This has required them to fish longer into the season, sometimes in conditions somewhat too harsh for their smaller vessels, and in conditions where CPUE is reduced in any event. Thus, they report, their expenses have increased, their harvest has decreased, and they have safety concerns about being forced to fish in winter weather conditions they would otherwise avoid. They also think that, in the absence of increased competition early in the season, they would have maintained their historical harvest of cod. Thus sideboard issues may result not only from the amount of fish harvested, but from the temporal and spatial distribution of that harvest.

As with other sectors, the AFA co-ops were cited as one mechanism that has enabled fishing to continue at anything close to the conditions of the past. That is, without AFA, the Steller sea lion protection issues would have had more serious and immediate adverse effects on a number of CVs. In this respect the AFA has probably had positive effects on communities in which CVs are home ported – although such effects would be difficult to demonstrate on a community scale.

Summary: Individual Sector and Community Impacts

In sum, community impacts on the AFA in Seattle can only be seen through the intersection of the individual sectors with portions of the community. While individual operations may have lost or gained as a result of AFA, no localized impacts are considered significant for the community of Seattle.

2.3.7 Oregon Coast Region

2.3.7.1 Regional Characterization

Overview. For the purposes of this analysis and following the Groundfish SEIS methodology, ORCO is defined as the area encompassing Tillamook County, Lincoln County, and Clatsop County. This area includes those ports and communities in Oregon with the most direct ties to the Alaska groundfish fishery in general and the Bering Sea pollock fishery in particular. ORCO has long had significant involvement in the Alaska groundfish fishery, from the development of the joint venture fishery through the present. The most visible aspect of this participation is the fleet of catcher vessels based in Oregon that participate in a variety of fisheries across the various Alaska regions. ORCO ports are important for local fisheries as well as the distant Alaska fisheries. Most of the fish landed in Oregon is delivered to Astoria or Newport, the county seats of Clatsop and Lincoln counties, respectively. Onshore facilities to process whiting (from Pacific Northwest waters) are concentrated in Newport.

Regional Economy. The ORCO economy is relatively diversified and relies heavily on the retail, service, and government sectors. Fish and timber are also significant components of the multi-industry “agriculture, forestry, fishing, and other” and “manufacturing” categories. Manufacturing, as measured by earnings, is similar in magnitude to the retail trade, service, and government sectors. As an aggregated category, however, it is not clear how much of this magnitude is due to fish-related activity. It is almost certain that none of this manufacturing activity is related to Alaska groundfish. There are no onshore plants in this region that process Alaska groundfish, and only one regionally owned longline catcher processor in the years 1992-1994 (none at present). Thus, none of this region's processing employment is attributable to Alaska groundfish.

Processing Ownership. There is no current ORCO ownership of Alaska groundfish processing capacity, and such ownership has been limited in the past. Two indirect linkages to the Alaska groundfish fishery can be described as follows:

- The expansion of the Pacific whiting industry has fostered the development of groundfish harvesting and processing in Oregon, especially in Newport. While the processing plants do not use Alaska fish, some vessels that fish for whiting also participate in Alaska groundfish fisheries, perhaps increasing the participation of Newport-based vessels in these fisheries. Working in Alaska has also given these fishers experience in harvesting a set TAC under a cooperative system that is industry supervised and managed. (In fact, the whiting fishery is often referred to as the model upon which the AFA co-ops were based, and the success of the whiting fishery under the co-op system was frequently cited during debates on the proposed reorganization of the North Pacific groundfish fisheries.)

- Consolidation of the seafood processing sector has increased ownership and other organizational linkages among Pacific Northwest and Alaska processors (and has increased the difficulty of attributing economic benefits from such ownership).

- Little systematic information is available on secondary processing. While some ORCO secondary processing plants may use some Alaska groundfish product at times, their primary orientation is toward the use of more locally obtained fish.

Catcher Vessel Ownership. For the Groundfish SEIS, a ranking of regional communities was performed, based on participation in the Alaska groundfish fishery by catcher vessels owned by residents of each community. On all measures, Newport is clearly the dominant ORCO community in terms of engagement with North Pacific groundfish fisheries in general, and the Bering Sea pollock fishery in particular. Several other ORCO communities rank relatively high in percentage of participating vessels owned by community residents. Residents of the Newport "port group" account for 61 percent of the participating vessels, 91 percent of the harvest by weight, and 87 percent of the harvest by value. Residents of the Astoria port group account for 19 percent of the participating vessels, 7 percent of the harvest by weight, and 8 percent or the harvest by value. The remaining percentage points are distributed throughout Oregon. Of the vessels owned by ORCO residents that participate in the Alaska groundfish fishery, trawlers predominate (26 of 45, or 58 percent), followed by pot vessels, longliners, and miscellaneous "other" vessels in about equal numbers (5, 7, and 7 respectively – about 11, 16, and 16 percent each). Trawlers are the most active and productive component of this fleet. They are based primarily in Newport or the nearby area.

In employment related to the Alaska groundfish fishery on regionally owned vessels, trawlers supplied the bulk of opportunities in 1998 (116.5 FTEs, or 67 percent of the total), with more than 50 percent on AFA-qualified (BS) vessels. Pot vessels provided 16 percent and longliners about 18 percent. Vessels owned by Oregon residents participate primarily in the BS and CG fisheries.

Levels of harvest have been slightly variable, but seem to represent a consistent level of effort, subject to the variable conditions of fishing seasons from year to year. In most years, the BS harvest attributable to Oregon-owned vessels is close to twice that of the corresponding CG harvest. In 1998, the poundage was about equal, however.

The value of Alaska groundfish harvested by vessels owned by ORCO residents essentially mirrors the harvest by weight, indicating that vessels in both the BS and the CG are probably harvesting the same mix of species and receiving similar prices (68 percent pollock and 27 percent cod by weight in 1998). The value of Alaska groundfish retained by ORCO-owned vessels is split more evenly. While pollock volume dominates, and pollock is still the single most valuable species in aggregate (45 percent of 1998 harvest value), Pacific cod is not far behind in value (43 percent of 1998 harvest value) because it has a higher value per unit weight than does pollock. The ARSO groundfish complex accounts for a full 8 percent of the 1998 harvest value for these Oregon-owned vessels (even though ARSO is only about 2 percent of the harvest by weight). Flatfish accounts for 3 percent of harvest value and 3 percent of harvest volume.

Catcher Vessel Diversity. Catcher vessels owned by ORCO residents have a specific dependence on the Alaska groundfish fishery, but generally participate in other Alaska fisheries. As a class, these vessels derive a clear majority of their Alaska ex-vessel value from groundfish activity. In 1998 groundfish accounted for almost two-thirds of the Alaska ex-vessel value accruing to this fleet. Crab make up about one-quarter of the ex-vessel value. About half of the groundfish vessels also participate in the halibut fishery, and about one of five participate in the salmon and crab fisheries. About one-third of the Oregon-owned groundfish catcher vessel fleet participates in Alaska fisheries other than groundfish, halibut, crab, or salmon.

Tables 2.3.7-1 through 2.3.7-4 summarize information on regional engagement with the groundfish fishery through 1999, the last year pre-AFA onshore co-ops.

Table 2.3.7-1. North Pacific Groundfish Fishery Participation Measures for the Oregon Coast Region by Year, 1991-1999

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999
Processor Employment and Payments to Labor									
Employment (Est. FTEs)	NA	6	6	6	0	0	0	0	0
Payments to Labor ($Millions)	0	1	1	1	0	0	0	0	0
Groundfish Processing by Regional Inshore Plants									
Reported Tons (Thousands)	0	0	0	0	0	0	0	0	0
Product (Thousands)	0	0	0	0	0	0	0	0	0
Utilization Rate (Percent)	0	0	0	0	0	0	0	0	0
Product Value ($Millions)	0	0	0	0	0	0	0	0	0
Value per Ton ($)	0	0	0	0	0	0	0	0	0
Processors Owned by Regional Residents									
No. of Processors Owned	1	1	3	2	1	0	0	0	0
Reported Tons (Thousands)	0	0	0	0	0	0	0	0	0
Wholesale Value ($Millions)	0	0	0	0	0	0	0	0	0
Catcher Vessels Owned by Regional Residents									
No. of Catcher Vessels	45	47	38	42	41	42	42	45	0
Employment (Persons)	192	202	166	187	179	173	172	171	0
Payments to Labor ($Millions)	6.5	9.2	5.9	5.9	8.4	7.1	8.6	6.4	0

[a] Value suppressed due to the confidentiality of the data.
NA = Not available

Table 2.3.7-2. North Pacific Groundfish Reported by Oregon Coast Inshore Plants by Species, 1999

	Total Reported Harvest by Species				
	FLAT	ARSO	PCOD	PLCK	Total
Reported Tons (Thousands)	0	0	0	0	0

Source: NMFS Blend Data, 1991-1999.

Table 2.3.7-3. Retained North Pacific Groundfish Harvest by Catcher Vessels Owned by Residents of the Oregon Coast Region by FMP Subarea, 1998

	Retained Harvest and Ex-Vessel Value by FMP Subarea					
	AI	BS	WG	CG	EG	Total
Retained Tons (Thousands)	0	40.1	1.1	35	0.1	76.3
Ex-Vessel Value ($Millions)	0	8.3	0.4	7	0.2	16

[a] Due to the confidentiality of the data presented, this value has been added to the CG value.

Table 2.3.7-4. Retained North Pacific Groundfish Harvest by Catcher Vessels Owned by Residents of the Oregon Coast Region by Species, 1998

	Retained Harvest and Ex-Vessel Value by Species				
	ARSO	FLAT	PCOD	PLCK	Total
Retained Tons (Thousands)	1.9	2	19.8	52.7	76.3
Ex-Vessel Value ($Millions)	1.2	0.5	6.8	7.6	16

No data on North Pacific groundfish processing analogous to that presented for the other regions is presented for the ORCO region, due to the fact that no Alaska groundfish processing is reported for this region. Table 2.3.7-5 provides information on volume and value of groundfish species harvested by catcher vessels owned by residents of the Oregon Coast region for the years 1995-2000. As can be seen, the value of pollock harvested increased from $8.4 million in 1998 to $11.7 million in 1999 and again to $14.7 million in 2000, although the volume was somewhat less in both 1999 and 2000 than it was in 1998. While overall value for all groundfish species harvested declined from $26.7 to $23.5 million from 1999 to 2000, the 2000 figure is still higher than for any of the years 1995-1998. Looking at the total for the various groundfish species categories, the decline in value from 1999 to 2000 is entirely attributable to Pacific cod, where a 34 percent decline in volume was accompanied by an approximately 60 percent decline in value. In terms of area fisheries, Oregon boats lost ground relative to 1999 for all BSAI species except flatfish, where fewer boats harvested substantially more fish. However, since fewer Oregon boats fished BSAI pollock in 1999 than in 2000, each boat did considerably better than the average Oregon boat in 1999. Oregon boats increased their share of the GOA pollock fishery, but had a reduced share in GOA Pacific cod and flatfish, and were about even in terms of the "other" category. The declines in Pacific cod harvest could be due to AFA sideboard effects, but there is certainly no way to establish any relationship at this time.

Table 2.3.7-5. Number of Boats and Retained Catch by Weight and Value by Species Category by Catcher Vessel Ownership by Region

Area	Item	1995	1996	1997	1998	1999	2000
ARSO							
BSAI	Boats	21	14	15	13	28	22
	Pounds	204,688	223,827	264,351	49,470	52,192	47,769
	Dollars	228,654	85,905	533,129	40,157	81,109	46,128
GOA	Boats	38	38	38	38	43	43
	Pounds	1,627,570	4,274,051	4,166,734	6,191,435	4,872,647	7,604,270
	Dollars	2,811,590	2,833,768	2,532,294	2,063,057	2,092,688	2,757,405
ARSO Sum of BOATS		59	52	53	51	71	65
ARSO Sum of TOTLBS		1,832,258	4,497,878	4,431,085	6,240,905	4,924,839	7,652,039
ARSO Sum of TOTDOL		3,040,244	2,919,673	3,065,423	2,103,214	2,173,797	2,803,533

Flatfish							
BSAI	Boats	19	14	15	12	25	20
	Pounds	3,471,026	227,827	185,236	133,315	198,068	411,788
	Dollars	228,694	6,425	7,328	1,978	8,287	47,615
GOA	Boats	19	11	18	23	21	19
	Pounds	2,928,226	3,769,898	7,827,427	6,233,127	4,870,456	8,170,255
	Dollars	466,737	695,825	1,053,594	766,988	490,930	939,573
FLATFISH Sum of BOATS		38	25	33	35	46	39
FLATFISH Sum of TOTLBS		6,399,252	3,997,725	8,012,663	6,366,442	5,068,524	8,582,043
FLATFISH Sum of TOTDOL		695,431	702,250	1,060,922	768,966	499,217	987,188
Pacific Cod							
BSAI	Boats	23	27	23	25	31	25
	Pounds	27,708,975	35,008,656	35,015,838	36,651,498	29,879,622	16,527,192
	Dollars	4,458,540	5,328,085	5,568,243	5,491,194	6,958,460	2,097,945
GOA	Boats	35	19	25	34	31	41
	Pounds	14,239,425	8,121,954	16,246,684	16,054,433	18,864,898	15,551,275
	Dollars	3,021,639	1,583,903	3,487,935	2,698,281	5,393,604	2,936,701
PACIFIC COD Sum of BOATS		58	46	48	59	62	66
PACIFIC COD Sum of TOTLBS		41,948,400	43,130,610	51,262,522	52,705,931	48,744,520	32,078,467
PACIFIC COD Sum of TOTDOL		7,480,179	6,911,988	9,056,178	8,189,475	12,352,064	5,034,646
Pollock							
BSAI	Boats	20	22	18	22	25	19
	Pounds	89,982,902	91,061,773	67,756,257	54,768,868	68,787,275	76,412,486
	Dollars	8,914,608	7,399,101	7,128,451	3,345,371	6,508,318	8,787,391
GOA	Boats	21	12	16	26	22	21
	Pounds	19,315,433	11,339,234	25,167,084	74,261,602	54,263,496	51,052,460
	Dollars	1,948,594	1,079,567	2,596,894	5,063,347	5,167,695	5,871,036
POLLOCK Sum of BOATS		41	34	34	48	47	40
POLLOCK Sum of TOTLBS		109,298,335	102,401,007	92,923,341	129,030,470	123,050,771	127,464,946
POLLOCK Sum of TOTDOL		10,863,202	8,478,668	9,725,345	8,408,718	11,676,013	14,658,427
All Groundfish Species							
Total Sum of BOATS		81	73	69	75	81	82
Total Sum of TOTLBS		159,478,245	154,027,220	156,629,611	194,343,748	181,788,654	175,777,495
Total Sum of TOTDOL		22,079,056	19,012,579	22,907,868	19,470,373	26,701,091	23,483,794

2.3.7.2 Regionally Important Groundfish Communities and AFA Impacts

In terms of community level social impacts of the AFA, no communities in the Oregon Coast region can be stated to be adversely impacted. As noted above, the engagement of Oregon coastal communities with the Alaska groundfish fishery in general, and the Bering Sea pollock fishery in particular, is concentrated among the catcher vessel sector. In turn, this is heavily concentrated among a few communities.

Radtke and Davis (1998a, 1998b, 1999a, 1999b) will be the main sources for the discussion that follows. Their overall description of the Oregon commercial fishing industry (1998a) indicates that for the state as a whole, fisheries income comprises only about 0.3 to 0.4 percent of all personal income, or about 0.5 to 0.6 percent of all earned income. For all coastal Oregon communities, fisheries income comprises about 5.2 percent of income from all sources, or 9.7 percent of earned income. For Coos Bay, the percentages are 2.1 and 3.9, for Astoria 8.8 and 14.7, and for Newport 10.6 and 20.4.

Using ex-vessel values, Radtke and Davis (1999a) conclude that Alaskan fisheries account for about 80 percent of the total revenues of Oregon boats participating in those fisheries. They then characterize those vessels into three groups. About 22 percent of Oregon boat owners live in the Astoria port area and are mostly gillnetters who have historically fished the Columbia River for salmon and now also participate in Bristol Bay and Young's Bay salmon fisheries. The Woodburn area has the second highest number of fishermen who fish in Alaska and have Oregon addresses, and the fishermen tend to be salmon purse seiners and halibut fishermen. Newport has about 12 percent of such addresses, but generates about 46 percent of the state's distant water fishery revenue, and participates primarily in groundfish fisheries. A fourth "miscellaneous" category is for boats from all over Oregon that are multi-species pot and longline boats (black cod, halibut, groundfish, and crab). Radtke and Davis estimate that the total economic impact of distant water fisheries on the Oregon economy was $88.7 million in personal income. Of this, $67.6 million was from Alaskan onshore and $1.9 million from Alaskan offshore fisheries. Other Pacific waters fisheries accounted for $1.3 million, and $17.8 million were from unknown areas (owners and/or crew with Oregon addresses, but no harvest records can be located for the vessel – bad data). Distant water fleet also generated $28.1 million from Oregon onshore and west coast offshore fisheries, for a total of $116.7 million. The rest of the Oregon fleet (fishing and landing Oregon fish) generated about $200 million.

Using numbers from Radtke and Davis 1998a, Table 2.3.7-6 presents the same data in terms of personal income (rather than ex-vessel value). The time series is longer, so that some trends may be more obvious, but the overall results are the same. Half of Newport's fisheries derived income comes from distant water fisheries, while only 20 percent of Astoria's does. Newport accounts for well over half (and as much as two-thirds) of the region's and state's earnings from the distant water fisheries, most of which is derived from Alaskan waters. Astoria accounts for perhaps 20 percent. Newport boats participate primarily in groundfish fisheries in Alaskan waters (although, of course, some boats do participate in other fisheries). Astoria boats tend to participate more in Alaskan salmon fisheries. Furthermore, Newport has been increasing its share of local Oregon fisheries as well, while Astoria has been stable or declining a bit. This probably reflects the increase in whiting harvest and processing in Newport and Newport's groundfish orientation (as well as the problems with Pacific Northwest salmon fisheries).

From the information available and reviewed here, it is not possible to determine whether the AFA has had significant effects upon Oregon CVs entities participating in the Alaskan groundfish fisheries. It appears likely that they have not, but no matter what the precise impact has been on individual entities, it is clear that there have been no significant community level impacts to individual or group of communities within the region.

Table 2.3.7-6. Personal Income Derived From Community Fleet Participation in Oregon Coast Region and Distant Water Fisheries

	Astoria/Columbia River			Newport			Coastal Communities			State of Oregon			Astoria/Columbia R. Area		Newport	
Year	OR + Dis	Dis	Dis %	OR + Dis	Dis	Dis %	OR + Dis	Dis	Dis %	OR + Dis	Dis	Dis %	% CC only	% CC Dis only	% CC only	% CC Dis only
1986	92.4	22.5	24%	82.1	45.5	55%	239.4	77.6	32%	343.2	110.6	32%	43%	29%	23%	59%
1987	124.6	20.5	16%	107.3	46.6	43%	337.5	78.9	23%	434.4	101.8	23%	40%	26%	23%	59%
1988	109.7	22.7	21%	100.8	45.3	45%	313.1	83.1	27%	400.2	95.6	24%	38%	27%	24%	55%
1989	84	12	14%	96.6	47.5	49%	303.2	74.2	24%	318.3	90.6	28%	31%	16%	21%	64%
1990	74	23.1	31%	94.2	63.9	68%	243.2	97	40%	305.2	116.8	38%	35%	24%	21%	66%
1991	51.7	14.2	27%	68.4	39.9	58%	167	62.7	38%	229.6	78.8	34%	36%	23%	27%	64%
1992	57.6	14.8	26%	91.7	41.9	46%	213.1	65.2	31%	254.6	76.2	30%	29%	23%	34%	64%
1993	56.1	14.6	26%	75.2	40.5	54%	180.9	63.2	35%	217.1	74.7	34%	35%	23%	29%	64%
1994	54.7	14.5	27%	83.7	42.8	51%	189.4	65.3	34%	225.3	79.1	35%	32%	22%	33%	66%
1995	62.9	14	22%	95.5	49.1	51%	208.5	71.1	34%	259.2	81.8	32%	36%	20%	34%	69%
1996	73.2	14.5	20%	98.5	47.6	48%	229.5	69.7	30%	281.4	80.9	29%	37%	21%	32%	68%
1997	68.4	14.2	21%	92.6	46.9	51%	207.5	68.5	33%	252	78.9	31%	39%	21%	33%	68%

"OR+Dis" = fisheries derived personal income for Oregon-owned vessels from Oregon caught, landed, and processed fish AND from distant water fisheries
"Dis" = ONLY fisheries derived personal income for Oregon-owned vessels from distant water (non-Oregon) fisheries
"Dis %" = ((Dis/(OR+Dis))*100
"% CC only" = places "OR+Dis" as a percentage of "Coastal Communities" "OR+Dis"
"% CC Dis only" = places "Dis" as a percentage of "Coastal Communities" "Dis"
"Dis" is shorthand for "Distant Water Fisheries"
"OR" is shorthand for "Oregon fisheries"
Source: Derived from Radtke and Davis 1998a, Tables 4 and 5

2.4 Business and Employment Practices

2.4.1 Business Practices

Business practices of the BSAI pollock fleets are largely defined in their cooperative agreements (Appendix II) as well and the inter-cooperative agreement. The cooperative agreements are attached as part of each of the cooperative reports submitted to the Council. Those documents define the terms each member of a cooperative agrees to abide by when operating their business. If a cooperative member does not fulfill the terms of their contract, they are subject to fines and sanctions imposed by the cooperative. If the violations reach a level such that the cooperative does not meet the regulatory requirements set out by NMFS, then they are also subject to either State or Federal sanctions. These sanctions can be very severe, including the loss of the offending parties right to participate in the BSAI pollock fishery.

The cooperative reports that are required each year do not include information on the costs incurred or revenues generated by the AFA fleet. Therefore, other means of collecting this information are needed before a through discussion of the financial impacts can be undertaken. Some data on ex-vessel and first wholesale prices are collected by the State of Alaska through their Commercial Operator's Annual Report (COAR). COAR data could be used to estimate prices. However, there is currently no systematic means of collecting cost data currently in place.

Table 2.4.1-1 provides a summary of the BSAI pollock allocations that would have been made to inshore cooperatives in 2000 given the current formulas used for determining the apportionments. The table reports the total official qualifying catch of the vessels in each cooperative, the percentage of the inshore catch it represents, and the interim annual allocation issued to that cooperative. These allocations are then divided among cooperative members based on a formula developed by the cooperative. NMFS does not monitor the catch distribution within cooperatives, they only ensure that the cooperative does not exceed its percentage of the overall inshore harvest.

The amounts reported in Table 2.4.1-1 are different from those allocated to the cooperatives in 2000. In 2000 the unclaimed[32] pollock history was assigned to the open access pool. During the June 2000 meeting the Council voted to change the allocation formula such that the unclaimed catch would be distributed among the inshore sector vessels in proportion to their catch history relative to other members of the inshore sector. Had this change been in place for 2000 it would have resulted in the open access pool being reduced from 6.145 percent of the inshore allocation to 2.229 percent, or a 19,000 mt decrease in the open access pool allocation. Those 19,000 mt would then be redistributed among the vessels comprising the inshore cooperatives. Given the revised allocation formula, only four vessels (there were approximately 14 vessels in 2000) opted to join the open access pool in 2001 (see Appendix I for cooperative affiliation and cooperative allocation percentages in 2001). Changes to the allocation formula and the reduction in the number of vessels in the open access pool resulted in only 0.39 percent of the inshore pollock allotment being allocated to open access vessels.

Table 2.4.1-1 is important because it reflects part of the business structure in the inshore sector. Members of the inshore sector have elected to form cooperatives centered around the processors where they deliver

[32]Unclaimed catch refers to pollock catch delivered to processors in the inshore sector during 1995-97 that was harvested by vessels that are not permitted to fish in the inshore sector. These catcher vessels may be operating as one of the seven catcher vessels in the catcher/processor sector, vessels that elected not to join the AFA, or vessels that landed some pollock but not enough to meet the inshore qualification criteria specified in the AFA.

pollock. Therefore, a separate cooperative was formed for each processor operating within the inshore sector. The cooperative's membership is comprised of the catcher vessels delivering to that processor. Members of the open access pool are free to deliver to the processor of their choice. Member of this fleet would then be allowed to join the cooperative associated with the processor that it delivered the majority of the BSAI pollock to the previous year.

It is important to note that the issue of cooperative structure in the inshore sector has been one of the most controversial issues the Council has faced in implementing the AFA. Some catcher vessel owners in the inshore sector wanted to change the cooperative structure so that catcher vessels would not be required to deliver 90 percent of their cooperative's BSAI pollock harvests to the processor associated with that cooperative. At the heart of the debate was whether the catcher vessels or processors in the inshore sector have or would have an unfair advantage in terms of market power depending on how the issue was resolved. The processors claimed that the catcher vessels would be able to negotiate a fair price under the cooperative structure outlined in the AFA. Catcher vessel owners felt that limiting who they can sell 90 percent of their catch to would result in lower ex-vessel prices than if the market was more competitive. Ultimately the Council elected to retain the structure set out in the AFA. Under that structure ex-vessel prices during the pollock roe season were quite high, as was reported earlier in this document. Prices during the non-roe season were close to levels experienced in the past. However, some members of the catcher vessel sector continue to be concerned that over the long term the current cooperative structure will have negative impacts on their operations. On the other hand, processors continue to worry that if the cooperative structure is changed market power will shift too far towards the catcher vessels and they will be harmed.

Information provided in Table 2.4.1-1 also shows that the Akutan Catcher Vessel Association (Trident) and the UniSea Fleet Cooperative (UniSea) receive the largest pollock allocation in the inshore sector. Those two cooperatives would have accounted for 54.5 percent of the inshore pollock quota that is allocated to the seven cooperatives and the open access pool in 2000, given the current allocation formula. That percentage dropped to about 53.7 percent in 2001. Once NMFS allocates pollock to each of the cooperatives, it is up to the cooperative's members to decide each vessel's allocation. NMFS is only concerned that the total pollock allocation to the cooperative is not exceeded.

NMFS does not allocate sideboard species by cooperative. A single sideboard cap for each species/area is determined for all[33] AFA catcher vessels. NMFS then monitors the overall caps to ensure that the catcher vessel fleet does not exceed its cap.

2.4.2 Employment

Employment in the catcher/processor sector decreased as a result of reducing the number of vessels participating the BSAI pollock fishery. Persons that were displaced from the retired vessels were helped in finding employment with other catcher/processor companies or were offered training to develop skills that would allow them to obtain another job. Information from discussions with members of the catcher/processor sector indicate that the number of jobs (work opportunities) that were lost in the

[33]This includes catcher vessels in the inshore, mothership, and catcher/processor sectors.

catcher/processor sector as a result of the AFA is probably about 1,500[34], given that nine catcher/processors were retired as part of the Act and six eligible catcher/processors were not used to fish pollock by their owners in the 1999 fall fisheries and in 2000. At approximately 100 employees per vessel that means that about 900 of the 1,500 jobs were lost as a result of the AFA retiring vessels. The approximately 3,325 jobs that do remain in the catcher/processor sector are likely to have more stable or increased wages. This also reflects a more stable income for the vessels, since the crew members are often paid based on a percentage of the vessel's revenues. Stable vessel incomes can be directly attributed to the cooperative structure permitted by the AFA, which allows companies to better plan their fishing year.

Table 2.4.1-1. Bering Sea Subarea Interim[1] Inshore Cooperative Allocations for 2000

Cooperative name and member vessels	Sum of member vessel's official catch histories[2]	Percentage of inshore sector allocation to each cooperative	Interim annual cooperative allocation
Akutan Catcher Vessel Association ALDEBARAN, ARCTIC I, ARCTIC VI, ARCTURUS, BLUE FOX, COLUMBIA, DOMINATOR, DONA LILIANA, DONA MARTITA, DONA PAULITA, EXODUS, FLYING CLOUD, GOLDEN DAWN, MAJESTY, PACIFIC VIKING, VIKING EXPLORER, GOLDEN PISCES, LESLIE LEE, MARCY J, MISS BERDIE, PEGASUS, PEGGIE JO, PERSEVERANCE, PREDATOR, RAVEN, ROYAL AMERICAN, SEEKER	258,508	29.436%	143,330
Arctic Enterprise Association ARCTIC III, ARCTIC IV, OCEAN ENTERPRISE, PACIFIC ENTERPRISE	50,008	5.694%	27,727
Northern Victor Fleet Cooperative NORDIC FURY, PACIFIC FURY, GOLDRUSH, EXCALIBUR II, HALF MOON BAY, SUNSET BAY, COMMODORE, STORM PETREL, POSEIDON, ROYAL ATLANTIC,	62,545	7.122%	34,678
Peter Pan Fleet Cooperative AMBER DAWN, AMERICAN BEAUTY, OCEANIC, OCEAN LEADER, WALTER N	6,584	0.750%	3,650
Unalaska Cooperative ALASKA ROSE, BERING ROSE, DESTINATION, GREAT PACIFIC, MESSIAH, MORNING STAR, MS AMY, PROGRESS, SEA WOLF, VANGUARD, WESTERN DAWN	106,714	12.151%	59,168
UniSea Fleet Cooperative ALSEA, AMERICAN EAGLE, ARCTIC WIND, ARGOSY, AURIGA, AURORA, DEFENDER, GUN-MAR, NORDIC STAR, PACIFIC MONARCH, SEADAWN, STARFISH, STARLITE, STARWARD	220,361	25.092%	122,179
Westward Fleet Cooperative A.J., ALASKAN COMMAND, ALYESKA, CAITLIN ANN, CHELSEA K, HICKORY WIND, FIERCE ALLEGIANCE, OCEAN HOPE 3, PACIFIC KNIGHT, PACIFIC PRINCE, VIKING, WESTWARD 1	153,917	17.526%	85,339
Open access AFA vessels	56,215	2.229%	10,852
Total inshore A/B season allocation	878,208	100%	486,922

[1]Tons of pollock are based on the 2000 BS subarea TAC allocations.
[2]Under 679.62(e)(1) the individual catch history for each vessel is equal to the vessel's best 2 of 3 years inshore pollock landings from 1995 through 1997 and includes landings to catcher/processors for vessels that made 500 or more mt of landings to catcher/processors from 1995 through 1997.

[34]This number is estimated based on a total of 15 vessels not participating during 2000 and each vessel employing about 100 persons. The At-sea Processor's Association web site indicates that the larger catcher/processors in their organization that are currently operating employ 137 persons on average.

It is difficult to predict the employment impacts that the AFA has had on the catcher vessel sector. Additional time is required to see how the catcher vessel owners will react over time to modifications made to the inshore AFA cooperative structure. Additional vessels will likely be removed from the fishery now that the Council has approved a motion that changes the definition of a qualified inshore vessel. Before this change, catcher vessels were qualified for the cooperative where they delivered the majority of their pollock the previous year. Vessels that did not participate in the BSAI pollock fishery were ineligible to join a cooperative. This forced vessel owners to fish their vessels in order to stay qualified to join a cooperative. The regulatory change allows vessels to remain qualified for the cooperative to which they delivered the majority of their BSAI pollock the most recent year they participated in the fishery. This allows vessel owners to retire a vessel without losing cooperatives fishing privileges for their pollock allocation. In other words, it allows their pollock allocation to be fished by other members of their cooperative.

Information contained in the High Seas Catchers' Cooperatives annual report indicates that all seven catcher vessels in that sector elected not to directly participate in harvesting BSAI pollock during the 2000 fishery. Two of those vessels were reported as having made no landings in any of the BSAI or GOA fisheries under the Authority of the North Pacific Council. The remaining five vessels did participate in other fisheries, so the harvesting crew jobs on those vessels were not eliminated completely. It is not possible to determine, based on the available information, if the same crew members would have been used in the pollock fishery as were employed by the vessel in the other fisheries they participated in during 2000. If the crews were historically comprised of different individuals, then the pollock crew may have been displaced as a result of the AFA. However, their wages (or a portion of their wages) were transferred to the crew members that worked onboard the vessels that harvested the pollock originally allocated to the two vessels that did not participate. Typically trawl catcher vessels have crews of 4 to 6. If we assume that 5 crew members were employed by these vessels and those vessels did not participate in fisheries outside the jurisdiction of the NPFMC, it means that 10 jobs were eliminated in the North Pacific.

There were five other vessels that leased all of their pollock in the inshore and mothership sectors. Some of those vessels participated in other fisheries and some were completely retired. It is likely that an additional 10 to 15 jobs were removed from the fishery.

Given the above discussion, there are still many changes that are occurring in the fisheries. It is likely that additional vessels will be retired in the future since inshore vessels no longer need to fish every year to maintain their cooperative eligibility. Therefore the long term changes in employment practices will require additional time before a better understanding can be obtained.

Currently little can be said regarding the in the inshore and mothership processing sectors. At least one of the inshore processors has closed a pollock processing line. The impact of this closure on employment is not yet known. The inshore sector's allocation of the TAC was increased under the AFA so these processors are processing a larger percentage of the BSAI pollock allocation than they were prior to passage of the Act. Therefore, the total number of hours required to process the pollock allocation should have increased, resulting in either more jobs or longer employment for the workers that held those jobs.

Employment in the support sector of the pollock fishery has likely decreased as a result of the AFA. Removing vessels from the fleet was done to reduce costs. Lowering costs to the fishing industry results in less money being spent in support of their fishing operations. These cost savings to fishermen are revenue reductions to the support industries, and since the support sectors are doing less business they may require fewer employees. Because cost data are currently not available, the reductions in expenditures cannot be provided, nor can estimates of the change in the number of jobs.

2.4.3 Ownership Changes

To obtain catcher vessel ownership information the NPFMC requested that catcher vessel owners holding AFA permits provide ownership information regarding their vessel(s). The survey was funded by ADF&G and developed and administered by the consulting firm Northern Economics. Initial attempts to gather the information were met with limited success. However, after being encouraged to supply the information by the ADF&G and the NPFMC, the industry has now complied with that request. The census mail-out survey has been completed by the owners of all 112 AFA catcher vessels.

The information collected from industry provides both a baseline from which future comparisons can be made as well as an understanding of the changes in ownership that have already occurred in the fleet since the AFA was implemented. Because the data are vessel specific they can be linked to catch data bases to determine harvests by vessel owners. The baseline information will be stored and updated as necessary. Having baseline data will allow the impacts of the AFA on ownership to be tracked over a longer period of time. The data that were collected will be used in this analysis to summarize the ownership changes that have already taken place in the fleet as a result of the AFA.

As stated earlier, catcher vessel owners have provided Northern Economics with ownership information on all 112 AFA catcher vessels. The data were collected between June and October of 2001, and can be used to determine ownership changes that have taken place from January 1999 through October 2001. Of the 112 vessels surveyed, 41 have reported ownership changes since the beginning of 1999[35]. Northern Economics has estimated[36] that 33 ownership changes were motivated by the new AFA regulations. The remaining eight ownership changes would have likely taken place with or without implementation of the AFA.

The 33 ownership changes that are being attributed to the AFA have been divided into three basic categories. Those categories are ownership changes as a result of changes in profitability of the vessels, changes in U.S. ownership requirements under the AFA, and individual harvest limits included in the AFA.

The first category is ownership changes that have occurred because the AFA appears to enhance the profitability of the qualified vessels. Nineteen transactions[37] were included in this category. Since the AFA qualified vessels and not persons for an allocation, persons wishing to enter the BSAI pollock fishery, or increase their participation in the fishery, must purchase a qualified vessel. This makes the qualified vessels more desirable because they are linked to pollock allocations which allow a person to

[35]The AFA went into effect in 1999. That was the first year of the catcher/processor cooperatives and the new pollock allocations. The inshore and mothership sectors first formed cooperatives in 2000. The new 75% U.S. ownership requirements were implemented in 2001.

[36]The questionnaire did not specifically ask if the ownership changes were a result of AFA regulations. Northern Economics has made educated guesses based on their understanding of the fishery and the fishery participants. Some of the transactions were easily placed in a category, others were less intuitive.

[37]Several transactions may have resulted from a single sale when multiple vessels were purchased at the same time.

participate in the BSAI pollock fishery with a guaranteed percentage of the harvest. Those harvest rights then allow the owner of the vessel to operate in a manner that can reduce costs and/or deliver a better quality product relative to harvests under a race for fish. Either of those outcomes would tend to increase the profitability of the vessel.

The second category is ownership changes that were made to meet the new 75% U.S. ownership provision included as a integral part of the AFA. Six ownership transactions were assigned to this category. These vessels would have met the 50% U.S. ownership requirement that was in place before the AFA was implemented, but not the 75% requirement imposed by the AFA. Therefore to continue operating in U.S. fisheries, the percentage of U.S. ownership had to be increased to a minimum of 75%. This does not include the 24 vessels that have applied for an exemption to the 75% ownership requirement under various treaties the U.S. has with other nations.

The third category is ownership entities owning vessels that are allocated an amount of pollock that would exceed the AFA harvest caps imposed on the BSAI pollock fleet. Eight ownership transactions were assigned to this category. These vessels would need to be sold to an entity that was within the bounds of the harvest caps, by an entity that would have exceeded the caps if they had harvested the quota assigned to the vessel. Therefore, so that all of the quota assigned to the vessels could be harvested, the owner had to divest themselves of one or more vessels.

Because transaction information is not available for years prior to the implementation of the AFA, we cannot provide a comparison of the number of transactions in other years. It was estimated that eight transactions would have taken place with or without the AFA. There may have also been other transactions that would have occurred without the AFA being in place. For example, it is conceivable that some other vessels would have been forced to sell for economic reasons if the fishery had not been rationalized and profitability increased. It is not possible to make an educated guess at the number of transfers that were averted.

2.5 **Community Development Quota Program** (Provided by Bryce Edgmon - State of Alaska CDQ Program Manager)

This section report will outline the impact of AFA on the CDQ program by providing aggregate information on economic development activities that have resulted either directly or indirectly from the passage of AFA. It should be noted that much of the information presented in this report represents the best estimates of the informal survey from each CDQ group and from aggregate information compiled by the State of Alaska from quarterly and annual CDQ reports required by regulation. Much of the information contained in the narrative will be presented in a qualitative form. There will also be several appendices with quantitative analysis to support the conclusion that AFA has benefitted the CDQ program.

The State of Alaska used the methodology of surveying the six CDQ groups by sending out a copy of the North Pacific Fishery Management Council (Council) letter to each group requesting a response to the nine points that were included in the Council's letter to the state, dated January 29, 2001 (included in Appendix IV). The CDQ staff also held phone conversations with representatives from each group to discuss any additional implications from AFA relative to each group.

Congress approved the AFA in 1998, and it has been in effect primarily for the two-year period of 1999 and 2000. In this short period there is no doubt that the impact on the Bering Sea/Aleutian Island (BSAI) groundfish industry has been profound. Among other benefits the creation of fisheries cooperatives have created a pollock fishery that is currently being conducted at a much more efficient pace. The result has been a pollock fishery that is much more cost-effective and productive for industry participants.

Along with other industry members, CDQ groups have benefitted from the shift away from the "race for fish" Olympic style fishery towards a more rationalized approach that is more stable, has less vessels, higher recovery rates, reduced fixed costs, and generally speaking has generated an increase in profit margins. Vessels are better able to avoid bad weather that is common in the Bering Sea and to concentrate on harvesting quota in areas that can produce more valuable harvests and higher value pollock roe. CDQ groups have benefitted by realizing higher returns on their CDQ pollock quota and on their equity investments, many of which were made in 1999 and 2000.

AFA has provided the opportunity for CDQ groups to invest in top performing offshore industry participants. By 2000, all six CDQ groups had acquired equity shares in offshore pollock catcher vessels. One group, Yukon Delta Fisheries Development Association has purchased an equity interest in the Golden Alaska LLC, which owns the Golden Alaska Mothership.

However, the primary benefit to the CDQ program from the AFA has been the increase in CDQ pollock quota from 7.5 percent to 10 percent of the BSAI Total Allowable Catch (TAC). Pollock quota represents over 80 percent of the CDQ program royalty stream. CDQ group revenues and assets have increased significantly in 1999 and 2000. Some of the credit can be attributed to improved market conditions, but much of the difference has been the result of increased quota to CDQ groups and a fishing environment that produces a better opportunity to harvest a higher value product.

Generally the most important component of any CDQ group/industry partnership is the royalty payment generated by the CDQ quota. Harvesting partners have been willing to pay handsomely for access to CDQ quota and have also shown a willingness to negotiate optimum employment and training opportunities for CDQ residents. However, the AFA requirement for 75 percent U.S. ownership of all vessel-owning entities by October 1, 2001, has also created the additional component of valuable political capital for CDQ groups. With the powerful Alaska congressional delegation being a driving force in national fisheries policy issues, industry members have sought out CDQ groups as business partners to share in the role of advocacy for an industry[38] that is constantly beset with environmental and regulatory concerns.

2.5.1 CDQ Program

The Council implemented the Western Alaska Community Development Program in December 1992. To quote from the 1999 National Research Council Report on the CDQ program:

> "*The CDQ program allocates a portion of the annual fish harvest of certain commercial species directly to coalitions of villages, which because of geographic isolation and*

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[38]Members of industry felt that attributing the broadening of relationships between the catcher/processor companies and CDQ groups to political reasons was unfair and untrue. They indicated that the business relations have developed because both parties are able to benefit financially, as well as because of changes in the U.S. ownership requirements.

dependence on subsistence lifestyles have had limited economic opportunities. The program is an innovative attempt to accomplish community development in rural coastal communities in western Alaska, and in many ways it appears to be succeeding. The CDQ program has fostered greater involvement of residents of western Alaska in the fishing industry and has brought both economic and social benefits."

The CDQ program is a federal fisheries program created under the U.S. Secretary of Commerce and managed by the National Marine Fisheries Service. The State of Alaska manages the program on an operational basis, overseeing the business activities of the CDQ groups.

2.5.2 Community Information

There are 65 western Alaska communities along the Bering Sea coastline that participate in the CDQ program. The communities are formed into regional coalitions known as "CDQ groups." The population of the CDQ region, according to the 2000 U.S. Census is 27,073. In 1990 it was 23,823.

2.5.3 CDQ Groups:

- Aleutian Pribilof Island Community Development Association (APICDA)
- Bristol Bay Economic Development Corporation (BBDEC)
- Central Bering Sea Fishermen's Association (CBSFA)
- Coastal Villages Region Fund (CVRF)
- Norton Sound Economic Development Corporation (NSEDC)
- Yukon Delta Fisheries Development Association (YDFDA)

2.5.4 Direct Impacts

The most obvious impact from AFA on the CDQ program was the increase in the annual share of Bering Sea Aleutian Island (BSAI) pollock quota. Beginning in January of 1999, the CDQ program received an increase in pollock quota from 7.5 percent to 10 percent of the BSAI Total Allowable Catch (TAC), which was allocated "off the top" as a directed fishing allowance to the program. The increase in approximately 33 percent of pollock quota to CDQ groups represented a significant increase in revenue to the groups. Please see Appendix V for further analysis.

However when surveyed, CDQ groups were not always able to separate benefits and programs generated as a result of AFA versus what came from the original allocation of 7.5 percent of the BSAI pollock TAC. With this understanding, the state felt it was necessary to provide the quantitative analysis in a summary form to demonstrate the overall increase in for-profit and non-profit activities to the CDQ program, as opposed to attempting to define the actual benefits that might have accrued to each group.

This difficulty was underscored by the fact that AFA, which went into effect in January 1999, has only existed for two years (discounting the first several months of 2001), and many CDQ programs such as education and training programs were already well established.

In terms of aggregate value, pollock CDQ royalties increased from approximately $20 million in 1998 to over $33 million in 2000. This was partially due to a higher overall pollock TAC and higher than normal pollock roe prices. In 1998 the average price for pollock CDQ quota was $236 per metric ton. In 2000, the average increased to over $292 per metric ton. All CDQ groups agreed that AFA played a role in higher pollock values primarily because of the shift away from the Olympic style fishery. Please see Appendix V for more details.

The increase of CDQ pollock quota from 7.5 percent to 10 percent has also increased the value of CDQ groups as business partners. This has enabled CDQ groups to have more bargaining power for negotiating royalty agreements and employment/training programs with industry partners. CDQ groups also expressed that AFA in certain instances has increased their bargaining leverage in royalty agreements for other species such as Pacific cod, sablefish and crab.

More than one group commented how AFA acted to depress per-metric ton royalty rates as related to price per pound. But simultaneously that AFA has created a positive effect relating to the aggregate sales value received.

> *"This is because AFA has helped increase recovery – a positive – but also has helped increase total supply to the market, thereby tending to lower prices."*

In relation to better market conditions and the rationalization of the fisheries brought on by AFA, another group commented that:

> *"The royalty rate for pollock changed for the 1999-2000 period to a fixed rate for surimi/block and an increase roe percentage in recognition of the increase roe value. This led to significantly improved royalties in 2000 with very high roe prices."*

2.5.5 U.S. Ownership Requirement

Another major impact of AFA is the requirement that virtually all vessel-owning entities be at least 75 percent owned and controlled by U.S. citizens by October 1, 2001. This requires that foreign-owned companies divest their majority ownership interests in vessels engaged in Bering Sea fisheries.
By virtue of this mandate, CDQ groups were given the opportunity to acquire equity interests in top performing seafood companies that otherwise may not have been available. The groups became sought after business partners for the Seattle and foreign dominated owners, not just because of their CDQ quota, but perhaps also for the political capital the groups brought as Alaskan partners. As industry members became interested in partnering with CDQ groups, financing arrangements that were not available beforehand also were extended to CDQ groups.

This opportunity eventually enabled CVRF and CBSFA to complete the purchase of ownership interests in American Seafoods L.P. That represents the greatest level of truly Alaskan investment in the BSAI pollock fishery. It also provided YDFDA with a better negotiating position in their purchase of the Golden Alaska, LLC. Clearly the U.S. Ownership requirements in AFA made these transactions much more attractive to American Seafoods and Golden Alaska, both of which were foreign owned and controlled.

By the end of 2000, five of the six CDQ groups had acquired ownership interests in the offshore catcher/processor sector. Two groups, (NSEDC) and (BBDEC) had already completed equity purchases in catcher processors before the enactment of AFA; as a note, both vessels were later determined to be AFA qualified. Please see Appendix VI for more details.

As an ancillary point, the state requires that a CDQ group demonstrate its investment into a catcher processor can succeed independent of CDQ quota. The intent of this requirement is to ensure that CDQ groups are protected from buying into vessels that are marginal in nature and end up tying up CDQ quota in order to make a profit.

2.5.6 Employment and Training Benefits

The employment and training benefits from AFA for CDQ groups have been both positive and negative. The reduction in the overall number of vessels in the BSAI, along with the corresponding increase in availability of trained seafood processors has decreased the employment opportunities for some CDQ groups. On the other hand, AFA has enabled CDQ groups to gain ownership in seafood companies and enjoy a stronger negotiating position to access more employment and training opportunities for local residents.

The number of western Alaska residents employed in CDQ-related jobs increased from 1,350 in 1998 to 1,834 in 2000. Wages earned by CDQ residents increased during the same period from $8.2 million to $12.5 million. These increases are the result of many factors that would be difficult to attribute solely to the implementation of AFA. Most of the increases are in the seafood-processing sector; however, many groups have also seen more local residents take advantage of education programs and become permanent employees within the management of the organization. One group commented:

> *"We are aware that the number of jobs in the catcher processor component has declined since the implementation of the AFA, but we are also aware of the heightened efforts being made by each of the companies to increase their percentage of Alaska resident employment. We believe this is only partially a result of the CDQ program, and mostly a result of the desire of the AFA catcher-processors to hire more Alaskans – which, is due in part, at least, from their desire to maintain the AFA."*

As a result of the slower paced pollock fishery, western Alaska residents have been able to rely on a more structured schedule, which allows residents to take jobs in the fishery but continue to participate in important traditional subsistence activities back home.

The slower pace of the pollock fishery has also allowed resident access to training opportunities onboard catcher vessels. The frenetic nature of the previous derby style fishery made it difficult to train new processing workers who frequently had to be trained while on the job.

The issue of safety is a big concern for the workforce in western Alaska. With AFA resulting in slower pollock fisheries and the ability for vessels to stand-down during bad weather, CDQ group recruiters are able to tout safer working conditions on offshore pollock vessels. This enables CDQ groups to more effectively recruit village residents, many of whom have never been outside of local river systems, to leave their communities and take advantage of potentially lucrative seafood processing and harvesting jobs.

CDQ groups agree that these safety considerations have worked to produce a higher retention rate of returning workers, and are also contributing to longer trips, less turnover, and more opportunities for consistent employment.

2.5.7 Education Opportunities:

In general AFA has increased revenues for CDQ groups, which has made more money available to fund various scholarship and endowment funds. Several of the groups invest a percentage of royalty earnings in their scholarship and education funds. Groups have seen their contributions to education funds rise simply by having more revenue available to their organizations.

Most groups did not have direct statistics to substantiate the exact number, but all agreed that AFA has played a positive role in increasing educational and training opportunities for local residents. CDQ groups showed 1,177 people trained in 1998 and 1,128 trained in 2000. Training expenditures increased from $1.4 million in 1998 to $1.47 million in 2000. See Appendix VII for more details.

2.5.8 Increased Cost of Pollock Catcher Vessels

The groups all mentioned that the cooperative structure has made it more expensive for all investors, including CDQ groups, to purchase equity in pollock companies. Because the cooperative structure has created fishing rights and reduced the number of vessels participating in the pollock fishery, it has become more expensive for CDQ groups to become investors. One group commented that the success of AFA, and the subsequent rationalization of the fisheries could have the effect of creating similar regulatory programs, in other fisheries beyond pollock, and that this possibility has already created increased prices for potential investors. Groups also commented that AFA has engendered more uncertainty in terms of asset valuation in the offshore sector, including the value of licenses.

2.5.9 Community Based Fisheries Development

All CDQ groups surveyed indicated that the increase in CDQ pollock quota from 7.5 percent to 10 percent of the BSAI TAC has made more funds available for in-region fisheries development. CDQ groups have or are in the process of building docks, harbors, shoreside seafood processing facilities, sportfishing lodges, halibut buying stations, etc. Many of these projects were underway before AFA and likely would have occurred whether AFA had been implemented or not. Some projects have benefitted from the extra revenue produced by the increase in CDQ pollock quota.

According to the Aleutians East Borough, in part because of AFA and the increased quota to the onshore sector, Akutan has seen an increase in contributions to the local tax base from the Trident Seafood plant, which processes pollock and other species within Akutan city limits. The deliberate pace of the pollock-fishing activity has also acted to spread out the financial benefits from Akutan's Trident facility more evenly throughout the year.

APICDA commented:

We are concerned, however, that the AFA as currently constructed will make it difficult for Bering Pacific Seafoods in False Pass or the proposed processing facility in St. George to process pollock if that is determined to be an economically feasible and desirable activity. Neither facility currently requires or will require pollock, but diversity is important in making a facility work. Additionally, both facilities will be competing with AFA "closed class" companies in the region: therefore, it is necessary for both companies to be able to compete on an equal footing."

2.5.10 Fishery Conservation

Bycatch rates and discard rates, among other environmental issues, are important to the future of the CDQ program. According to the groups, the AFA has greatly improved the performance in these areas, particularly in the harvest of CDQ fisheries. The ability to combine CDQ pollock fishing with cooperative fishing has provided CDQ groups more flexibility in harvesting CDQ quota and to manage bycatch of other species. One group commented that:

> *"Salmon bycatch rate in all sectors of the BSAI pollock fishery has decreased by more than 50 percent in the two years since the implementation of AFA."*

Several groups observed that CDQ fisheries are among the most efficient in the BSAI with respect to the low level of discards.

2.5.11 Summary

In the two years since the implementation of AFA it is obvious that the CDQ program has been a beneficiary of the wholesale changes brought about by the Act. In the same measure, it is difficult to quantify in a precise manner how groups have benefitted beyond attributing a range of benefits to an increase in pollock quota from 7.5 percent to 10 percent of the TAC and to the rationalization of the fishery.

Pollock is the most important species of the CDQ program, comprising more than 80 percent of the overall royalty stream. In 1999 and 2000, CDQ revenues and assets spiked upwards and the trend is continuing into 2001. Clearly much of this is a result of the increase in pollock quota and more productive harvesting methods brought about by AFA.

However, the overall mission of the CDQ program remains one of empowering residents of western Alaska through the creation of ongoing in-region fisheries-related economies, which in theory will enable communities to become self-sufficient. CDQ groups have worked hard to meet the program's mission through a variety of means, including the establishment of education and employment programs designed to benefit as many residents as possible. It is accurate to point to the many increased benefits having a direct relationship to the increase in quota from AFA. However, in the same instance, many of these programs were underway before AFA and were already providing benefits for western Alaska residents.

In this report, the state has chosen to illustrate the benefits as a whole and not separate benefits that could be directly associated with the passage of AFA. Each CDQ group returned the state's survey with comments describing how AFA clearly has provided tangible benefits for the program as a whole, and to the individual groups, but that it is problematic for them to separate the benefits to provide quantitative analysis. Due to the confidential nature of the survey information, the state did not include the individual survey results with the attachments. All analysis is provided in an aggregate format to avoid any conflict with the release of information that might be considered proprietary.

2.6 Fisheries Outside the Authority of the North Pacific Fishery Management Council

Primary fisheries outside the authority of the North Pacific Council fall into two general categories. The first are fisheries under the management authority of the State of Alaska. These are fisheries such as salmon and herring. The second category is fisheries off the Pacific Coast that are under the authority of the Pacific Fishery Management Council (PFMC).

2.6.1 State Fisheries

AFA vessels typically do not participate in harvesting species managed by the State except for crab and scallops . Crab sideboards were discussed earlier in this document in terms of the number of AFA vessels allowed to participate and the percent of the crab Guideline Harvest Level they may harvest. Only one AFA catcher vessel is allowed to participate in the scallop fishery, and its harvest of scallops is capped under the sideboard program. It is also interesting to note that the scallop fishery has formed a cooperative. They are currently using that cooperative structure to determine how much of the available scallop allotment each member can harvest. The majority of the remaining catcher vessel fleet does not participate in any of the State fisheries. The possible exceptions are the smallest catcher vessels in the AFA fleet. These vessels are often owned by Alaska residents. Vessels in this category may participate in some salmon or herring fisheries.

2.6.2 Pacific Coast Fisheries

The (Pacific Fishery Management Council) PFMC issued a Federal Register notice[39] of a September 16, 1999 control date. The control date was passed by a unanimous vote of the Council, and it was intended to notify AFA vessels that they may be subject to regulations that do not currently exist and that their catch after September 16, 1999 may not be counted towards the qualification criteria necessary for the new fishing regulations that may be enacted. The control date was published to discourage AFA vessels from increasing effort in the Pacific Coast groundfish fisheries.

The Federal Register notice also signaled AFA vessels that the PFMC intends to begin development of regulations that would restrict participation of AFA vessels off the Pacific coast. These restrictions are proposed to apply to AFA vessels if, during the qualifying period of January 1, 1994 through September 16, 1999, the vessel: (1) did not harvest at least 50 mt of Pacific whiting in the mothership sector; (2) did not harvest at least 50 mt of Pacific whiting in the inshore-sector or; (3) did not land groundfish shoreside in the Pacific coast groundfish fishery (excluding fish landed in the Pacific whiting fishery).

A control date of June 29, 2000 was issued in the Federal Register[40] for AFA motherships and catcher/processors. Motherships were noticed that they may be required to meet specific participation thresholds in the 1998 or 1999 regular Pacific whiting fisheries to be allowed to participate in the future. For catcher/processors the criterion being considered is that vessels must have been licensed to harvest groundfish in 1997, 1998, or 1999 (through September 16). The Federal Register notice went on to indicate that no new motherships or catcher/processors have entered the Pacific coast groundfish fisheries since September 16, 1999. The intent of this notice was to discourage speculative entry by motherships and catcher/processors into the Pacific coast whiting fishery.

2.7 Other Issues

These are issues that are thought to be important results of the AFA, but did not fit well into any of the other categories that have been discussed. In general these are issues related to the management of Steller

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[39]Federal Register Notice of Proposed Rules, Vol. 64, No. 226, Wednesday, November 24, 1999

[40]Federal Register Notice of Proposed Rules, Vol. 65, No. 178, Wednesday, November 13, 2000

sea lions and the changes that are being proposed for other fisheries under the Councils's jurisdiction as a result of the passage of the AFA.

2.7.1 Interaction with Steller Sea Lion Regulations

Cooperatives have provided members of the BSAI pollock fleet a mechanism to work within the current Steller sea lion regulations. The impacts of the two programs are difficult to differentiate. However, it is often stated by members of industry that the gains resulting from the AFA help to balance the negative impacts the Steller sea lion management measures have had on their fishery. The impacts would have likely been greatest on the smaller vessels in the pollock fishery. They would have been forced to fish further offshore while competing with larger vessels. Owners of the smaller vessels often cite safety concerns as one of the primary problems that the AFA alleviated. Under the old management system, they would have been more likely to fish in bad weather conditions to harvest their share of the BSAI pollock TAC before the fishery was closed. Safety concerns could have been exacerbated by fishing further from a safe harbor in bad weather. Under the AFA, vessel owners and captains are not forced to fish in bad weather since their portion of the allocation will still be available when the weather improves.
Fishing under the Steller sea lion regulations will also likely cause fishing costs to increase. This is a result of fishing further from the processors and fishing over a longer period of time. Each of those results tend to increase the variable costs associated with operating a fishing vessel.

2.7.2 Rationalization of GOA Fisheries

Rationalizing the BSAI pollock fishery, through the AFA, has resulted in members of other industry sectors to pursue similar programs for their fisheries. Some of these programs are currently under development by the Council and committees formed by the Council to develop options to better manage those fisheries.

Participants in GOA fisheries have requested that the Council develop measures similar to the AFA for all of the Gulf fisheries. Other members of the Gulf fishing community are not convinced that the AFA structure is the correct model for their area and are proposing alternative measures. It is likely that the Council will be working with these groups to develop a rational management scheme for the Gulf fishermen in the near future.

2.7.3 Rationalization of Other BSAI Groundfish Fisheries

Other BSAI groundfish fisheries that are likely to move toward a more rational approach in the future are the Pacific cod and flatfish/Atka mackerel fleets. These fleets have been impacted by recent Steller sea lion management actions and would benefit from greater certainty in the fisheries.

Freezer longline vessels in the BSAI have been allocated their own portion of the fixed gear cod TAC. A follow-up amendment to that TAC allocation reduced the number of vessels authorized to harvest cod as a freezer longline vessel. With those tighter definitions of who can harvest cod from the freezer longline apportionment it is likely that they will develop a more rational management system in the future.

As stated earlier, the scallop fleet has implemented their own cooperative. This was done without going through the formal Council process. They were able to reach an agreement because of the limited number of scallop licenses that were issued, leaving a pool of participants in the fishery that were able to agree on the structure cooperative and the allocation of the scallop resource. Large numbers of participants in a fishery usually make it more difficult to reach consensus on these types of programs.

A fisherman that is not a member of the BSAI pollock fishery noted that the expectation of rationalizing other groundfish and crab fisheries have lead individuals to intensify the "race for fish" in those species with the hope of increasing their harvest shares. The increased harvest share is anticipated, by those participants, to translate into a larger allocation when the fishery is rationalized. It was also indicated that around Kodiak pollock fishermen were trawling closer to town which resulted in gear conflicts with halibut longline fishermen. He also noted that the trawlers were tangling the doors in their nets and bumping into each other in an attempt to harvest the GOA pollock resource faster. This person concluded that in some cases it would be better to notify industry that a fishery would not be "rationalized" in order to slow the rate at which fishermen are fishing.

Another vessel owner indicated that because of the economic gains made by AFA participants, a tend toward rationalization of more fisheries has occurred, even though similar economic gains in their fisheries may not be realized. They are also concerned that as the fisheries are carved into smaller and smaller pieces, stock fluctuations will have greater impacts on fishermen. The negative impacts would result because fishermen would have fewer opportunities to fish other species when their primary fisheries' biomass declines.

It has also been pointed out that it may make more sense to rationalize the PSC species instead of the target species. In many of the flatfish fisheries and the trawl and longline cod fisheries, it is often halibut bycatch that closes the fishery to directed fishing and not the TAC for target species. The proposers of this concept indicated that instead of developing a rationalization scheme that determines winners and losers, under PSC rationalization fishermen would be required to reduce bycatch in order to harvest a larger portion of the target species. Therefore, they felt that PSC rationalization would result in improved fishing practices.

2.7.4 Rationalization of the BSAI Crab Fisheries

With the support of Congress and the Council, members of the BSAI crab fleet have held several meetings to develop a long term rationalization program. The Council is currently working to develop an amendment package for management of the crab fishery. That package is focusing on an IFQ or co-op approach and is scheduled for initial review at the April 2002 Council meeting. This analysis would then be forwarded to Congress per provisions of the 2002 appropriations bill. Final action could then be taken in June 2002, assuming congressional authorization sometime in 2002, this program could then be forwarded for Secretarial review in late 2002. Information on the specifics of the program are available through the Council office.

2.7.5 Extension of the AFA

There has been some efforts to have the AFA, which sun-sets on December 31, 2004, extended by Congress. These individuals feel want the extension to provide more certainty so that sound, longer term business decisions can be made. Other individuals are concerned that if Congress does extend the AFA it will once again prevent their voice from being heard on the issue. These fishermen feel that it would be better for the Council to decide the AFA issue through the normal fishery management process, even though the Council process would likely take more time than Congressional action (though could still easily be done before the 2004 deadline).

3.0 Summary and Conclusions

The Council and NMFS have expended a great deal of time and effort implementing the AFA over the past two years. However, much of the information that is necessary to develop a complete report on the impacts of the AFA is not yet available. The Inshore and Mothership sectors have only been fishing under the new AFA structure since the start of the 2000 fisheries. Less than one complete year of data does not provided sufficient information to make informed judgements regarding the impacts of the AFA. The information available for the catcher/processor sector is slightly better, because they have been fishing under a cooperative structure since the beginning of the 1999 fishing season.

The AFA has caused substantial changes to the pollock fishery which by themselves would be difficult to completely understand. However, in addition to the AFA impacts, sweeping changes were made to the pollock fishery to provide protections for Steller sea lions. NMFS also implemented an Improved Retention/Improved Utilization amendment, that was developed by the Council, at the beginning of 1998, which impacted the BSAI pollock fleet. Sorting out the impacts caused by the AFA and these other regulations may never be possible. To the extent possible this report described the impacts resulting from passage of the AFA as they are currently understood.

The AFA has accomplished its goal of increasing the required US ownership percentage in vessels operating in U.S. fisheries, though some current vessel owners (owners of approximately 28 vessels) have been exempted from the increased ownership requirements. If the ownership of those vessels ever change they will be required to comply with the 75 percent U.S. ownership requirements. Other members of the North Pacific groundfish fishery that did not meet the new ownership standards have restructured their vessel's ownership to comply with the new regulations. In at least one case, restructuring the ownership of a company has allowed a CDQ group to become 26 percent owners of a large firm that operates several catcher/processors.

Fisheries in the North Pacific have undergone substantial changes as a result of the AFA. These changes have occurred as a result of limiting participation in the BSAI pollock fishery and closely regulating the activities of AFA vessels and processors in other fisheries.

Limiting the number of vessels and processors that can participate in the BSAI pollock fishery and granting vessels the rights to a set percentage of the BSAI TAC has allowed the participants to reduce excess fishing and processing capacity. Reductions in fishing capacity have occurred as vessels have transferred their pollock fishing right to other vessels. Some of these vessels have completely left the North Pacific fisheries. Others have simply reduced their participation in the pollock fishery while focusing their efforts on harvesting their sideboard caps or the Pacific whiting fishery. Both of these practices have reduced fishing effort and slowed the pace of the fishery, which has helped to improve the utilization of the BSAI pollock resource.

Protecting non-AFA fishermen and processors from increased competition caused when harvesting or processing capacity is transferred from the BSAI pollock fishery to other fisheries has been a primary concern outlined in the AFA. Implementing these protections has consumed a substantial amount of the Council's time over the past two years, and some of these protections are still being reviewed by the Council. Measures to protect members of the non-AFA fishing fleets have resulted in the implementation of harvesting and processing "sideboards". Harvesting sideboard caps are currently in place for all of the BSAI groundfish (excluding pollock) and crab species, and all GOA groundfish species. Sideboard caps limit the amount of a species the AFA fleet can harvest, but they do not guarantee them the right to catch that amount of fish. The AFA fleet must compete with the non-AFA fishermen for that catch, and if the TAC or PSC limit is reached before the AFA fleet catches their cap, then all sectors of the industry will be closed that are fishing on those allotments.

Some non-AFA catcher/processors continue to try and regain access to the BSAI pollock fishery. The owners of a small number of H&G catcher/processors that had limited history in the BSAI pollock fishery from 1996-98 contend that they have been financially harmed as a result of the AFA and that under the current AFA structure the NPFMC cannot remedy their situation. These individuals are seeking a revision to Section 208(e)(21) of the AFA. That section of the Act cannot be modified by the NPFMC or the Secretary of Commerce because of a prohibition against doing so included in Section 213(c) of the AFA.

Overall the AFA appears to have been successful in achieving its goals. The percentage of U.S. ownership in fishing vessels has increased and the BSAI pollock fishery appears to be operating more efficiently than before. Non-AFA fishermen and processors, in general, have been protected from adverse impacts which may have resulted from cooperatives. And the CDQ communities have been allocated 33 percent more pollock, which increases the revenue flows for these groups organized to improve the standard of living for residents of Coastal Western Alaska.

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APPENDIX I:

List of AFA Vessels and Cooperatives

Table 1: List of AFA Catcher Vessels and the Cooperatives they Belong to for the 2001 Fishing Year

		INSHORE	ENDORSEMENTS			-------- CRAB ENDORSEMENTS(2) ----------						BSAI	GOA
VESSEL NAME	USCG	CO-OP	C/P	MTH	INS	BBRK	STMBK	PRBK	AIRK	BAOT	BABT	P COD	GF
AMERICAN CHALLENGER	633219	N/A	Y	N	N	N	N	N	N	N	N	N	N
FORUM STAR	925863	N/A	Y	N	N	N	N	N	N	N	N	Y	N
MUIR MILACH	611524	N/A	Y	N	N	Y	N	N	N	N	N	N	N
NEAHKAHNIE	599534	N/A	Y	N	N	N	N	N	N	N	N	N	N
OCEAN HARVESTER	549892	N/A	Y	N	N	Y	N	N	N	Y	Y	N	N
SEA STORM	628959	N/A	Y	N	N	Y	N	N	N	N	N	N	N
TRACY ANNE	904859	N/A	Y	N	N	N	N	N	N	N	N	N	N
ALEUTIAN CHALLENGER	603820	N/A	N	Y	N	N	N	N	N	N	N	N	N
CALIFORNIA HORIZON	590758	N/A	N	Y	N	N	N	N	N	N	N	N	N
MISTY DAWN	926647	N/A	N	Y	N	N	N	N	N	N	N	N	N
POPADO II	536161	N/A	N	Y	N	N	N	N	N	N	N	N	N
VESTERAALEN	611642	N/A	N	Y	N	Y	N	N	N	N	Y	N	N
AJ	599164	WESTWARD	N	N	Y	Y	N	N	N	N	N	N	N
ALASKA ROSE	610984	UNALASKA	N	N	Y	N	N	N	N	N	N	N	N
ALASKAN COMMAND	599383	WESTWARD	N	N	Y	N	N	N	N	N	N	N	N
ALDEBARAN	664363	AKUTAN	N	N	Y	Y	N	N	N	N	Y	N	N
ALSEA	626517	UNISEA	N	N	Y	Y	N	N	N	Y	N	N	N
AMERICAN EAGLE	558605	UNISEA	N	N	Y	Y	N	N	N	Y	Y	N	N
ANITA J	560532	NORTHERN	N	N	Y	N	N	N	N	N	N	N	N
ARCTIC EXPLORER	936302	ARCTIC ENT	N	N	Y	N	N	N	N	N	N	N	N
ARCTIC WIND	608216	WESTWARD	N	N	Y	Y	Y	Y	N	Y	Y	N	N
ARCTURUS	655328	AKUTAN	N	N	Y	Y	N	N	N	N	Y	N	N
ARGOSY	611365	UNISEA	N	N	Y	Y	N	N	N	Y	Y	N	N
AURIGA	639547	UNISEA	N	N	Y	N	N	N	N	N	N	N	N
AURORA	636919	UNISEA	N	N	Y	N	N	N	N	N	N	N	N
BERING ROSE	624325	UNALASKA	N	N	Y	N	N	N	N	N	N	N	N
BLUE FOX	979437	AKUTAN	N	N	Y	Y	N	N	N	N	Y	Y	N
BRISTOL EXPLORER	647985	ARCTIC ENT	N	N	Y	N	N	N	N	N	N	N	N
CAITLIN ANN	960836	WESTWARD	N	N	Y	N	N	N	N	N	N	N	N
CAPE KIWANDA	618158	AKUTAN	N	N	Y	N	N	N	N	N	N	Y	Y
CHELSEA K	976753	WESTWARD	N	N	Y	N	N	N	N	N	N	N	N
COLLIER BROTHERS	593809	OPEN ACCESS	N	N	Y	N	N	N	N	N	N	N	Y
COLUMBIA	615729	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
COMMODORE	914214	NORTHERN	N	N	Y	Y	N	N	N	N	N	N	N
DEFENDER	554030	UNISEA	N	N	Y	N	N	N	N	N	N	N	N
DESTINATION	571879	UNALASKA	N	N	Y	N	N	N	N	N	N	N	N
DOMINATOR	602309	AKUTAN	N	N	Y	Y	N	N	N	N	Y	N	N

		INSHORE	ENDORSEMENTS			-------- CRAB ENDORSEMENTS(2) ----------						BSAI	GOA
VESSEL NAME	USCG	CO-OP	C/P	MTH	INS	BBRK	STMBK	PRBK	AIRK	BAOT	BABT	P COD	GF
DONA MARTITA	651751	AKUTAN	N	N	Y	Y	N	N	N	N	Y	N	N
ELIZABETH F	526037	PETER PAN	N	N	Y	Y	N	N	N	N	N	N	Y
EXCALIBUR II	636602	NORTHERN	N	N	Y	N	N	N	N	N	N	N	Y
EXODUS	598666	AKUTAN	N	N	Y	N	N	N	N	N	N	N	Y
FIERCE ALLEGIANCE	588849	WESTWARD	N	N	Y	Y	N	N	N	Y	Y	N	N
GLADIATOR	598380	AKUTAN	N	N	Y	Y	N	N	N	N	Y	N	N
GOLD RUSH	521106	NORTHERN	N	N	Y	N	N	N	N	N	N	N	Y
GOLDEN DAWN	604315	AKUTAN	N	N	Y	Y	N	N	N	N	Y	N	N
GOLDEN PISCES	599585	AKUTAN	N	N	Y	Y	N	Y	N	N	Y	Y	N
GREAT PACIFIC	608458	UNALASKA	N	N	Y	N	N	N	N	N	N	N	N
GUN-MAR	640130	UNISEA	N	N	Y	Y	N	N	N	N	Y	N	N
HALF MOON BAY	615796	NORTHERN	N	N	Y	N	N	N	N	N	N	N	N
HAZEL LORRAINE	592211	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
HICKORY WIND	594154	WESTWARD	N	N	Y	N	N	N	N	N	N	N	Y
INTREPID EXPLORER	988598	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
LESLIE LEE	584873	AKUTAN	N	N	Y	N	N	N	N	N	N	N	Y
LISA MELINDA	584360	AKUTAN	N	N	Y	N	N	N	N	N	N	N	Y
MAJESTY	962718	AKUTAN	N	N	Y	Y	N	N	N	N	Y	N	N
MARCY J	517024	AKUTAN	N	N	Y	Y	N	N	N	N	N	N	N
MESSIAH	610150	UNALASKA	N	N	Y	N	N	N	N	N	N	Y	N
MISS BERDIE	913277	NORTHERN	N	N	Y	N	N	N	N	N	N	N	N
MORNING STAR	610393	UNALASKA	N	N	Y	N	N	N	N	N	N	N	N
MORNING STAR	1037811	PETER PAN	N	N	Y	N	N	N	N	N	N	N	Y
MS AMY	920936	UNALASKA	N	N	Y	N	N	N	N	N	N	N	N
NORDIC EXPLORER	678234	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
NORDIC STAR	584684	UNISEA	N	N	Y	Y	N	N	N	N	Y	N	N
NORTHERN PATRIOT	637744	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
NORTHWEST EXPLORER	609384	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
OCEAN EXPLORER	678236	ARCTIC ENT	N	N	Y	N	N	N	N	N	N	N	N
OCEAN HOPE 3	652397	WESTWARD	N	N	Y	N	N	N	N	N	N	Y	Y
PACIFIC EXPLORER	678237	ARCTIC ENT	N	N	Y	N	N	N	N	N	N	N	N
PACIFIC KNIGHT	561771	WESTWARD	N	N	Y	N	N	N	N	N	N	N	N
PACIFIC MONARCH	557467	UNISEA	N	N	Y	N	N	N	N	N	N	N	N
PACIFIC PRINCE	697280	WESTWARD	N	N	Y	N	N	N	N	N	N	N	N
PACIFIC RAM	589115	AKUTAN	N	N	Y	N	N	N	N	N	N	N	Y
PACIFIC VIKING	555058	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
PEGASUS	565120	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
PEGGY JO	502779	AKUTAN	N	N	Y	N	N	N	N	N	N	Y	Y
PERSEVERANCE	536873	AKUTAN	N	N	Y	N	N	N	N	N	N	Y	N
POSEIDON	610436	NORTHERN	N	N	Y	Y	N	N	N	N	N	N	N
PREDATOR	547390	AKUTAN	N	N	Y	N	N	N	N	N	N	Y	N

VESSEL NAME	USCG	INSHORE CO-OP	ENDORSEMENTS C/P	MTH	INS	-------- CRAB ENDORSEMENTS(2) ---------- BBRK	STMBK	PRBK	AIRK	BAOT	BABT	BSAI P COD	GOA GF
PROGRESS	565349	UNALASKA	N	N	Y	N	N	N	N	N	N	N	N
PROVIDIAN	1062183	PETER PAN	N	N	Y	N	N	N	N	N	N	N	N
RAVEN	629499	AKUTAN	N	N	Y	N	N	N	N	N	N	N	N
ROYAL AMERICAN	624371	AKUTAN	N	N	Y	Y	N	N	N	N	N	N	N
ROYAL ATLANTIC	559271	NORTHERN	N	N	Y	Y	N	N	N	N	N	N	N
SEA WOLF	609823	UNALASKA	N	N	Y	Y	N	N	N	N	N	N	N
SEADAWN	548685	UNISEA	N	N	Y	Y	N	N	N	N	Y	N	N
SEEKER	924585	AKUTAN	N	N	Y	N	N	N	N	N	N	Y	N
SOVEREIGNTY	651752	AKUTAN	N	N	Y	Y	N	N	N	N	N	N	N
STAR FISH	561651	UNISEA	N	N	Y	Y	N	N	N	N	Y	N	N
STARLITE	597065	UNISEA	N	N	Y	Y	N	N	N	N	Y	N	N
STARWARD	617807	UNISEA	N	N	Y	Y	N	N	N	N	Y	N	N
STORM PETREL	620769	NORTHERN	N	N	Y	Y	N	N	N	N	N	N	N
SUNSET BAY	598484	NORTHERN	N	N	Y	N	N	N	N	N	N	N	N
TOPAZ	575428	PETER PAN	N	N	Y	N	N	N	N	N	N	N	Y
VIKING	565017	WESTWARD	N	N	Y	N	N	N	N	N	N	N	N
VIKING EXPLORER	605228	AKUTAN	N	N	Y	Y	N	N	N	N	Y	N	N
WALTER N	257365	PETER PAN	N	N	Y	N	N	N	N	N	N	N	Y
WESTWARD I	615165	WESTWARD	N	N	Y	N	N	N	N	N	N	N	N
ALYESKA	560237	WESTWARD	N	Y	Y	N	N	N	N	N	Y	N	N
AMBER DAWN	529425	PETER PAN	N	Y	Y	N	N	N	N	N	N	N	N
AMERICAN BEAUTY	613847	PETER PAN	N	Y	Y	N	N	N	N	N	N	N	N
MAR-GUN	525608	OPEN ACCESS	N	Y	Y	Y	N	N	N	N	Y	N	N
MARGARET LYN	615563	AKUTAN	N	Y	Y	Y	N	N	N	N	N	N	N
MARK I	509552	OPEN ACCESS	N	Y	Y	Y	N	N	N	N	Y	N	N
MORNING STAR	618797	OPEN ACCESS	N	Y	Y	N	N	N	N	N	N	N	N
NORDIC FURY	542651	NORTHERN	N	Y	Y	Y	N	N	N	N	Y	N	N
OCEAN LEADER	561518	PETER PAN	N	Y	Y	N	N	N	N	N	N	N	N
OCEANIC	602279	PETER PAN	N	Y	Y	Y	N	N	N	N	Y	N	N
PACIFIC CHALLENGER	518937	WESTWARD	N	Y	Y	N	N	N	N	N	N	N	N
PACIFIC FURY	561934	NORTHERN	N	Y	Y	Y	N	N	N	N	Y	N	N
TRAVELER	929356	AKUTAN	N	Y	Y	N	N	N	N	N	N	N	N
VANGUARD	617802	UNALASKA	N	Y	Y	Y	N	N	N	N	N	N	N
WESTERN DAWN	524423	UNALASKA	N	Y	Y	N	N	N	N	N	N	N	N

Table 2: AFA Catcher/Processors

Vessel Name	ADFG	USCG	BSAI Pollock Restricted?
ALASKA OCEAN	60407	637856	N
AMERICAN DYNASTY	59378	951307	N
AMERICAN ENTERPRISE	54836	594803	N
AMERICAN TRIUMPH	60660	646737	N
ARCTIC FJORD	57450	940866	N
ARCTIC STORM	54886	903511	N
ENDURANCE	57201	592206	N
HIGHLAND LIGHT	56974	577044	N
ISLAND ENTERPRISE	59503	610290	N
KATIE ANN	55301	518441	N
KODIAK ENTERPRISE	59170	579450	N
NORTHERN EAGLE	56618	506694	N
NORTHERN GLACIER	48075	663457	N
NORTHERN HAWK	60795	643771	N
NORTHERN JAEGER	60202	521069	N
OCEAN PEACE	55767	677399	Y
OCEAN ROVER	56987	552100	N
PACIFIC GLACIER	56991	933627	N
SEATTLE ENTERPRISE	56789	904767	N
STARBOUND	57621	944658	N
U.S. ENTERPRISE	55125	921112	N

Table 3. AFA Motherships

Vessel Name	ADFG	USCG	AFA Permit	Co-op Processor Endorsement
EXCELLENCE	60958	967502	4111	Y
GOLDEN ALASKA	52929	651041	1607	Y
OCEAN PHOENIX	59463	296779	3703	Y

Table 4. AFA Inshore Cooperatives

Cooperative Name	AFA Permit	Representative	% of BSAI Inshore Allocation
AKUTAN CATCHER VESSEL ASSOCIATION (TRIDENT - AKUTAN)	101	JIM MCMANUS	29.889
ARCTIC ENTERPRISE ASSOCIATION	102	JIM MCMANUS	5.635
NORTHERN VICTOR FLEET COOPERATIVE	103	TERRY LEITZELL	8.116
PETER PAN FLEET COOPERATIVE	104	WILLIAM OLIVER	1.725
UNALASKA CO-OP (ALYESKA)	105	KENNETH TIPPETT	12.025
UNISEA FLEET COOPERATIVE	106	JOSEPH SULLIVAN	23.768
WESTWARD FLEET COOPERATIVE	107	TERRANCE COSGROVE	18.452
TOTAL FOR INSHORE COOPERATIVES			**99.61**

APPENDIX II:

Cooperative Reports to the Council for 2000 and Cooperative Agreements signed in 2000

(Cooperative reports for 2001 available upon request)

APPENDIX III

Bycatch and Discards in the Trawl Fisheries, 1995-2000

Note: All catch reported in the official data sets are included in these tables. Therefore species such as jellyfish, with no commercial value, are reported here where they were not in some of the cooperative reports. Strong arguments can be made for using either approach. Including these species increases the reported discard rate. For example, the AFA catcher/processors reported discard rates of less than one percent in their annual report (when species such as jellyfish were excluded) and these tables show a discard rate of about 2 percent for the same year. The size of the impact on discard rates would, of course, vary by year.

Table 1: Catch and discard rates in the 1995 GOA catcher vessel trawl fishery

AFA	Target Fishery	Data	P. Cod	Shallow Water Flatfish	Deep Water Flatfish	Arrow-tooth	Flathead Sole	Rex Sole	Northern Rockfish	POP	Thorny-heads	Pelagic Rockfish	Shortraker/ Rougheye	Atka Mackerel	Pollock	Sablefish	Grand Total
			Species														
No	Deep Water Flatfish	Total Catch	83	23	382	298	19	44	1	10	31	0	10	-	34	47	1,019
		% Discarded	21%	5%	8%	77%	21%	29%	0%	100%	13%	100%	18%	-	81%	9%	37%
	Northern Rockfish	Total Catch	6	38	19	49	4	9	200	7	5	2	16	-	7	25	387
		% Discarded	0%	67%	29%	100%	0%	21%	0%	100%	0%	2%	14%	-	100%	6%	26%
	Other Species	Total Catch	108	88	67	630	270	134	46	1	6	29	4	-	94	34	1,673
		% Discarded	4%	9%	14%	31%	11%	23%	80%	87%	1%	0%	17%	-	12%	2%	24%
	Pacific Cod	Total Catch	21,650	589	6	306	84	29	31	0	1	23	2	0	213	1	23,076
		% Discarded	1%	19%	25%	76%	17%	13%	17%	100%	66%	58%	5%	100%	61%	5%	4%
	Pollock	Total Catch	326	24	6	179	54	7	1	0	0	1	0	0	21,686	1	22,357
		% Discarded	9%	32%	24%	80%	21%	21%	39%	100%	100%	16%	6%	100%	2%	1%	3%
	Shallow Water Flatfish	Total Catch	555	1,872	18	382	133	27	1	-	1	2	0	-	133	7	3,387
		% Discarded	31%	14%	9%	76%	6%	6%	0%	-	0%	24%	70%	-	63%	0%	31%
Total Catch of Non-AFA Trawlers			22,729	2,635	497	1,843	563	251	280	18	43	58	33	0	22,167	116	51,897
% Discarded by Non-AFA Trawlers			2%	16%	10%	62%	12%	21%	15%	100%	11%	25%	15%	100%	3%	6%	7%
Yes	Deep Water Flatfish	Total Catch	64	31	417	447	20	80	22	24	24	1	22	-	8	66	1,249
		% Discarded	28%	12%	10%	90%	23%	15%	14%	100%	7%	0%	59%	-	51%	3%	44%
	Northern Rockfish	Total Catch	1	-	3	11	0	1	141	3	2	1	19	-	-	9	199
		% Discarded	25%	-	65%	100%	85%	0%	3%	100%	21%	0%	36%	-	-	0%	18%
	Other Species	Total Catch	131	78	146	1,233	186	189	86	111	21	53	27	-	202	143	2,740
		% Discarded	19%	13%	14%	41%	15%	15%	88%	98%	8%	1%	58%	-	63%	25%	40%
	Pacific Cod	Total Catch	10,731	275	20	165	57	12	4	0	2	2	2	10	128	8	11,481
		% Discarded	2%	28%	17%	73%	79%	62%	68%	85%	14%	53%	0%	100%	92%	39%	6%
	Pollock	Total Catch	147	6	1	88	6	3	1	3	-	0	0	133	41,457	0	41,888
		% Discarded	25%	23%	16%	80%	71%	32%	94%	49%	-	94%	96%	26%	1%	100%	1%
	Pacific Ocean Perch	Total Catch	5	1	2	12	1	1	0	14	0	0	-	-	1	1	39
		% Discarded	0%	0%	0%	2%	9%	9%	0%	1%	0%	0%	-	-	39%	0%	3%
	Shallow Water Flatfish	Total Catch	295	1,226	37	258	59	16	7	0	5	1	3	-	90	12	2,204
		% Discarded	13%	16%	66%	84%	6%	4%	6%	100%	19%	0%	0%	-	62%	1%	31%
Total Catch of AFA Trawlers			11,374	1,616	625	2,215	329	301	261	156	54	58	73	143	41,887	238	59,801
% Discarded by AFA Trawlers			3%	18%	15%	60%	26%	16%	33%	88%	10%	3%	48%	32%	2%	17%	6%
Total 1995 CV Trawl Catch			34,104	4,251	1,121	4,058	892	552	542	174	97	116	107	144	64,053	354	111,698
% of Total Discarded			2%	17%	13%	61%	17%	18%	24%	89%	10%	14%	38%	32%	2%	13%	6%

Source: Alaska Department of Fish and Game fish ticket data, 1995 (for the inshore catcher vessel deliveries only).

Table 2: Catch and discard rates in the 1996 GOA catcher vessel trawl fishery

AFA	Target Fishery	Data	Species														
			P. Cod	Shallow Water Flatfish	Deep Water Flatfish	Arrow-tooth	Flathead Sole	Rex Sole	Northern Rockfish	POP	Thorny-heads	Pelagic Rockfish	Shortraker/ Rougheye	Atka Mackerel	Pollock	Sablefish	Grand Total
No	Deep Water Flatfish	Total Catch	25	12	419	163	15	21	0	8	33	0	3	-	3	49	777
		% Discarded	79%	4%	5%	82%	25%	14%	0%	95%	23%	0%	7%	-	59%	7%	29%
	Northern Rockfish	Total Catch	7	13	28	61	1	11	463	62	15	126	8	1	1	71	884
		% Discarded	63%	1%	44%	95%	51%	11%	4%	15%	12%	1%	0%	6%	100%	3%	14%
	Other Species	Total Catch	143	197	72	686	299	121	48	46	5	53	25	-	146	37	2,264
		% Discarded	63%	11%	17%	40%	9%	8%	11%	45%	3%	4%	0%	-	35%	30%	29%
	Pacific Cod	Total Catch	29,888	659	3	285	103	25	12	0	0	21	0	0	218	0	31,354
		% Discarded	1%	10%	30%	71%	19%	4%	28%	6%	0%	37%	0%	100%	44%	17%	2%
	Pollock	Total Catch	305	52	3	205	19	6	2	0	0	1	0	-	27,023	-	27,678
		% Discarded	31%	62%	14%	84%	43%	22%	72%	84%	100%	6%	100%	-	3%	-	5%
	Pacific Ocean Perch	Total Catch	26	23	55	204	18	43	61	799	9	13	14	-	10	127	1,433
		% Discarded	100%	52%	47%	97%	18%	20%	38%	9%	2%	0%	32%	-	76%	1%	29%
	Shallow Water Flatfish	Total Catch	1,190	5,453	12	853	364	31	2	1	1	6	0	-	264	1	8,961
		% Discarded	65%	8%	23%	71%	14%	17%	7%	18%	21%	50%	15%	-	47%	2%	27%
Total Catch of Non-AFA Trawlers			31,585	6,408	592	2,456	818	258	587	916	64	220	50	1	27,664	286	73,352
% Discarded by Non-AFA Trawlers			4%	9%	13%	67%	14%	11%	9%	12%	16%	6%	10%	6%	4%	6%	8%
Yes	Deep Water Flatfish	Total Catch	7	3	516	82	6	34	19	5	39	2	8	-	0	56	780
		% Discarded	34%	8%	15%	96%	29%	6%	84%	1%	29%	0%	8%	-	70%	9%	25%
	Northern Rockfish	Total Catch	14	1	35	71	2	11	339	22	7	56	9	1	0	53	631
		% Discarded	100%	6%	51%	100%	21%	8%	5%	10%	13%	1%	7%	100%	100%	17%	23%
	Other Species	Total Catch	36	85	54	531	143	92	16	62	5	44	4	-	47	25	1,262
		% Discarded	32%	5%	13%	27%	4%	2%	11%	90%	7%	12%	10%	-	25%	10%	24%
	Pacific Cod	Total Catch	5,436	79	1	36	7	3	3	0	-	3	-	5	92	-	5,695
		% Discarded	1%	21%	0%	97%	37%	1%	33%	100%	-	84%	-	100%	94%	-	4%
	Pollock	Total Catch	120	1	-	67	4	0	0	10	0	0	0	101	19,671	0	20,019
		% Discarded	18%	99%	-	92%	62%	39%	0%	93%	0%	41%	61%	58%	3%	100%	4%
	Pacific Ocean Perch	Total Catch	25	9	97	264	18	76	31	1,623	36	61	22	-	3	268	2,575
		% Discarded	98%	3%	24%	100%	13%	12%	12%	8%	3%	2%	2%	-	100%	3%	20%
	Shallow Water Flatfish	Total Catch	276	1,309	9	185	110	12	1	0	1	1	-	-	59	1	2,148
		% Discarded	63%	5%	7%	87%	14%	8%	2%	100%	12%	64%	-	-	59%	3%	26%
Total Catch of AFA Trawlers			5,914	1,487	713	1,236	290	228	410	1,723	88	169	42	107	19,873	402	33,110
% Discarded by AFA Trawlers			5%	6%	18%	66%	11%	7%	10%	11%	16%	6%	5%	60%	4%	6%	8%
Total 1996 CV Trawl Catch			37,499	7,895	1,305	3,693	1,109	486	997	2,639	152	389	93	108	47,538	688	106,461
% of Total Discarded			4%	9%	16%	66%	13%	9%	9%	12%	16%	6%	8%	60%	4%	6%	8%

Source: Alaska Department of Fish and Game fish ticket data, 1996 (for the inshore catcher vessel deliveries only)

Table 3: Catch and discard rates in the 1997 GOA catcher vessel trawl fishery

AFA	Target Fishery	Data	Species													
			P. Cod	Shallow Water Flatfish	Deep Water Flatfish	Arrow-tooth	Flathead Sole	Rex Sole	Northern Rockfish	POP	Thorny-heads	Pelagic Rockfish	Shortraker/ Rougheye	Atka Mackerel	Pollock	Sablefish	Grand Total
No	Deep Water Flatfish	Total Catch	20	6	691	241	7	22	-	2	69	0	18	-	2	64	1,204
		% Discarded	40%	16%	6%	84%	14%	49%	-	82%	9%	0%	39%	-	22%	3%	28%
	Northern Rockfish	Total Catch	4	0	5	21	0	1	401	11	3	82	2	-	0	29	563
		% Discarded	9%	44%	10%	100%	57%	23%	3%	24%	5%	0%	0%	-	100%	1%	7%
	Other Species	Total Catch	203	152	90	770	482	122	10	3	11	9	9	-	94	26	2,398
		% Discarded	22%	34%	27%	29%	14%	13%	98%	44%	6%	85%	15%	-	42%	10%	27%
	Pacific Cod	Total Catch	31,865	1,038	45	451	122	30	35	1	0	26	3	-	252	7	34,160
		% Discarded	1%	12%	88%	88%	16%	12%	73%	67%	0%	32%	87%	-	23%	3%	3%
	Pollock	Total Catch	469	25	5	210	53	8	1	0	0	6	3	0	40,894	0	41,842
		% Discarded	6%	61%	90%	76%	10%	28%	21%	33%	0%	40%	12%	0%	5%	100%	6%
	Pacific Ocean Perch	Total Catch	57	24	11	66	11	22	7	985	15	26	10	-	16	81	1,366
		% Discarded	10%	8%	16%	94%	5%	14%	14%	8%	36%	1%	0%	-	80%	13%	16%
	Shallow Water Flatfish	Total Catch	1,122	3,307	67	524	253	23	1	6	2	4	1	0	234	3	6,247
		% Discarded	36%	10%	87%	77%	8%	6%	40%	46%	15%	58%	10%	100%	33%	8%	27%
Total Catch of Non-AFA Trawlers			33,739	4,552	913	2,282	929	228	456	1,008	101	153	46	0	41,492	210	87,781
% Discarded by Non-AFA Trawlers			2%	12%	19%	65%	13%	17%	10%	8%	13%	14%	25%	38%	5%	8%	7%
Yes	Deep Water Flatfish	Total Catch	25	3	1,326	479	15	41	-	34	87	1	46	-	13	116	2,311
		% Discarded	11%	33%	4%	82%	3%	19%	-	81%	7%	0%	60%	-	31%	5%	29%
	Northern Rockfish	Total Catch	5	0	2	34	0	2	319	47	3	55	1	-	-	26	504
		% Discarded	1%	0%	28%	91%	0%	10%	1%	3%	2%	0%	0%	-	-	4%	9%
	Other Species	Total Catch	194	151	84	1,843	303	91	21	40	9	4	6	-	112	23	3,197
		% Discarded	10%	16%	32%	11%	18%	13%	100%	96%	16%	50%	17%	-	16%	5%	16%
	Pacific Cod	Total Catch	10,883	425	14	293	60	25	5	0	1	4	0	0	315	4	12,120
		% Discarded	1%	26%	41%	69%	48%	29%	86%	100%	0%	21%	0%	100%	57%	0%	6%
	Pollock	Total Catch	188	9	3	87	35	1	0	19	0	1	4	0	43,137	0	43,675
		% Discarded	13%	98%	92%	37%	6%	21%	45%	86%	6%	24%	11%	0%	5%	93%	5%
	Pacific Ocean Perch	Total Catch	57	11	29	84	4	19	54	1,601	26	55	14	0	6	137	2,131
		% Discarded	9%	30%	12%	100%	14%	11%	15%	4%	7%	0%	0%	100%	94%	6%	10%
	Shallow Water Flatfish	Total Catch	494	1,463	50	232	107	11	0	0	7	19	0	-	124	6	2,839
		% Discarded	36%	8%	89%	75%	16%	4%	42%	48%	0%	3%	38%	-	68%	8%	28%
Total Catch of AFA Trawlers			11,846	2,062	1,507	3,052	525	190	399	1,741	134	137	71	0	43,707	311	66,777
% Discarded by AFA Trawlers			3%	12%	9%	37%	20%	16%	9%	8%	7%	3%	41%	74%	5%	6%	8%
Total 1997 CV Trawl Catch			45,585	6,615	2,421	5,334	1,454	418	855	2,749	235	291	117	0	85,199	521	154,558
% of Total Discarded			2%	12%	13%	49%	15%	16%	10%	8%	9%	9%	35%	62%	5%	6%	7%

Source: Alaska Department of Fish and Game fish ticket data, 1997 (for the inshore catcher vessel deliveries only)

Table 4: Catch and discard rates in the 1998 GOA catcher vessel trawl fishery

AFA	Target Fishery	Data	P. Cod	Shallow Water Flatfish	Deep Water Flatfish	Arrow-tooth	Flathead Sole	Rex Sole	Northern Rockfish	POP	Thorny-heads	Pelagic Rockfish	Shortraker/ Rougheye	Atka Mackerel	Pollock	Sablefish	Grand Total
																Species	
No	Deep Water Flatfish	Total Catch	20	4	740	293	32	30	1	4	59	0	15	-	5	64	1,348
		% Discarded	6%	3%	3%	73%	40%	27%	38%	20%	13%	0%	36%	-	8%	13%	25%
	Northern Rockfish	Total Catch	62	1	20	110	1	6	997	27	21	294	18	-	5	65	1,674
		% Discarded	1%	7%	21%	81%	0%	6%	1%	8%	0%	0%	0%	-	22%	1%	8%
	Other Species	Total Catch	120	98	41	299	289	30	35	10	20	71	11	-	40	20	1,420
		% Discarded	7%	14%	8%	59%	12%	9%	10%	0%	1%	1%	56%	-	6%	9%	24%
	Pacific Cod	Total Catch	26,233	708	35	422	143	45	8	3	1	14	1	-	205	2	28,017
		% Discarded	0%	5%	28%	74%	19%	8%	13%	1%	0%	12%	19%	-	22%	25%	2%
	Pollock	Total Catch	539	27	8	413	50	7	5	1	0	3	1	0	59,022	0	60,321
		% Discarded	3%	2%	16%	17%	8%	1%	0%	1%	0%	6%	0%	0%	0%	90%	1%
	Pacific Ocean Perch	Total Catch	83	2	16	229	1	9	55	1,020	16	52	13	-	11	63	1,592
		% Discarded	0%	0%	8%	62%	2%	22%	0%	1%	0%	2%	0%	-	0%	0%	10%
	Shallow Water Flatfish	Total Catch	588	1,743	15	264	176	6	3	0	1	3	2	-	137	2	3,240
		% Discarded	16%	1%	0%	56%	10%	0%	30%	0%	0%	14%	6%	-	19%	29%	15%
Total Catch of Non-AFA Trawlers			27,644	2,585	875	2,030	692	133	1,104	1,064	119	437	61	0	59,424	215	97,613
% Discarded by Non-AFA Trawlers			1%	3%	5%	57%	14%	13%	1%	1%	7%	1%	19%	0%	1%	6%	3%
Yes	Deep Water Flatfish	Total Catch	83	3	1,133	295	15	19	2	-	72	1	18	0	5	81	1,787
		% Discarded	0%	0%	1%	54%	36%	17%	13%	-	8%	0%	31%	0%	0%	6%	13%
	Northern Rockfish	Total Catch	111	3	18	137	0	3	728	88	16	159	4	-	6	58	1,368
		% Discarded	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	-	0%	4%	9%
	Other Species	Total Catch	69	53	47	362	279	46	1	19	15	59	19	-	23	22	1,172
		% Discarded	17%	30%	5%	53%	15%	4%	23%	88%	10%	1%	72%	-	27%	21%	29%
	Pacific Cod	Total Catch	8,055	198	4	150	39	35	30	1	0	8	0	21	105	0	8,709
		% Discarded	0%	13%	0%	78%	41%	5%	48%	98%	0%	47%	0%	100%	12%	0%	3%
	Pollock	Total Catch	303	41	19	266	28	6	0	20	0	3	13	0	70,566	0	71,509
		% Discarded	9%	0%	64%	10%	0%	1%	9%	0%	0%	1%	60%	45%	1%	30%	1%
	Pacific Ocean Perch	Total Catch	174	0	8	174	0	6	80	1,468	20	74	4	-	4	92	2,142
		% Discarded	1%	0%	0%	36%	0%	0%	0%	0%	0%	0%	0%	-	0%	1%	4%
	Shallow Water Flatfish	Total Catch	118	308	15	19	46	0	-	-	-	0	-	-	37	1	620
		% Discarded	23%	1%	0%	85%	0%	0%	-	-	-	0%	-	-	48%	100%	19%
Total Catch of AFA Trawlers			8,913	607	1,245	1,403	407	116	841	1,596	123	303	57	21	70,748	254	87,307
% Discarded by AFA Trawlers			1%	8%	2%	49%	16%	6%	2%	1%	6%	1%	46%	99%	1%	5%	2%
Total 1998 CV Trawl Catch			36,558	3,191	2,120	3,433	1,099	249	1,945	2,660	242	740	118	21	130,172	470	184,920
% of Total Discarded			1%	4%	3%	53%	15%	9%	1%	1%	6%	1%	32%	99%	1%	5%	2%

Source: Alaska Department of Fish and Game fish ticket data, 1998 (for the inshore catcher vessel deliveries only)

Table 5: Catch and discard rates in the 1999 GOA catcher vessel trawl fishery

AFA	Target Fishery	Data	Species														
			P. Cod	Shallow Water Flatfish	Deep Water Flatfish	Arrow-tooth	Flathead Sole	Rex Sole	Northern Rockfish	POP	Thorny-heads	Pelagic Rockfish	Shortraker/ Rougheye	Atka Mackerel	Pollock	Sablefish	Grand Total
No	Deep Water Flatfish	Total Catch	34	3	759	220	4	7	-	4	51	1	48	-	5	50	1,253
		% Discarded	1%	6%	5%	80%	47%	30%	-	18%	8%	1%	32%	-	39%	9%	24%
	Northern Rockfish	Total Catch	198	10	13	270	6	18	945	93	10	399	5	-	1	86	2,070
		% Discarded	0%	0%	0%	72%	0%	12%	0%	16%	0%	0%	0%	-	41%	3%	11%
	Other Species	Total Catch	54	9	55	448	37	26	89	23	10	272	3	-	35	18	1,126
		% Discarded	0%	1%	0%	21%	0%	0%	17%	34%	7%	0%	41%	-	71%	5%	16%
	Pacific Cod	Total Catch	23,536	587	3	264	70	5	22	3	-	14	-	-	400	3	24,989
		% Discarded	0%	3%	87%	59%	8%	1%	79%	90%	-	69%	-	-	18%	98%	2%
	Pollock	Total Catch	347	5	1	323	52	3	0	1	0	1	1	44	40,612	3	41,462
		% Discarded	0%	0%	38%	2%	0%	0%	0%	11%	0%	1%	69%	0%	0%	1%	0%
	Pacific Ocean Perch	Total Catch	163	7	24	117	9	23	66	1,142	6	96	7	-	15	71	1,767
		% Discarded	1%	0%	27%	56%	0%	23%	0%	5%	3%	7%	9%	-	89%	1%	10%
	Shallow Water Flatfish	Total Catch	181	1,020	0	68	32	5	-	0	-	-	0	-	63	1	1,439
		% Discarded	4%	2%	0%	49%	0%	0%	-	100%	-	-	100%	-	36%	24%	8%
Total Catch of Non-AFA Trawlers			24,513	1,640	855	1,711	210	87	1,121	1,266	78	784	64	44	41,132	232	74,107
% Discarded by Non-AFA Trawlers			0%	2%	5%	42%	4%	11%	3%	6%	7%	2%	28%	0%	1%	5%	2%
Yes	Deep Water Flatfish	Total Catch	146	14	730	757	17	40	2	13	63	2	32	-	36	76	2,074
		% Discarded	2%	5%	0%	84%	0%	0%	100%	100%	22%	55%	54%	-	23%	38%	41%
	Northern Rockfish	Total Catch	176	6	17	198	8	38	807	63	7	393	6	-	1	74	1,815
		% Discarded	1%	0%	0%	67%	0%	0%	0%	16%	0%	2%	0%	-	0%	5%	9%
	Other Species	Total Catch	35	4	34	225	15	23	52	9	6	103	3	-	6	11	558
		% Discarded	9%	31%	10%	33%	0%	0%	0%	14%	59%	0%	28%	-	22%	23%	20%
	Pacific Cod	Total Catch	8,027	214	64	172	18	3	16	3	2	6	1	-	134	4	8,734
		% Discarded	0%	7%	0%	79%	1%	28%	71%	92%	0%	83%	0%	-	40%	0%	3%
	Pollock	Total Catch	227	3	0	302	24	3	0	11	0	1	3	70	46,701	6	47,504
		% Discarded	0%	36%	89%	7%	19%	22%	100%	57%	0%	1%	22%	8%	0%	0%	1%
	Pacific Ocean Perch	Total Catch	136	4	10	110	13	10	64	1,342	2	163	1	-	2	111	1,982
		% Discarded	0%	0%	1%	40%	0%	0%	0%	0%	11%	0%	0%	-	0%	11%	3%
	Shallow Water Flatfish	Total Catch	28	91	-	22	5	1	-	-	-	-	-	-	6	0	160
		% Discarded	27%	0%	-	60%	0%	0%	-	-	-	-	-	-	42%	0%	18%
Total Catch of AFA Trawlers			8,776	336	855	1,785	101	119	941	1,443	80	667	45	70	46,887	281	62,826
% Discarded by AFA Trawlers			0%	5%	0%	59%	5%	1%	1%	3%	22%	2%	41%	8%	1%	17%	3%
Total 1999 CV Trawl Catch			33,289	1,976	1,710	3,496	311	205	2,062	2,710	158	1,451	109	114	88,019	514	136,933
% of Total Discarded			0%	3%	3%	51%	4%	5%	2%	4%	14%	2%	34%	5%	1%	12%	2%

Source: Alaska Department of Fish and Game fish ticket data, 1999 (for the inshore catcher vessel deliveries only)

Table 6: Catch and discard rates in the 2000 GOA catcher vessel trawl fishery

AFA	Target	Data	Pacific Cod	Deepwater Flatfish	Shallow-water Flatfish	Arrowtooth	Flathead Sole	Rex Sole	Northern Rockfish	POP	Thornyhead Rockfish	Other	Pelagic Rockfish	Atka Mackerel	Pollock	Sablefish	Species Grand Total
No	Pacific Cod	Total Catch	16,027	255	8	98	31	3	19	1	1	45	4	-	174	3	16,669
		%Discarded	0%	12%	34%	100%	26%	0%	77%	14%	0%	98%	55%	0%	43%	0%	2%
	Deepwater Flatfish	Total Catch	770	3,284	2	590	151	7	1	0	0	257	4	0	177	6	5,249
		% Discarded	10%	1%	0%	69%	0%	19%	2%	3%	0%	61%	70%	100%	29%	33%	14%
	Shallow-water Flatfish	Total Catch	34	12	535	95	10	11	-	3	44	88	2	-	36	31	901
		% Discarded	7%	5%	11%	62%	14%	5%	0%	55%	1%	81%	0%	0%	1%	1%	22%
	Other	Total Catch	333	233	29	887	327	72	257	176	18	210	597	-	156	93	3,388
		% Discarded	5%	1%	0%	27%	0%	0%	0%	11%	16%	24%	0%	0%	13%	7%	11%
	Northern Rockfish	Total Catch	136	7	2	25	-	1	655	98	14	24	404	-	4	51	1,420
		% Discarded	0%	0%	0%	100%	0%	0%	0%	7%	0%	49%	0%	0%	100%	3%	4%
	POP	Total Catch	309	2	1	138	-	1	130	2,050	19	32	337	-	11	176	3,206
		% Discarded	3%	0%	0%	100%	0%	0%	0%	1%	0%	62%	4%	0%	100%	8%	7%
	Pollock	Total Catch	284	21	3	95	47	14	0	109	0	97	1	-	37,389	1	38,060
		% Discarded	0%	2%	8%	92%	6%	4%	1%	73%	35%	76%	0%	0%	0%	67%	1%
Non-AFA Total Catch			17,894	3,814	579	1,928	566	108	1,062	2,438	96	751	1,348	0	37,948	360	68,893
% Discarded by Non-AFA			1%	2%	11%	55%	2%	3%	1%	5%	3%	57%	1%	100%	0%	7%	3%
Yes	Pacific Cod	Total Catch	3,201	76	-	49	18	2	9	1	-	28	2	-	44	-	3,429
		% Discarded	0%	17%	0%	100%	56%	44%	90%	48%	0%	96%	22%	0%	45%	0%	4%
	Deepwater Flatfish	Total Catch	390	1,511	8	258	45	2	1	0	1	156	1	-	101	29	2,505
		% Discarded	5%	0%	0%	77%	1%	0%	6%	0%	0%	45%	5%	0%	3%	77%	13%
	Shallow-water Flatfish	Total Catch	10	0	87	43	0	0	-	0	2	21	-	-	0	13	176
		% Discarded	14%	0%	0%	100%	0%	0%	0%	100%	5%	96%	0%	0%	0%	53%	40%
	Other	Total Catch	187	132	2	470	155	23	196	165	9	57	406	-	37	36	1,875
		% Discarded	0%	0%	0%	10%	0%	0%	0%	2%	6%	29%	0%	0%	7%	4%	4%
	Northern Rockfish	Total Catch	80	4	-	36	-	-	333	45	9	9	202	18	-	29	766
		% Discarded	0%	0%	0%	100%	0%	0%	0%	5%	0%	65%	0%	100%	0%	0%	8%
	POP	Total Catch	315	-	-	123	-	-	140	1,527	10	10	326	-	2	131	2,584
		% Discarded	11%	0%	0%	100%	0%	0%	0%	0%	0%	77%	0%	0%	100%	5%	7%
	Pollock	Total Catch	119	12	0	35	6	2	-	129	-	40	0	0	27,457	1	27,801
		% Discarded	2%	4%	100%	71%	25%	0%	0%	46%	0%	93%	63%	100%	1%	100%	1%
Total Catch of AFA Trawlers			4,303	1,735	98	1,013	224	30	678	1,867	31	321	938	18	27,642	239	39,136
% Discarded by AFA Trawlers			1%	1%	0%	51%	5%	3%	1%	4%	2%	57%	0%	100%	1%	16%	3%
Total Catch of Trawl CVs			22,197	5,549	677	2,941	790	138	1,740	4,304	127	1,072	2,285	18	65,591	598	108,029
% Discarded			1%	2%	9%	54%	3%	3%	1%	4%	3%	57%	1%	100%	1%	11%	3%

Source: Alaska Department of Fish and Game fish ticket data, 2000 (for the inshore catcher vessel deliveries only)

Table 7: Catch and discard rates in the 1995 BSAI catcher vessel trawl fishery

AFA	Target Fishery	Data	Arrowtooth	Flathead Sole	Other	Pacific Cod	Pollock	POP	Rock Sole	Yellowfin Sole	Grand Total
			Species								
No	Pacific Cod	Total Catch	1	57	55	3,246	234	0	163	1	3,759
		% Discarded	100%	100%	100%	2%	98%	100%	100%	100%	15%
	Other	Total Catch	64	8	104	4	1	1	3	-	184
		% Discarded	99%	100%	35%	10%	100%	94%	100%	-	61%
	Yellowfin Sole	Total Catch	-	-	-	-	-	-	-	618	618
		% Discarded	-	-	-	-	-	-	-	0%	0%
	Pollock	Total Catch	1	1	1	34	1,775	1	0	0	1,813
		% Discarded	100%	100%	100%	3%	1%	100%	100%	100%	1%
Total Catch of Non-AFA Trawlers			66	66	160	3,284	2,010	3	166	619	6,374
% Discarded by Non-AFA Trawlers			99%	100%	58%	2%	12%	97%	100%	0%	11%
Yes	Pacific Cod	Total Catch	424	966	956	38,556	7,072	4	2,674	71	50,723
		% Discarded	99%	97%	96%	4%	96%	100%	98%	97%	26%
	Other	Total Catch	153	15	735	1	5	1	0	0	910
		% Discarded	81%	98%	4%	0%	59%	14%	0%	0%	19%
	Yellowfin Sole	Total Catch	1	164	1,664	633	1,998	-	653	10,793	15,904
		% Discarded	0%	12%	46%	42%	51%	-	32%	6%	18%
	Pollock	Total Catch	129	153	731	4,634	476,909	136	55	6	482,753
		% Discarded	68%	58%	66%	34%	1%	47%	83%	67%	2%
Total Catch of AFA Trawlers			707	1,297	4,087	43,823	485,983	142	3,382	10,869	550,290
% Discarded by AFA Trawlers			90%	82%	54%	8%	3%	48%	85%	7%	4%
Total 1995 CV Trawl Catch			773	1,363	4,247	47,107	487,994	144	3,548	11,489	556,664
% of Total Discarded			90%	82%	54%	7%	3%	49%	86%	6%	4%

Source: Alaska Department of Fish and Game fish ticket data, 1995 (for the inshore catcher vessel deliveries only)

Table 8: Catch and discard rates in the 1996 BSAI catcher vessel trawl fishery

AFA	Target	Data	Species: Arrowtooth	Flathead Sole	Other	Pacific Cod	Pollock	POP	Rock Sole	Yellowfin Sole	Grand Total
No	Pacific Cod	Total Catch	50	110	187	3,530	407	3	213	117	4,618
		% Discarded	100%	100%	100%	1%	100%	100%	100%	100%	24%
	Pollock	Total Catch	24	26	31	89	4,612	1	6	0	4,789
		% Discarded	97%	97%	92%	31%	1%	8%	100%	99%	3%
Total Catch of Non-AFA Trawlers			74	136	218	3,619	5,019	4	218	118	9,407
% Discarded by Non-AFA Trawlers			99%	99%	99%	2%	9%	76%	100%	100%	13%
Yes	Pacific Cod	Total Catch	1,102	1,397	3,085	48,013	9,080	67	3,976	621	67,342
		% Discarded	100%	99%	100%	2%	97%	7%	100%	100%	29%
	Other	Total Catch	44	6	61	4	8	0	22	21	166
		% Discarded	19%	0%	18%	45%	69%	0%	0%	0%	17%
	Yellowfin Sole	Total Catch	4	22	570	343	574	-	198	6,273	7,984
		% Discarded	9%	27%	35%	44%	34%	-	85%	6%	14%
	Pollock	Total Catch	479	555	1,541	4,543	440,268	205	124	40	447,756
		% Discarded	64%	58%	43%	27%	1%	32%	76%	96%	1%
Total Catch of AFA Trawlers			1,629	1,980	5,257	52,903	449,931	272	4,321	6,955	523,248
% Discarded by AFA Trawlers			87%	87%	75%	4%	3%	26%	98%	15%	5%
Total 1996 CV Trawl Catch			1,703	2,116	5,475	56,522	454,950	276	4,539	7,072	532,654
% of Total Discarded			87%	87%	76%	4%	3%	27%	98%	16%	5%

Source: Alaska Department of Fish and Game fish ticket data, 1996 (for the inshore catcher vessel deliveries only)

Table 9: Catch and discard rates in the 1997 GOA catcher vessel trawl fishery

AFA	Target	Data	Species								
			Arrowtooth	Flathead Sole	Other	Pacific Cod	Pollock	POP	Rock Sole	Yellowfin Sole	Grand Total
No	Pacific Cod	Total Catch	18	70	94	4,719	752	-	172	30	5,855
		% Discarded	100%	100%	98%	0%	89%	-	100%	100%	18%
	Pollock	Total Catch	11	16	20	53	20,751	1	2	0	20,853
		% Discarded	99%	99%	55%	18%	1%	98%	100%	100%	1%
Total Catch of Non-AFA Trawlers			28	86	115	4,773	21,503	1	174	30	26,709
% Discarded by Non-AFA Trawlers			100%	100%	90%	1%	4%	98%	100%	100%	5%
Yes	Pacific Cod	Total Catch	285	2,258	2,261	50,897	13,210	2	4,084	292	73,290
		% Discarded	100%	100%	99%	1%	94%	100%	99%	100%	30%
	Other	Total Catch	0	0	5	1	-	0	-	-	7
		% Discarded	0%	0%	0%	0%	-	0%	-	-	0%
	Yellowfin Sole	Total Catch	3	132	2,020	371	1,234	0	1,088	14,246	19,095
		% Discarded	87%	3%	2%	1%	8%	0%	6%	0%	1%
	Pollock	Total Catch	350	938	1,795	4,143	414,385	429	153	3	422,196
		% Discarded	70%	76%	47%	41%	1%	26%	73%	83%	2%
Total Catch of AFA Trawlers			638	3,329	6,081	55,413	428,830	431	5,325	14,541	514,587
% Discarded by AFA Trawlers			83%	89%	51%	4%	4%	26%	79%	2%	6%
Total 1997 CV Trawl Catch			667	3,415	6,196	60,185	450,333	432	5,499	14,570	541,296
% of Total Discarded			84%	89%	52%	4%	4%	26%	80%	3%	6%

Source: Alaska Department of Fish and Game fish ticket data, 1997 (for the inshore catcher vessel deliveries only)

Table 10: Catch and discard rates in the 1998 BSAI catcher vessel trawl fishery

AFA	Target	Data	Species								
			Arrowtooth	Flathead Sole	Other	Pacific Cod	Pollock	POP	Rock Sole	Yellowfin Sole	Grand Total
No	Pacific Cod	Total Catch	48	66	145	1,855	113	1	120	8	2,355
		% Discarded	97%	99%	100%	0%	22%	11%	100%	100%	17%
	Other	Total Catch	-	-	0	-	-	-	-	-	0
		% Discarded	-	-	0%	-	-	-	-	-	0%
	Pollock	Total Catch	2	1	6	5	1,252	1	0	-	1,267
		% Discarded	54%	54%	27%	0%	0%	0%	91%	-	0%
Total Catch of Non-AFA Trawlers			50	67	151	1,860	1,365	2	120	8	3,623
% Discarded by Non-AFA Trawlers			96%	98%	97%	0%	2%	5%	100%	100%	11%
Yes	Pacific Cod	Total Catch	151	539	1,450	38,494	3,920	34	1,391	137	46,116
		% Discarded	97%	99%	98%	0%	38%	98%	100%	99%	11%
	Other	Total Catch	2	4	183	3	144	9	1	-	345
		% Discarded	5%	1%	2%	0%	95%	19%	0%	-	41%
	Yellowfin Sole	Total Catch	17	20	19	32	41	-	9	329	468
		% Discarded	0%	0%	0%	0%	0%	-	0%	0%	0%
	Pollock	Total Catch	304	488	1,768	2,213	472,767	579	100	87	478,307
		% Discarded	53%	51%	40%	1%	0%	20%	76%	44%	0%
Total Catch of AFA Trawlers			474	1,051	3,420	40,742	476,872	622	1,501	552	525,235
% Discarded by AFA Trawlers			65%	74%	63%	0%	0%	24%	98%	32%	1%
Total 1998 CV Trawl Catch			524	1,119	3,571	42,602	478,237	624	1,620	561	528,858
% of Total Discarded			68%	76%	64%	0%	0%	24%	98%	33%	1%

Source: Alaska Department of Fish and Game fish ticket data, 1998 (for the inshore catcher vessel deliveries only)

Table 11: Catch and discard rates in the 1999 BSAI catcher vessel trawl fishery

AFA	Target	Data	Arrowtooth	Flathead Sole	Other	Pacific Cod	Pollock	POP	Rock Sole	Yellowfin Sole	Grand Total
			Species								
No	Pacific Cod	Total Catch	42	29	84	1,905	104	1	36	11	2,212
		% Discarded	99%	96%	98%	0%	21%	100%	100%	100%	10%
	Other	Total Catch	0	-	24	-	-	0	-	-	24
		% Discarded	0%	-	0%	-	-	0%	-	-	0%
	Pollock	Total Catch	1	1	7	10	3,144	0	0	1	3,166
		% Discarded	92%	91%	19%	0%	0%	38%	48%	100%	0%
Total Catch of Non-AFA Trawlers			43	30	116	1,916	3,248	1	36	12	5,402
% Discarded by Non-AFA Trawlers			99%	95%	72%	0%	1%	93%	100%	100%	4%
Yes	Pacific Cod	Total Catch	205	542	982	32,455	5,165	35	2,816	105	42,304
		% Discarded	99%	98%	96%	0%	70%	100%	100%	100%	20%
	Yellowfin Sole	Total Catch	-	3	148	7	85	-	31	1,206	1,480
		% Discarded	-	0%	0%	0%	0%	-	0%	0%	0%
	Pollock	Total Catch	163	525	908	1,341	418,368	39	109	26	421,479
		% Discarded	93%	56%	16%	1%	0%	28%	71%	22%	0%
Total Catch of AFA Trawlers			368	1,070	2,038	33,802	423,617	75	2,956	1,337	465,263
% Discarded by AFA Trawlers			96%	77%	54%	0%	1%	62%	98%	8%	2%
Total 1999 CV Trawl Catch			411	1,100	2,153	35,718	426,865	76	2,992	1,349	470,664
% of Total Discarded			96%	78%	55%	0%	1%	62%	98%	9%	2%

Source: Alaska Department of Fish and Game fish ticket data, 1999 (for the inshore catcher vessel deliveries only)

Table 12: Catch and discard rates in the 2000 BSAI catcher vessel trawl fishery

			Species								
AFA	Target	Data	Other	Pacific Cod	Arrowtooth	Flathead Sole	Rock Sole	Yellowfin Sole	POP	Pollock	Grand Total
No	Pacific Cod	Total Catch	107	2,643	15	72	192	27	15	278	3,349
		% Discarded	100%	0%	100%	100%	100%	100%	99%	72%	19%
	Pollock	Total Catch	6	28	9	2	11	0	-	4,042	4,098
		% Discarded	5%	16%	100%	48%	0%	100%	0%	0%	0%
	Other	Total Catch	7	-	1	-	-	-	0	-	8
		% Discarded	14%	0%	100%	0%	0%	0%	100%	0%	22%
Total Catch of Non-AFA Trawlers			120	2,671	25	75	203	27	15	4,319	7,455
% Discarded by Non-AFA Trawlers			90%	1%	100%	98%	94%	100%	99%	5%	9%
Yes	Pacific Cod	Total Catch	845	35,671	85	486	1,098	148	25	2,948	41,307
		% Discarded	100%	0%	100%	100%	98%	100%	100%	65%	11%
	Flathead Sole	Total Catch	0	0	0	1	-	-	-	-	1
		% Discarded	100%	0%	100%	100%	0%	0%	0%	0%	86%
	Rocksole	Total Catch	-	1	-	-	3	-	-	-	4
		% Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Yellowfin Sole	Total Catch	101	9	-	-	64	1,524	-	85	1,783
		% Discarded	1%	0%	0%	0%	0%	0%	0%	5%	0%
	Pollock	Total Catch	143	1,265	189	377	258	80	3	604,404	606,721
		% Discarded	99%	2%	100%	100%	100%	99%	100%	0%	0%
	Other	Total Catch	56	2	-	0	1	-	-	0	59
		% Discarded	0%	3%	0%	100%	100%	0%	0%	0%	2%
Total Catch of AFA Trawlers			1,146	36,949	274	864	1,424	1,752	28	607,437	649,875
% Discarded by AFA Trawlers			86%	0%	100%	100%	94%	13%	100%	0%	1%
Total 2000 CV Trawl Catch			1,266	39,621	299	939	1,627	1,779	43	611,757	657,330
% of Total Discarded			87%	0%	100%	100%	94%	14%	100%	0%	1%

Source: Alaska Department of Fish and Game fish ticket data, 2000 (for the inshore catcher vessel deliveries only)

Table 13: Total catch (mt) and discard rates in the trawl catcher/processor sector, 1995.

AFA	Target Fishery	Data	Species							
			Atka Mackerel	Flathead Sole	Other	Pacific Cod	Pollock	Rocksole	Yellowfin Sole	Grand Total
9	Atka Mackerel	Total Catch	8,703	2	514	363	13	18		9,614
		% Discarded	3%	100%	87%	100%	100%	100%		12%
	Other	Total Catch	-	12	187	28	84	0	246	557
		% Discarded		88%	36%	100%	97%	100%	43%	53%
	Pacific Cod	Total Catch	34	270	602	7,330	2,319	1,119	9	11,682
		% Discarded	100%	100%	99%	6%	73%	97%	100%	35%
	Pollock	Total Catch	1	319	606	2,630	112,207	311	156	116,231
		% Discarded	100%	100%	99%	92%	6%	96%	89%	9%
	Rocksole	Total Catch		22	80	123	143	298	178	843
		% Discarded		45%	62%	91%	100%	20%	29%	51%
	Yellowfin Sole	Total Catch		205	752	681	1,580	435	4,979	8,632
		% Discarded		83%	88%	80%	88%	71%	19%	46%
Total Catch of 9 AFA CPs			8,738	830	2,741	11,156	116,346	2,181	5,568	147,559
% Discarded by the 9 AFA CPs			3%	94%	88%	35%	9%	81%	22%	14%
20	Atka Mackerel	Total Catch	2,809		115	167	1	7		3,099
		% Discarded	7%		100%	37%	100%	100%		12%
	Other	Total Catch	-	15	127	5	37	6	46	236
		% Discarded		32%	29%	94%	100%	59%	99%	56%
	Pacific Cod	Total Catch	84	183	481	5,986	808	399	1	7,942
		% Discarded	100%	97%	100%	4%	70%	86%	100%	24%
	Pollock	Total Catch	6	884	835	4,236	401,640	337	169	408,107
		% Discarded	50%	79%	99%	90%	5%	100%	100%	6%
	Rockfish	Total Catch	208		486	32	11	0		738
		% Discarded	100%		13%	96%	100%	100%		43%
	Rocksole	Total Catch		52	278	684	629	2,132	245	4,019
		% Discarded		94%	88%	56%	99%	62%	16%	66%
	Yellowfin Sole	Total Catch		809	3,415	2,437	6,377	1,346	28,950	43,333
		% Discarded		37%	64%	52%	66%	46%	16%	31%
Total Catch of 20 AFA CPs			3,107	1,942	5,735	13,548	409,503	4,228	29,410	467,474
% Discarded by the 20 AFA CPs			15%	63%	69%	43%	6%	62%	17%	9%
No	Atka Mackerel	Total Catch	68,311	4	4,874	3,925	344	113	4	77,575
		% Discarded	19%	87%	76%	31%	100%	77%	48%	24%
	Flathead Sole	Total Catch		1,012	4,577	1,638	3,184	1,191	6,146	17,748
		% Discarded		27%	45%	55%	90%	63%	44%	54%
	Other	Total Catch	10	44	4,180	38	36	6	9	4,323
		% Discarded	100%	38%	40%	81%	100%	91%	100%	41%
	Other Flatfish	Total Catch	28	3,234	2,231	1,114	1,819	782	1,262	10,470
		% Discarded	100%	14%	87%	50%	91%	65%	45%	55%
	Pacific Cod	Total Catch	4	1,132	2,198	15,915	6,137	5,833	237	31,455
		% Discarded	86%	58%	94%	20%	90%	67%	92%	49%
	Pollock	Total Catch	0	517	600	5,029	75,930	1,106	272	83,455
		% Discarded	100%	79%	77%	69%	3%	74%	80%	9%
	Rockfish	Total Catch	972	7	11,207	202	351	21		12,760
		% Discarded	50%	25%	11%	36%	86%	82%		17%
	Rocksole	Total Catch		990	3,372	8,512	6,575	25,644	6,064	51,157
		% Discarded		49%	80%	53%	88%	46%	29%	53%
	Yellowfin Sole	Total Catch		2,692	9,370	7,691	16,479	5,177	60,326	101,734
		% Discarded		33%	79%	55%	93%	75%	25%	46%
Total Catch of Non-AFA CPs			69,326	9,631	42,610	44,064	110,854	39,872	74,320	390,677
% Discarded by Non-AFA CPs			20%	33%	55%	41%	31%	54%	28%	34%
Total Catch of all CPs			81,171	12,402	51,086	68,768	636,703	46,281	109,297	1,005,710
% Discarded by all CPs			18%	42%	58%	40%	11%	56%	25%	20%

Table 14: Total catch (mt) and discard rates in the trawl catcher/processor sector, 1996.

AFA	Target Fishery	Data	Species							
			Atka Mackerel	Flathead Sole	Other	Pacific Cod	Pollock	Rocksole	Yellowfin Sole	Grand Total
9	Atka Mackerel	Total Catch	7,208	-	399	401	7	5		8,020
		% Discarded	1%		100%	100%	100%	100%		11%
	Other	Total Catch		0	0	1	1		2	4
		% Discarded		100%	100%	100%	100%		100%	100%
	Pacific Cod	Total Catch	75	136	400	6,852	759	313	1	8,537
		% Discarded	12%	100%	91%	1%	95%	92%	100%	19%
	Pollock	Total Catch	0	945	1,017	2,561	103,909	634	633	109,698
		% Discarded	100%	55%	87%	87%	3%	71%	100%	7%
	Yellowfin Sole	Total Catch		5	390	258	215	370	3,055	4,293
		% Discarded		100%	100%	100%	100%	95%	13%	38%
Total Catch of 9 AFA CPs			7,283	1,086	2,207	10,072	104,890	1,322	3,691	130,551
% Discarded by the 9 AFA CPs			1%	61%	92%	29%	4%	83%	28%	9%
20	Atka Mackerel	Total Catch	1,503		79	33	0	1		1,616
		% Discarded	12%		98%	70%	100%	100%		18%
	Other	Total Catch	184	6	333	48	469	23	110	1,174
		% Discarded	29%	100%	38%	100%	100%	100%	95%	71%
	Pacific Cod	Total Catch	3	35	282	4,701	352	160	5	5,538
		% Discarded	100%	96%	100%	1%	94%	94%	100%	15%
	Pollock	Total Catch	200	1,010	1,696	3,836	371,103	800	651	379,297
		% Discarded	100%	79%	75%	91%	2%	76%	87%	4%
	Rocksole	Total Catch		3	31	52	65	156	165	472
		% Discarded		76%	68%	74%	98%	42%	1%	41%
	Yellowfin Sole	Total Catch		271	3,606	2,302	4,894	3,125	45,758	59,956
		% Discarded		61%	75%	71%	84%	54%	16%	29%
Total Catch of 20 AFA CPs			1,891	1,325	6,027	10,973	376,883	4,264	46,689	448,053
% Discarded by the 20 AFA CPs			23%	76%	74%	48%	4%	60%	17%	8%
No	Atka Mackerel	Total Catch	91,768	6	8,988	8,250	501	139	0	109,653
		% Discarded	16%	69%	70%	21%	99%	92%	100%	22%
	Flathead Sole	Total Catch	0	586	2,787	615	1,310	591	2,339	8,229
		% Discarded	100%	31%	55%	47%	97%	62%	30%	53%
	Other	Total Catch		80	1,112	134	107	14	36	1,484
		% Discarded		39%	60%	93%	100%	76%	97%	66%
	Other Flatfish	Total Catch		5,842	5,786	2,194	4,083	2,419	4,295	24,618
		% Discarded		22%	80%	50%	97%	60%	45%	58%
	Pacific Cod	Total Catch	491	831	1,970	6,189	3,264	3,805	471	17,021
		% Discarded	100%	60%	91%	17%	97%	53%	70%	55%
	Pollock	Total Catch	0	133	289	779	34,186	164	277	35,829
		% Discarded	100%	59%	72%	38%	2%	72%	33%	4%
	Rockfish	Total Catch	2,172	20	16,298	470	302	9	0	19,271
		% Discarded	34%	26%	17%	16%	99%	62%	100%	20%
	Rocksole	Total Catch	0	1,298	4,594	6,867	7,595	18,161	5,754	44,268
		% Discarded	100%	49%	86%	48%	96%	38%	41%	55%
	Yellowfin Sole	Total Catch	0	2,876	9,986	5,224	16,644	9,242	58,290	102,263
		% Discarded	100%	36%	85%	48%	98%	65%	21%	46%
Total Catch of Non-AFA CPs			94,432	11,672	51,809	30,723	67,993	34,544	71,463	362,636
% Discarded by Non-AFA CPs			17%	32%	59%	34%	49%	49%	25%	36%
Total Catch of all CPs			103,606	14,083	60,043	51,768	549,767	40,130	121,844	941,241
% Discarded by all CPs			16%	38%	61%	36%	9%	51%	22%	19%

Source: NMFS Blend Data, 1996

Table 15: Total catch (mt) and discard rates in the trawl catcher/processor sector, 1997.

AFA	Target	Data	Species							
			Atka Mackerel	Flathead Sole	Other	Pacific Cod	Pollock	Rocksole	Yellowfin Sole	Grand Total
9	Atka Mackerel	Total Catch	7,859	0	317	94	14	1		8,285
		% Discarded	4%	100%	99%	100%	100%	100%		9%
	Other	Total Catch		0	0	-	0	0		0
		% Discarded		100%	100%		100%	100%		100%
	Other Flatfish	Total Catch		224	100	31	101	112	120	688
		% Discarded		0%	79%	1%	100%	0%	79%	40%
	Pacific Cod	Total Catch	46	142	302	6,277	629	164	0	7,559
		% Discarded	100%	100%	86%	5%	61%	99%	100%	17%
	Pollock	Total Catch	146	266	501	1,261	101,023	216	13	103,426
		% Discarded	100%	100%	100%	82%	5%	100%	100%	7%
	Rocksole	Total Catch		2	168	50	13	1,199	539	1,971
		% Discarded		88%	94%	24%	75%	12%	70%	35%
	Yellowfin Sole	Total Catch		91	801	519	432	486	9,878	12,206
		% Discarded		40%	95%	63%	94%	90%	28%	39%
Total Catch of 9 AFA CPs			8,051	725	2,189	8,232	102,212	2,178	10,549	134,136
% Discarded by the 9 AFA CPs			6%	61%	95%	21%	6%	44%	31%	11%
20	Atka Mackerel	Total Catch	4,458		73	182	9	3		4,725
		% Discarded	1%		100%	92%	100%	100%		6%
	Flathead Sole	Total Catch		29	369	47	123	240	1,282	2,089
		% Discarded		0%	15%	4%	14%	0%	0%	4%
	Other	Total Catch			3	2				5
		% Discarded			100%	100%				100%
	Pacific Cod	Total Catch	48	59	310	5,235	717	189	21	6,579
		% Discarded	99%	86%	96%	1%	100%	93%	100%	21%
	Pollock	Total Catch	0	983	968	2,399	382,732	841	387	388,310
		% Discarded	100%	98%	91%	87%	4%	98%	100%	5%
	Rocksole	Total Catch		0	36		2	94	145	277
		% Discarded		100%	100%		100%	71%	70%	74%
	Yellowfin Sole	Total Catch		452	4,164	1,107	2,656	2,348	27,268	37,996
		% Discarded		83%	89%	64%	87%	65%	22%	38%
Total Catch of 20 AFA CPs			4,506	1,524	5,922	8,973	386,239	3,715	29,103	439,982
% Discarded by the 20 AFA CPs			2%	91%	85%	34%	4%	70%	22%	8%
No	Atka Mackerel	Total Catch	51,362	3	6,107	1,712	133	49	1	59,368
		% Discarded	11%	94%	51%	32%	89%	81%	100%	16%
	Flathead Sole	Total Catch		211	650	171	298	179	890	2,399
		% Discarded		34%	54%	20%	97%	55%	28%	46%
	Other	Total Catch		68	1,093	29	76	4	17	1,287
		% Discarded		5%	47%	3%	99%	33%	49%	47%
	Other Flatfish	Total Catch		7,781	3,885	2,166	2,882	1,701	1,525	19,941
		% Discarded		17%	84%	28%	99%	83%	44%	51%
	Pacific Cod	Total Catch	38	1,608	3,029	9,356	4,917	7,118	477	26,543
		% Discarded	76%	67%	85%	15%	97%	65%	66%	56%
	Pollock	Total Catch		17	78	221	3,914	120	6	4,356
		% Discarded		78%	70%	42%	22%	81%	95%	26%
	Rockfish	Total Catch	1,705	7	10,301	117	145	8		12,283
		% Discarded	18%	38%	10%	25%	98%	42%		12%
	Rocksole	Total Catch	0	2,316	3,746	8,851	9,022	30,811	6,440	61,186
		% Discarded	100%	67%	93%	45%	97%	44%	32%	54%
	Yellowfin Sole	Total Catch	0	3,191	14,785	8,133	19,301	12,770	116,942	175,122
		% Discarded	100%	35%	87%	30%	94%	70%	15%	35%
Total Catch of Non-AFA CPs			53,105	15,202	43,673	30,757	40,690	52,760	126,298	362,485
% Discarded by Non-AFA CPs			11%	34%	62%	30%	88%	54%	17%	37%
Total Catch of all CPs			65,663	17,451	51,783	47,962	529,141	58,653	165,950	936,603
% Discarded by all CPs			10%	40%	66%	29%	11%	55%	19%	20%

Source: NMFS Blend Data, 1997

Table 16: Total catch (mt) and discard rates in the trawl catcher/processor sector, 1998.

AFA	Target	Data	Species: Atka Mackerel	Flathead Sole	Other	Pacific Cod	Pollock	Rocksole	Yellowfin Sole	Grand Total
9	Atka Mackerel	Total Catch	8,041		525	299	4	8		8,876
		% Discarded	0%		100%	0%	0%	100%		6%
	Other	Total Catch	0	0	6	19	69	0	0	93
		% Discarded	100%	100%	100%	0%	0%	100%		6%
	Pacific Cod	Total Catch	17	109	289	5,684	165	246	1	6,512
		% Discarded	100%	100%	100%	1%	45%	100%	100%	12%
	Pollock	Total Catch	0	264	493	1,134	107,121	76	408	109,496
		% Discarded	100%	97%	96%	10%	1%	95%	99%	2%
Total Catch of 9 AFA CPs			8,058	374	1,312	7,136	107,358	330	409	124,977
% Discarded by the 9 AFA CPs			0%	98%	99%	2%	1%	99%	99%	3%
20	Other	Total Catch		6	55	4	765	6	3	839
		% Discarded		54%	34%	1%	0%	71%	0%	3%
	Other Flatfish	Total Catch		252	37	40	154	326	141	951
		% Discarded		14%	100%	25%	86%	80%	40%	56%
	Pacific Cod	Total Catch	6	69	264	5,517	193	165	24	6,238
		% Discarded	100%	100%	98%	0%	31%	96%	76%	9%
	Pollock	Total Catch	0	923	1,434	2,251	390,954	159	754	396,475
		% Discarded	96%	84%	82%	8%	1%	92%	80%	1%
	Rocksole	Total Catch		42	19	168	254	836	44	1,362
		% Discarded		73%	100%	9%	57%	70%	68%	60%
	Yellowfin Sole	Total Catch		504	2,262	807	3,317	2,596	20,141	29,628
		% Discarded		47%	88%	15%	40%	41%	10%	23%
Total Catch of 20 AFA CPs			7	1,795	4,071	8,788	395,638	4,088	21,107	435,493
% Discarded by the 20 AFA CPs			100%	64%	86%	4%	1%	54%	13%	3%
No	Atka Mackerel	Total Catch	45,840	16	5,433	3,446	283	51	0	55,069
		% Discarded	10%	23%	69%	0%	8%	52%	100%	15%
	Flathead Sole	Total Catch	20	316	2,327	421	299	141	1,602	5,125
		% Discarded	51%	35%	66%	1%	37%	73%	35%	48%
	Other	Total Catch	126	159	9,478	305	366	82	282	10,800
		% Discarded	29%	17%	20%	4%	22%	70%	42%	21%
	Other Flatfish	Total Catch	8	13,029	9,648	2,741	2,217	3,357	4,860	35,860
		% Discarded	3%	15%	83%	1%	41%	75%	55%	45%
	Pacific Cod	Total Catch	760	1,014	18,510	107,025	5,688	3,012	909	136,919
		% Discarded	60%	61%	88%	3%	42%	68%	66%	18%
	Pollock	Total Catch	3	287	675	377	2,647	476	452	4,917
		% Discarded	0%	31%	73%	0%	1%	42%	42%	20%
	Rockfish	Total Catch	724	28	8,268	143	149	9	7	9,327
		% Discarded	19%	9%	8%	0%	7%	100%	100%	9%
	Rocksole	Total Catch	9	1,181	1,937	3,359	3,701	12,249	1,313	23,748
		% Discarded	1%	38%	92%	2%	34%	39%	74%	39%
	Yellowfin Sole	Total Catch	1	4,759	12,844	9,343	11,931	7,186	69,464	115,528
		% Discarded	0%	25%	86%	3%	27%	85%	18%	29%
Total Catch of Non-AFA CPs			47,490	20,791	69,120	127,159	27,279	26,564	78,890	397,293
% Discarded by Non-AFA CPs			11%	22%	66%	3%	30%	60%	22%	25%
Total Catch of all CPs			55,554	22,960	74,503	143,084	530,275	30,982	100,406	957,764
% Discarded by all CPs			9%	26%	67%	3%	2%	59%	20%	12%

Source: NMFS Blend Data, 1998

Table 17: Total catch (mt) and discard rates in the trawl catcher/processor sector, 1999.

AFA	Target	Data	Species							
			Atka Mackerel	Flathead Sole	Other	Pacific Cod	Pollock	Rocksole	Yellowfin Sole	Grand Total
20	Atka Mackerel	Total Catch	578		61	38	1	1		679
		% Discarded	1%		11%	0%	0%	22%		4%
	Other	Total Catch		0	0	3	907	0		910
		% Discarded		100%	100%	0%	0%	100%		0%
	Pacific Cod	Total Catch	23	92	220	5,049	261	163	0	5,809
		% Discarded	99%	94%	95%	1%	48%	96%	100%	11%
	Pollock	Total Catch	0	1,067	813	1,338	328,492	470	84	332,263
		% Discarded	7%	65%	69%	13%	1%	65%	76%	1%
	Rockfish	Total Catch			63		1			63
		% Discarded			0%		0%			0%
	Yellowfin Sole	Total Catch		48	1,214	130	557	362	11,658	13,970
		% Discarded		15%	28%	1%	2%	29%	7%	9%
Total Catch of 20 AFA CPs			602	1,207	2,372	6,558	330,217	996	11,742	353,694
% Discarded by the 20 AFA CPs			5%	66%	48%	3%	1%	57%	7%	2%
No	Atka Mackerel	Total Catch	50,225	62	7,260	2,175	304	64	15	60,105
		% Discarded	8%	34%	90%	5%	49%	92%	29%	18%
	Flathead Sole	Total Catch	44	194	1,904	138	324	93	65	2,762
		% Discarded	34%	18%	70%	11%	74%	79%	72%	63%
	Other	Total Catch	146	197	2,381	155	319	87	212	3,497
		% Discarded	9%	8%	38%	14%	50%	52%	26%	35%
	Other Flatfish	Total Catch	14	10,681	7,435	3,113	3,962	2,510	3,593	31,308
		% Discarded	0%	13%	87%	15%	60%	74%	50%	46%
	Pacific Cod	Total Catch	469	1,567	2,840	11,371	7,818	5,488	379	29,934
		% Discarded	87%	33%	92%	1%	71%	63%	81%	43%
	Pollock	Total Catch	10	15	247	64	2,305	178	197	3,016
		% Discarded	34%	24%	95%	7%	5%	97%	12%	18%
	Rockfish	Total Catch	1,932	4	11,989	174	345	5		14,450
		% Discarded	15%	13%	7%	2%	16%	45%		8%
	Rocksole	Total Catch	0	573	1,088	3,277	5,132	15,878	1,315	27,263
		% Discarded	100%	52%	96%	4%	63%	46%	64%	47%
	Yellowfin Sole	Total Catch	33	2,028	14,163	4,091	7,730	10,249	48,280	86,574
		% Discarded	0%	24%	93%	12%	38%	67%	16%	37%
Total Catch of Non-AFA CPs			52,874	15,321	49,308	24,558	28,238	34,553	54,056	258,909
% Discarded by Non-AFA CPs			9%	18%	67%	5%	52%	57%	20%	34%
Total Catch of all CPs			53,475	16,528	51,680	31,116	358,456	35,549	65,799	612,603
% Discarded by all CPs			9%	22%	66%	5%	5%	57%	18%	15%

Source: NMFS Blend Data, 1999

Note: Only 15 of the 20 original AFA catcher/processors participated in 1999.

Table 18: Total catch (mt) and discard rates in the trawl catcher/processor sector, 2000.

AFA	Target	Data	Species: Atka Mackerel	Flathead Sole	Other	Pacific Cod	Pollock	Rocksole	Yellowfin Sole	Grand Total
20	Flathead Sole	Total Catch			4	0	0	1	2	7
		% Discarded			19%	0%	0%	3%	1%	12%
	Other	Total Catch		0	6	0	90	0		96
		% Discarded		100%	100%	0%	0%	100%		6%
	Pacific Cod	Total Catch	1	19	169	2,398	272	110	2	2,970
		% Discarded	100%	100%	100%	1%	69%	83%	99%	16%
	Pollock	Total Catch	0	564	2,487	509	241,048	1,657	768	247,034
		% Discarded	36%	70%	94%	3%	0%	79%	64%	2%
	Rocksole	Total Catch		2	98	34	79	461	381	1,054
		% Discarded		88%	61%	1%	27%	12%	0%	13%
	Yellowfin Sole	Total Catch		4	682	47	752	658	7,271	9,415
		% Discarded		29%	45%	23%	5%	3%	1%	5%
Total Catch of 20 AFA CPs			1	589	3,445	2,988	242,242	2,887	8,425	260,576
% Discarded by the 20 AFA CPs			95%	71%	84%	1%	0%	51%	7%	2%
No	Atka Mackerel	Total Catch	29,234	20	3,254	1,098	80	15	0	33,701
		% Discarded	6%	10%	89%	1%	11%	88%	20%	14%
	Flathead Sole	Total Catch	4	184	1,960	249	296	94	301	3,088
		% Discarded	0%	14%	49%	1%	61%	57%	36%	43%
	Other	Total Catch	16	193	2,930	99	209	16	6	3,468
		% Discarded	2%	6%	23%	2%	33%	69%	8%	22%
	Other Flatfish	Total Catch	30	9,524	7,885	3,302	5,244	1,799	3,856	31,641
		% Discarded	2%	13%	68%	2%	66%	62%	26%	39%
	Pacific Cod	Total Catch	269	1,264	3,467	12,968	3,704	6,492	959	29,124
		% Discarded	61%	45%	88%	1%	51%	61%	79%	36%
	Pollock	Total Catch		73	78	64	1,104	26	103	1,448
		% Discarded		15%	87%	10%	4%	60%	10%	11%
	Rockfish	Total Catch	32	5	8,819	96	269	2	0	9,223
		% Discarded	20%	22%	4%	0%	49%	7%	100%	5%
	Rocksole	Total Catch	38	1,876	3,140	4,124	5,534	28,360	2,164	45,235
		% Discarded	80%	42%	95%	2%	48%	50%	22%	47%
	Yellowfin Sole	Total Catch		739	7,953	1,860	5,820	4,692	27,140	48,204
		% Discarded		27%	97%	4%	46%	57%	15%	36%
Total Catch of Non-AFA CPs			29,624	13,878	39,486	23,860	22,259	41,496	34,529	205,131
% Discarded by Non-AFA CPs			6%	21%	61%	2%	50%	53%	18%	33%
Total Catch of all CPs			29,625	14,467	42,931	26,847	264,500	44,382	42,954	465,707
% Discarded by all CPs			6%	23%	63%	2%	4%	53%	16%	16%

Source: NMFS Blend Data, 2000

Note: Only 14 of the Original 20 AFA catcher/processors participated at a substantial level in 2000.

APPENDIX IV

(Letter from NPFMC to State of Alaska)

North Pacific Fishery Managment Council

David Benton, Chariman
Chris Oliver, Acting Executive Director

Telephone (907) 217-2809

605 W 4th Ste 306
Anchorage, AK 99501-2252

Fax: (907) 271-2817

visit our webiste: www.fakr.noaa.gov\npfmc

January 29, 2001

Mr. Jeff Bush, Deputy Commissioner
Department of Community and Economic Development
State of Alaska
P.O. Box 110800
Juneau, AK 99811-0800

Dear Mr. Bush:

As you are likely aware, the American Fisheries Act (AFA) requires that the Council prepare a report detailing the impacts resulting from passage of that legislation. One of the areas that Congress specifically requested that we address was the CDQ fishery. The request was embedded within Section 213(d) of the AFA, which states that:

> *"Not later than October 1, 2000, the North Pacific Council shall submit a report to the Secretary and to Congress on the implementation and effects of this Act, including the effects on fishery conservation and management, on bycatch levels, on fishing communities, on business and employment practices of participants in any fishery cooperatives, on the western Alaska community development quota program, on any fisheries outside of the authority of the North Pacific Council, and such other matters as the North Pacific Council deems appropriate."*

The agencies and staff working day-to-day with these management programs are in the best position to provide a detailed discussion of the impacts that the AFA has had to date. Given the State of Alaska's expertise with the CDQ program, the Council is requesting that the State provide a summary of the impacts the AFA has had on the CDQ program. The document should be structured as a stand-alone section for the overall report to Congress, not to exceed 50 pages, with an Executive Summary not to exceed 5 pages.

The October 1, 2000 due date for the report is long past. However, given the newness of the program and the other issues that have been vying for our attention, meeting that date was simply infeasible. We are instead trying to develop a comprehensive report for Congress and the Secretary of Commerce by the end of April. Given the revised time line, we are requesting that the CDQ portion of the report be completed and delivered to the Council office by April 6, 2001, so it can be reviewed by the Council at our April meeting.

Language in the AFA does not specify the information that should be supplied regarding the CDQ program. Much of the detail will be left to your discretion, however, at a minimum we suggest that the following issues be addressed:

1. Changes in business relationships between CDQ groups and fishing partners.

2. Changes in revenues generated from the pollock fishery resulting from the CDQ allocation increasing from 7.5 to 10% of the BSAI pollock TAC. This should be in terms of overall revenues and $/mt when possible. We understand that this may be complicated by the structure of business relationships that have developed between CDQ organizations and their partners.

3. Distribution of royalties from the program.

4. Changes in employment in the CDQ villages as a result of the AFA, as well as the employment opportunities that have been made available.

5. Changes in CDQ projects or project completion dates resulting from the AFA. (Have increased revenues allowed additional projects to be added or have completion dates for existing projects been moved up).

6. Changes in educational opportunities.

7. Other social changes in the CDQ villages (how is life improving for residents as a result of the program).

8. What do the CDQ communities themselves feel the most significant impact of the AFA has been?

9. Other issues?

Thank you for your help in making sure that this project is a success and the impacts of the CDQ program are understood. Let me know if it will be possible for you to address this request, or if you or your staff would like to discuss any aspects of this request in more detail. I look forward to working together on this project.

Sincerely,

Chris Oliver

Chris Oliver
Acting Executive Director

cc: Kevin Duffy

APPENDIX V

(CDQ group assets, revenues, royalties and allocations)

APPENDIX VI

(CDQ ownership in groundfishing industry)

CDQ Ownership in Bering Sea/Aleutians Island Groundfishing Industry

Group	Year	Company	% Ownership	Vessel	% Ownership
APICDA	1999			Starbound	20%
	1996			Golden Dawn	25%
BBEDC	1996			Arctic Fjord	20%
	1999			Neahkahnie	20%
CBSFA	2000	American Seafoods	~3%	Northern Hawk	~3%
				American Triumph	"
				Northern Jaeger	"
				Ocean Rover	"
				Katie Anne	"
				Northern Eagle	"
				American Dynasty	"
CVRF	2000	American Seafoods	~20%	Same as CBSFA	~20%
NSEDC	1998	Glacier Fish Company	50%	Northern Glacier	50%
				Pacific Glacier	50%
YDFDA	2000	Golden Alaska Seafoods	~20%	Golden Alaska	~20%
				Alakanuk Beauty	75%
				Emmonak Leader	75%

APPENDIX VII

(CDQ employment, training and wages)

APPENDIX VIII

Social Impact Assessment Study Methodology

The research generally followed the steps outlined below. In practice, a number of different tasks took place simultaneously.

- *Preliminary Data Analysis*. NPFMC staff provided the subcontractor staff with sector and location data throughout the project. Results included homeport data, harvest data, and other relevant data by sector/location. These data were used initially to help focus the research effort, including facilitating the specification of field sites and people to contact. Much of this effort was in effect an augmentation of the earlier work accomplished for the Groundfish SEIS, and used that work as a foundation.

- *Formulate Study Plan, including a Field Plan*. Following a preliminary examination of the current fishery data, an overall study plan, with emphasis upon the field plan for collecting additional sector, and especially community information, was prepared.

- *Summarize Relevant Existing Information*. Prior to the collection of field data, existing information relevant to the Report to Congress on the effects of AFA was summarized. For the most part this already existed in the Groundfish SEIS, which has incorporated important sources such as the 1991 community profiles and accompanying SIA, and the 1994 Sector Profiles and Supplemental SIA (and supporting materials), and the 1998 Inshore/Offshore-3 analysis previously prepared by team members for earlier NPFMC groundfish management tasks. These materials, along with other relevant sources, were used to develop preliminary pre-field regional and community profiles, to identify information gaps, and to guide field interviews and research.

- *Conduct Field Visits to Collect Required Information*. Field time was limited by schedule and resource constraints. Brief field site visits were made to Unalaska/Dutch Harbor (Downs, 5 days), Sand Point (Galginaitis, 3 days), Kodiak (Galginaitis, 4 days), and Seattle (Downs, 3 days and Galginaitis, 5 days). Weather, difficult logistics, and the press of time prevented a planned trip to King Cove (2 days originally scheduled). Other in-person contacts were made in Anchorage.

- *Incorporate Additional Council Staff Analysis*. The socioeconomic portion of the Report to Congress on AFA effects incorporated and discussed Council staff analysis in several related areas.

- *Prepare Report*. Primary data and secondary data were analyzed, and a comprehensive draft report prepared. The draft report included regional and community profiles, and impacts analysis by region and community based on these profiles and sector information contained in other parts of the document.

- *NPFMC Meeting and Consultation*. Meetings and consultations were required over the course of the contract, and agency and industry contacts beyond the fieldwork outlined above took place at NPFMC meetings over the period of January through June 2001. A draft report was distributed, and results were presented at the June 2001 NPFMC meeting in Kodiak. Questions and suggestions were received at the SSC, the AP, and the Council meeting itself. Additional comments were received during the public comment period following the June 2001 meetings. To the extent feasible within time and resource constraints, this document has been modified and expanded to address the questions and suggestions received. The final review of this document is scheduled for the October 2001 NPFMC meeting in Seattle.

Information Goals, Objectives, and Techniques

Methods used were similar to those used by the researchers for past NPFMC projects. General community contacts were renewed (and, where necessary, established) with key community officials in order to gain access to the community and collect planning documents and other contextual information. This was confined for the most part to that information required to update the existing community profile for the specific communities identified as primary field sites in the scope of work. Contacts were chosen on the basis of our prior knowledge, the official position they occupied, or the consistent recommendation of a number of fishery participants ("snowball sample" approach). Thus, the people we talked with are not a representative sample of the fishery as a whole, but rather were chosen as especially knowledgeable and/or as potentially especially linked to community effects in regard to the AFA. They thus represent a judgemental sample from a select number of categories. That is, not all categories were represented, and not all were equally represented (see sampling discussion below). The intent of this strategy was not to provide a statistically random sample, rather, it was to provide access to a broad range of information to be able to characterize the direction and magnitude of changes seen in the communities as a result of the AFA based on decision making informed by more than a decade of working on related fisheries issues in these communities for more than a decade.

Implementation of this study generally followed the standards for ethnographic work and the methods of Rapid Ethnographic Assessment Procedures as outlined by the NPS in the *Cultural Resource Management Guideline*, Release 4 (National Park Service 1994) and the NOAA Guidelines and Principals for Social Impact Assessment. Implementation of this study used multiple data collection techniques, discussed below in terms of documentary research and ethnographic research. Separate discussions are also devoted to sampling and other special considerations.

Because of the unique circumstances of this project, much of the previous literature and other documentary sources had already been compiled in previous work. Since the action to be taken was a continuation of a previous action, and the analysis built upon that for this earlier action (and parallel actions already underway by Council staff, such as the Steller sea lion EIS effort), the research required was more in the way of an update and supplementation than a complete new construction. Thus there was little need for a new literature review as such.

Industry participant and municipal official contacts were a primary means through which existing profiles were updated. Our main method was to talk with a broad range of industry participants from each of the sectors identified as important components of the AFA structured fisheries -- shoreside processors (fixed location plants as well as inshore floating processors), offshore catcher-processors, and catcher vessels (which may deliver onshore, offshore, or both). Interviews were also conducted with individuals from support service sector businesses and, in the case of the Alaska communities, with individuals knowledgeable about other community economic sectors as well as with participants in other locally pursued fisheries. As in previous projects, our conversations were guided by a research protocol so that we could collect comparable information from those people we talk with, without submitting them to the time requirements of a more formal and inflexible survey instrument. The time horizons for this project were too short to allow for the development of a formal survey instrument which would have been subject to a lengthy review process by the Office of Management and Budget, because of the Federal funding of the project. Again, as in previous projects, employment and labor participation were addressed primarily through direct industry sector contacts, although it was also part of the community profile discussion. Most specific employment information was developed as part of the field interview process (and follow-up data requests from industry associations and individual entities).

Preliminary examples of the protocols used in the field were derived from those used in our work in support of the NPFMC's Groundfish License Limitation analysis (1994), the Inshore/Offshore-3 analysis (1998), and the Groundfish SEIS (2001). Samples of these appear at the end of this document. As with previous projects for the Council, these were subject to internal team review and modification following initial field contacts, but they represent the main topical or information issue areas about which relatively consistent information needed to be developed for the purposes of this project.

Most of our primary research effort was devoted to field work. The ethnographic methods utilized are based on traditional anthropological and social science methods to investigate the nature and meaning of public values, attitudes, and beliefs. These schema and context data were collected through primarily open-ended, key informant interviews with persons representing different sector/community interest groups. Also, keeping in mind that a good portion of the field effort was directed toward updating information already in hand (and often collected from the same individuals or entities contacted for previous study efforts such as the Groundfish SEIS fieldwork that took place during 2000) for most interviews only a subset of protocol topics were pursued after some general questions were asked regarding relevant changes since the last set of interviews. Our experience has been that if the interviewee is discussing topics of interest that it is generally more efficient overall to allow him or her to guide the discussion rather than to impose the more artificial structure of direct questions. A more inflexible, formally structured, interview often produces much less direct information and very little interpretative context. The successful use of protocol interviewing of course depends upon the judgement of the interviewer, but is a technique with which we have much experience. Even with a "standard" protocol, not all interviews/contacts were guided by them to the same extent. We briefly discuss several of these special interview situations below.

"Standard Protocol" Interviews: The most common interview situation involved the researcher talking with an individual about his or her participation in the fishery, but often in a group context for larger corporate fishery entities. The interview was guided by the use of a protocol which specifies certain areas of interest and topics to be covered.

Key Person Interviews: Most of the initial interviews completed were 'key person' interviews. Key person interviews are conducted with people who hold central positions in public or private community organizations, or are key participants in the activity of main interest. These types of interviews are only semi-structured because the interviewees involved usually have busy schedules and time constraints. Although semi-structured interviews maintain the same open-ended quality of informal interviews, the structure of the interviews are determined by the researcher. Semi-structured interviews are usually employed in situations in which the researcher only has one chance to interview an informant. All interviews were be recorded in narrative form, primarily by written notes. Upon review of the data, follow-up interviews or contacts were sometimes arranged to clarify or obtain further information.

Group Meetings: There were many occasions when we had meetings of the researcher(s) with a number of people at the same time. These were not always predictable. Often the person with whom the meeting had been arranged would have asked one or more additional employees to attend, to provide information as well as to keep them informed of our role in the NPFMC's research and information gathering to support their decision-making process. There were other occasions when a number of fishery participants would talk with us as a group, either because they all happened to be in the same place and/or because they (or we) did not have the time or flexibility to talk individually. In our experience, local people can be interested in such group meetings for a number of reasons -- to find out from the researcher what he or she is doing, to communicate to the researcher some specific sorts of information, or to make themselves available to the researcher for whatever he or she wants to know.

Participant Observation: Participant observations are among the standard methodologies used in anthropological research. While this is a method that is best suited to longer term work, it may nonetheless be applied on a limited basis in shorter term fieldwork. This approach requires that the researcher establish a rapport with individuals in research communities and to engage this community and its members so that there is minimal disruption of the usual flow of everyday activity. This technique is valuable even in limited, focused efforts when there is an opportunity to engage some portion of a community about a focused topic as well as interact with individuals outside of the interview context per se. This process was facilitated by the individual researchers' previous experience. In addition to having many years of formal research experience in general, Mike Downs has been doing ethnographic research in Unalaska/Dutch Harbor (and, to a much lesser degree, Akutan) since 1982; Michael Galginaitis began working on Southwest Alaska region projects in 1985. Both Downs and Galginaitis have both worked in the communities relevant to the present work on NPFMC specific projects since 1990.

Nonreactive Observations: Nonreactive observations are sometimes referred to as "unobtrusive" measures, and refer to a research approach that does not require the participation of an informant. Unobtrusive observations typically have little no impact on what is being studied, and include all methods for studying behavior and context in which informants do not actively participate. One of this technique's main concerns is to avoid sensitizing informants to issues that are important to the researcher. Thus, researchers do not ask informants direct questions about individual behavior or community patterns of behavior. Instead, they conduct systematic observations that measure behaviors of interest in a less direct form. As an example, researchers may count vessels at various private docks or public moorage locations to gain insight into patterns of use during fishing seasons that may then be followed up on during interviews. Such measures sometimes provide insight and information that is often unobtainable through other techniques when informants are aware of the researcher or subject matter of interest, particularly where a strong potential for biasing answers exists. Nonreactive observations are especially useful when weighing conflicting information from different informants. Again, given the limited scope of the field research for this project, these techniques were of limited utility, but were employed to a degree.

Informal "Unstructured" Interviews: Informal interviews are often considered to be a form of participant observation. However, an unstructured interview differs from a conversation held during participant observations. While participant observation implies letting a 'cultural consultant' define the form and content of conversations, informal interviews are clearly interviews. That is, when the researcher meets with informants, he or she has a clear plan in mind concerning conversational topics, but does not have a specific set of questions that should be asked. Although the researcher establishes the general direction of the conversation, he or she maintains little control over the direction or topicality of informant's responses. The objective of this type of interviewing is to allow the informant to speak freely and at his or her own pace. These types of interviews are often useful in conjunction with more formal interviews when more than one informant is present.

Sampling

Obtaining a randomly selected and statistically representative sample was not the goal of this study. Rather, for this type of study data are needed from a non-random but systematically selected sample. The intention of this study is to identify knowledgeable "industry experts" and key fishery participants who can identify relationships and associations (both historic and current) between themselves and other fishery participants. Also targeted were community officials, and key persons in other sectors of the local economy and social structure to allow for a characterization of the role of the fishery in the local economy and a description of (and perspective on) co-occuring changes over the relevant time frame.

Given that a specific type of information is desired, and this information is not randomly distributed within the group, efficient gathering of these data required a well defined, targeted approach. Such targeted sampling approaches include quota sampling, purposive sampling, and "snowball" or network sampling. These methods are systematic approaches to the identification of appropriate interviewees. Each is briefly described below.

Snowball sampling may be used as an entre for research with members of various interest and stakeholder groups as a means to identify the full range of groups that are similar to or different from the point of entre. Like most other research of this type, initial field data collection among any particular group identified will almost always begins with informant networking. Networking is a process whereby the researcher requests several key informants to identify others who would be suitable to interview. The process begins with the researcher contacting and interviewing a person who holds a formal status in the group, such as an association executive director, or the like. The informants are apprized of the research project during the interviews, and if they are confident that the researcher will not violate group interests and values, they will usually refer the researcher to other knowledgeable individuals. This sampling technique provides an effective means of building an adequate sampling frame in short order, particularly in a small population where people are likely to be in contact with one another and when the research is focused to the point where the type of information desired is held by a relatively few individuals. Snowball sampling is also a useful tool when studying small, bounded, or difficult to locate populations. In this case, we started with the various industry and/or sector associations and worked outward in addition to recontacting individuals known from previous research.

Quota sampling can be used to a degree to assure adequate coverage of geographical areas, interest groups, and stakeholders. In quota sampling the researcher decides on the categories of interest before the research begins. The sample is selected from those predetermined categories and then a targeted number of individuals are interviewed from each category. That is, the researcher constructs a matrix describing all of the characteristics of information to be obtained. A relative proportion is assigned to each cell in the matrix, and data is collected from persons who possess the characteristics of a given cell. Of all the nonprobability sampling techniques, quota sampling closest to approximating a true random sample. In addition, it guarantees that all the research categories of interest will be represented in the study. In most instances, it is possible to indicate some sort of estimate or evaluation, since this sort of sample represents the population from which it is drawn. Under extremely good conditions, quota sampling results in a stratified random sample, but in most cases it is not possible to determine if members of all categories have had an equal chance of selection. For the purposes of this research, the relatively small number of interviews conducted in any one location, and the focus of such interviews on "key" people and sector/industry experts, would not result in any sort of random sample in any event, however, the research did benefit from well defined categories for the beginning 'matrix' so this did not prove to be a significant difficulty.

Purposive or "judgement" sampling refers to the selection of a sample based on what the researcher believes will yield the most comprehensive understanding of the subject under study. This sampling technique is similar to quota sampling in that the researcher selects his or her target categories of inquiry based on the objectives of the research. However, for this type of sample there is no overall sampling design that dictates how many respondents from each category are needed for the study. Purposive samples are often used when a researcher wants to select only a few cases for intensive study, when conducting life history research, or when engaging in qualitative research on special populations. The potential problems of defining and enumerating the sampling universe exist for this method as well. This type of sampling, in practical terms, means keeping the design flexible so that, in the words of National Standard 8, "the analysis does not have to contain an exhaustive listing of all communities [or, by extension subcommunities or subsectors] that might fit the definition [of fishing communities]; a judgement can be made as to which are primarily affected" (Fed Reg 1997:41918). Purposive sampling allows for reasoned judgement in adjusting interview targeting strategies once the fieldwork is underway, information begins to be developed, and salient issues begin to become apparent.

Use of formal interview instruments that would require OMB approval was precluded by the short time horizon and amount of resources available for the work. Further, it was recognized that representative samples in a statistical sense (at least for some communities and sectors) would not be achievable. A complete characterization of the population before sampling was infeasible (such description was, after all, one of the intended goals of the research), and the random selection (and contact) of interviewees impractical. Given these limitations, the sampling strategy was guided by a statistical description based on historical fishery participation data, with special emphasis on the most recently available information (2000). Based on this categorization and the focus on community effects, and in view of the amount of other information already available and a judgement as to the extent of change in different sectors of the fishery since the construction of the last sector profile, the decision was made to focus on those regions (and communities within them) with the most direct linkages to the Bering Sea groundfish fishery -- the Alaska Peninsula/Aleutian Islands region, the Kodiak region, and Washington inland waters region. No targets for "samples" were set in each community, primarily due to the brevity of field time in any field location, and the availability of prior information. Field work for this project was in essence to "calibrate" the existing information in terms of its applicability and usefulness for this document. Target goals for the adequate description of each sector and a discussion of the dynamics of change in that sector were established.

No attempt was made to contact past fishery participants who were not active in the fishery after the effective date of the AFA. For sectors with a small number of participants it was judged necessary to contact as high a proportion of category members as possible, within the constraints of the project. This was most pressing in the processing sectors. All pollock mothership operations were contacted, as were all of the Bering Sea shore plant operations (the entity processing Bering Sea pollock in Kodiak was not targeted). The shoreplant in Sand Point, but not in King Cove, was contacted. For catcher processors, sampling was more problematic due to the variation in operational size within this sector. In this case, we worked through the industry association for some descriptive/statistical information, and then targeted the larger entities that were known to have experienced the greatest change in operations under AFA to follow up on the social impact aspect of those known changes. For catcher vessels, due to limitations of time and resources, and the dispersed nature of the sector, we worked though United Catcher Boats for fleet level data, and supplemented this with opportunistic interviews in the field and at NPFMC meetings. Catcher vessels interviews are inherently a difficult challenge, partly because of the larger number of individual entities and the variation among them, as well as the wider geographical distribution of these entities. As with the catcher processor sector, some business entities operated more than one vessel, and in those cases information obtained about individual vessel operations was less detailed than for other entity interviews. In any event, less emphasis was placed on these interviews for two reasons. First, we are concerned primarily with community effects (not sector effects), and community effects due to vessel-related effects of the AFA on communities were judged to be potentially less than for processor-related effects. Secondly, the time and resource constraints of the research dictated that relatively few such interviews be conducted. We did ensure that catcher vessel organization representatives in Seattle, Kodiak, and Sand Point were contacted, and shoreplant fleet managers in Dutch Harbor, Seattle, Kodiak, and Sand Point were also contacted.

We also made an effort to contact a number of fishery support service entities in each community, although we did not try to establish the sample universe. In practical terms, however, we were able to cover the range of these businesses in the smaller Alaska communities where the types of entities and the total number of these entities is few. (For

Unalaska/Dutch Harbor, support service businesses were a specific focus of this research due to the fact that this community has a more highly developed support service sector than other communities in the region, information on this sector was relatively undeveloped, and that these businesses as a group were seen to be a likely nexus of AFA related fishery/community intersection impacts.) These interviews were used to elicit local views on community trends, in terms of fishery dynamics, since the passage of AFA. For the most part, this information confirmed the information derived from other measures, which were also based on partial, rather than complete or statistically representative information (housing sales, tax revenue trends, spending in general). Interviews with "key" community officials also fit into this category, as the information derived from them was not robust enough by itself to establish any trends or conclusions, but in conjunction with other information was useful to establish at least the direction (if not the magnitude) of effects. The following table provides a summary of in-person field contacts. This table does not include contacts made at NPFMC meetings, limited input gathered by phone interviews, or input via public testimony or by comment letter.

Number of Field Interviews by Community and Sector

Community	Sector	Count
Unalaska/Dutch Harbor	City	8
	AFA Shore Processors (Companies)	4*
	Non-AFA Processors (Companies)	3*
	Pollock Catcher Processor (Company)	1
	Native Corporation	1
	Fishery Support Service Providers	18
	Retail	2
	ADF&G	2
Sand Point	City/School	4
	Native Corporations	2
	AFA Shore Processors (Companies)	2
	Fishermen/Catcher Vessels	12**
	Retail	3
Kodiak	Non-Groundfish Shore Processors (Companies)	1
	Groundfish Shore Processors (Companies)	5
	Fisheries Organizations	5
	City	4
	Fishermen/Catcher Vessels	3
	Fishery Support Service Providers	2
Seattle	Fishermen/Catcher Vessels	6
	Fisheries Organizations	5
	Pollock Catcher-Processors (Companies)	4
	AFA Shore Processors (Companies)	2
	Motherships (Companies)	3*
	City/Fisheries Support Service	3
	City/Planning	2

Notes: Where "company" is identified, more than one individual (and often several) may have been contacted and/or interviewed singly or in a group.
* 100% sample
**Two mornings were spent in discussion at the harbor house with those present. Information and opinions were voiced by approximately 12 individuals, with 3 or 4 “main spokesmen.”

Other Methodological Considerations

There are four interrelated concerns that should be noted regarding the data utilized in this research. These topics are industry participation, confidentiality, informed consent, and self-interest.

Industry Participation: The ability to carry out this project depended to a large extent on the active involvement of industry participants. Given the real-world constraints associated with this project, we approached this industry organizations early in the study and asked for their assistance in providing aggregated data from and their membership. These groups also facilitated contact with member and non-member entities alike.

Confidentiality: The tasks required for the specified scope of work impose substantial challenges in the area of guaranteeing confidentiality for those research participants who desire this protection. Any ethnographic field work in small communities requires that the form of publicly disseminated products be carefully designed and written so that the privacy of individuals are protected. When this is combined with potential financial and operational confidential information concerns, these considerations are even more accentuated. A verbal process of informed consent for research participants, combined with the coding of field notes and a restrained use of information identifying individuals in public reports, is usually adequate to handle these problems. This project was less problematic in these regards than it could have been because of the clear awareness most industry participants have in these areas, and their familiarity with the Council analysis and decision-making process.

Informed Consent: Informed consent is a very difficult subject, because if everyone were truly "fully informed" of all of the more remote potential consequences of their participation, this would be an extraordinarily extensive discourse, and few would be likely to participate in whatever they are being asked to do. Most social science is conducted within ethical guidelines and with verbal, or even implied, informed consent obtained. Verbal informed consent, though a disclosure of the research goals and process, as well as contractor and sponsor information, was a part of every interview, as was the question of whether or not the individual wished to speak with us. (Notes made about public behavior were not subject to such informed consent.)

Self-Interest: It must be recognized that much of the information, other than that derived from data sets obtained from NPFMC staff, is from parties with a vested interest in the management decisions made by the NPFMC. As such, all can contain potential sources of bias. This is not an unusual situation, however, and truly "objective" information about any human endeavor is extremely rare. The object is not to eliminate self-interested information from this research, but rather to balance that information with data from other sources. The research context associated with this project differed from other recent similar efforts because this research did not involve the analysis of future alternatives with quota allocation components. As a result, data collection took place in a much different environment than, for example, the Inshore/Offshore-3 analysis. In the I/O-3 context, different industry sectors were competing for position vis-a-vis other sectors in a zero-sum game, and portrayal of information in a particular light was potentially a matter of great economic significance. As a result, research took place in a highly charged atmosphere. This type of overt self-interest positioning was largely absent in the present research.

Processing Entity Protocol: CATCHER/PROCESSOR, MOTHERSHIP, and SHORESIDE MANAGEMENT

History of Operations
- Company History
- History of Operations
- History of Ship
- Past and Current Waters of Harvest/Reception
- Location by species
- Location by ease of delivery by incoming vessels?
- Place of product delivery (Where does it go)
- Average length of stay/degree of mobility

Product
- Daily Volume Capacity by Species
- Annual Cycle by Species
- Changes in Recent Years
  - Different Species
  - Different Product (canning, freezing, surimi, etc.)

Employment
- Number of Employees at Peak during year
- Number of Employees at Ebb
- Employment Cycle description (length of stay on-board, onshore, special type of worker/relationship to home community?)
- Point of Hire
- Type of Employment Contract
- Recruitment Procedures
- Employee Turnover/Longevity by Job Category
- Housing Arrangements/Capacity
- Demographics of Employees (age/sex/ethnicity patterns)
- Range of Job Categories
- Employee wage range by job classification

Delivering Fleet (for motherships and shoreside -- if possible names of vessels, length of association with plant)
- How many vessels/what type of vessels deliver here on a regular basis
- Where are those vessels from
- What about irregular deliveries (routing and changes in routing? influences to change?)
- What services do you provide for the fleet

Future Directions
- Where do you see the industry going
- Do you see the role of pollock/other species changing in your operation in future
- Evaluation of AFA in managing the fishery -- industry-wide and in terms of this specific economic enterprise
- Preferred management tools or options for perceived problems
- How has AFA changed things, and has it established or maintained stability in the fishery?

Harvesting Entity Protocol: HARVESTER/SKIPPER-OWNER
(Note: This protocol was used for catcher vessels, both shoreside and at-sea delivery vessels)

History of Participation
- Vessel Specifications (current vessel)
- Vessel History (ownership, economic activity, vessel modifications, why?)
- Home Port/Harvest Area History
- Gear Types Used
- How long have you been a skipper/owner?

Product
- Daily Harvest Capacity by Species
- Total On-Board Product Capacity
- Annual Cycle by Species (what happens if a species is down, perceived options)
- Changes in Recent Years
  - Different Species
  - Different Areas
- Where is your product landed (by species) and what influences this
- Do you usually deliver to a single processor/mothership (why/why not, market value? joint venture? how have co-ops changed this?)

Employment
- Different Categories of Crew Positions
- Number of Crew by Category by Season
- Employment Cycle Description
- Type of Employment Arrangement (share, wages, etc.) by crew category
- Recruitment Procedures (where/why/how including kinship, reputation, replacement crew)
- Employee Turnover/Longevity by Crew Category
- Demographics of Employees (age/sex/ethnicity patterns)
- Employee compensation range by category

Fleet
- How many vessels in the fleet
- Do you cooperate with other vessels in the fleet?
- Where are different species landed and what influences where
- Where do you obtain services (repair, maintenance, etc.)
- Do you belong to any fishing industry associations? (how involved)

Future Directions
- Where do you see the industry going
- How do you see things changing for your operation/vessel in the future
- Do you see the role of pollock/other species changing in your operation in future
- Preferred management tools or options for perceived problems
- How has AFA changed things, and has it established or maintained stability in the fishery?

Protocol: SECTOR-BASED ASSOCIATIONS
(Note: this protocol was used for such entities as sector associations and fishery interest groups, as relevant)

Who does this group represent
What is the history of this association
Where are the members drawn from
Are there organizations similar to this one
How large is the membership
How large is this in relation to the potential number of members
How has membership changed over the years
What are the main reasons for having this organization (why was it formed /purpose)
What are the current issues facing association members
Where do you see the fishing industry going
How do you see things changing for your association/group in the future
Do you see the role of pollock/groundfish/other species fisheries changing in future
How has AFA changed things, and has it established or maintained stability in the fishery?

What categories of people involved in the industry belong to the Association?
Who are some local owners, operators, and specific vessels engaged in this fishery?
Are there any other organizations that represent people who participate in this fishery?