

INITIAL REVIEW DRAFT

**REGULATORY IMPACT REVIEW,
ENVIRONMENTAL ASSESSMENT, AND
INITIAL REGULATORY FLEXIBILITY ANALYSIS**

For proposed Amendment to the
Gulf of Alaska Fishery Management Plan

CENTRAL GULF OF ALASKA ROCKFISH PROGRAM

Prepared by staff of the:

North Pacific Fishery Management Council
605 West 4th Avenue, #306
Anchorage, Alaska 99501-2252
Ph. (907) 271-2809

and

National Marine Fisheries Service
Alaska Region
P.O. Box 21688
Juneau, Alaska 99802-1168
Ph. (907) 586-7465

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Executive Summary

In 2003, the U.S. Congress directed the Secretary of Commerce to establish, in consultation with the North Pacific Fishery Management Council (the Council), a pilot program (the rockfish pilot program) for management of the Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish¹ fisheries (the target rockfish fisheries) in the Central Gulf of Alaska. Following this directive, in 2005, the Council adopted a share-based management program under which the total allowable catch is apportioned as exclusive shares to cooperatives based on the catch history of the members of those cooperatives. Although originally subject to a sunset after 2 years, the 2007 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (the MSA) extended the term of the program to 5 years. Under this extension, the program is scheduled to sunset after the 2011 season. In the absence of Council action, management of the fisheries would revert to the License Limitation Program (the LLP). This action considers alternatives to allowing the fishery to return to LLP management, in order to maintain the benefits derived under the rockfish pilot program.

Problem Statement

The intent of this action is to retain the conservation, management, safety, and economic gains created by the Rockfish Pilot Program to the extent practicable, while also considering the goals and limitations of the Magnuson-Stevens Fisheries Conservation and Management Act Limited Access Privilege Program (LAPP) provisions.

The existing CGOA Rockfish Pilot Program (RPP) will sunset after 2011. Consequently, if the management, economic, safety and conservation gains enjoyed under the RPP are to be continued, the Council must act to create a long term CGOA rockfish LAPP. For both the onshore and offshore sectors, the RPP has improved safety at sea, controlled capacity of the fleets, improved NMFS' ability to conserve and manage the species in the program, increased vessel accountability, reduced sea floor contact, allowed full retention of allocated species and reduced halibut bycatch. In addition, the rockfish fishery dependent community in the CGOA and the shorebased processing sector have benefited from stabilization of the work force, more shoreside deliveries of rockfish, additional non-rockfish deliveries with the RPP halibut savings, and increased rockfish quality and diversity of rockfish products. Moreover, the CGOA fishermen, and the shorebased processing sector have benefited from the removal of processing conflicts with GOA salmon product. The Council needs to resolve identified issues in the management and viability of the entry level fishery.

The portion of the current catcher processor sector currently participating in the rockfish coop have also benefitted from the RPP. These benefits include greater spatial and temporal flexibility in prosecuting the fishery, which result in lower bycatch, a more rational distribution of effort and more stable markets. Certain provisions of the current RPP act as disincentives to some CP operators from joining the coop sector and achieving these benefits. These disincentives should be eliminated to the extent practicable in the new RPP.

¹ Pelagic shelf rockfish comprises light dusky rockfish, yellowtail rockfish, and widow rockfish.

Alternatives

To address its problem statement, the Council has adopted for analysis alternatives for three different sectors (i.e., entry level, catcher vessels, and catcher processors). These program alternatives are generally derived from a common set of elements and options with sector specific elements and options that reflect operational differences. The specific elements and options that define the alternatives follow the description of the alternatives (including the status quo) below.

For the **entry level sector**, three alternatives have been defined. The first is the no action alternative, under which management would revert to the LLP and any holder of an LLP license (or person exempt from LLP license requirements) could enter a vessel in the rockfish fishery. The second alternative is the current entry level management structure under the pilot program. Under this alternative, catcher vessel license holders that do not qualify for participation in catcher vessel program can participate in a derby fishery for 5 percent of the target rockfish TAC. This entry level TAC is divided equally with half available to trawl gear participants and half available to fixed gear participants. The third entry level alternative would provide for only fixed gear entry level fishery.

Three alternatives are defined for the **catcher processor sector**. The first is the no action alternative, under which the fishery would revert to LLP management. The second alternative would create a cooperative program, which allocates to the trawl catcher processor sector target rockfish and secondary species (historically harvested in conjunction with target rockfish) and halibut prohibited species catch (PSC) based on the harvest history of sector members. Eligible sector participants could then access exclusive allocations through cooperative membership. The third alternative is the existing pilot program structure, which is similar to the cooperative alternative, but also allows eligible catcher processors to enter a limited access fishery, instead of joining a cooperative.

Four alternatives are defined for the **catcher vessel sector**. The first is the no action alternative, under which the fishery would revert to LLP management. The second alternative would establish a cooperative program for catcher vessel sector under which eligible catcher vessels could participate in the fishery only by joining a cooperative, which would receive an allocation of target rockfish, secondary species, and halibut PSC based on historic catches. The third alternative would divide harvest share allocations of target rockfish, secondary species, and halibut PSC between historic catcher vessel participants and historic processing participants, with allocations within each sector based relative historic participation within that sector. Under the final alternative, a harvester must join a cooperative in association with a processor. The harvester has full discretion in choosing a cooperative both initially and annually thereafter and may change cooperatives (and accompanying processor associations) without penalty or forfeiture of harvest quota.

Analysis of the Alternatives

Status Quo

Under status quo, the CGOA rockfish fishery would revert to LLP management. Reverting back to LLP management is likely to result in fishing practices and patterns similar to those prior to the pilot program. In that fishery, trawl vessels raced for catch of rockfish when the trawl season opened in July. Typically, Pacific ocean perch was caught first, followed by northern rockfish and pelagic shelf rockfish. The quality of fish harvest would likely suffer from a return to the race for fish. In addition, catcher processors must also process the rockfish rapidly to maintain quality and accommodate additional catch. Modest increase in participation might be expected, if the fishery reverts to LLP management.

Processing participation and practices are likely to be similar to those seen under LLP management prior to implementation of the rockfish pilot program. Catcher processors in the rockfish fisheries prior to the rockfish pilot program produced mostly whole and headed and gutted products, therefore these vessels would likely continue to process catch in similar manner under status quo. Production efficiency for the catcher processors sector would likely be limited slightly by the race for fish under an LLP managed fishery. Although catcher processors process their catch quickly relative to catcher vessels, the quality of harvests could suffer to some extent as participants race to maximize their catch rates. Diminishing quality dissipates a portion of the resource rents that would otherwise be available.

Production efficiency of catcher vessels under status quo would also be limited by the short, race for fish that will result under status quo. Increasing catch in each tow and filling holds can damage rockfish that are difficult to handle. Status quo would also likely extend trip lengths to increase catch per trip which can result in a decline in the quality of rockfish. Returns to catcher vessels under status quo would likely be limited both by the quality of their landings and the compressed time period in which those landings must be made. Most processors would likely process deliveries quickly to keep pace with the landings. These conditions could dampen competition for landings among the participating processors to some extent. Quality would likely suffer because of the rapid rate of harvest and processing, which would likely lead to the production of relatively lower value and lower quality products. Efficiency, both technical and allocative, in the processing sector would suffer, as lower value products of lesser quality are likely to be produced in greater quantities. Technical efficiency would also be lost, as crews scale up for a short period of time to accommodate the rapid pace of landings during the brief season.

Consumers are likely to be supplied with products from the rockfish fishery similar to those supplied prior to pilot program. Catcher processors are likely to produce high quality frozen headed and gutted and whole fish. Production from catcher vessel catch is likely to suffer from poor handling.

Crew participation and compensation would likely revert to what it was before implementation of the rockfish pilot program. During that time, most crewmembers worked in several different fisheries on the vessel that they worked on during the rockfish season, while some moved to other vessels for particular fisheries. Crew members' compensation would likely revert to receiving a specific percent of the vessel's revenues.

For shore based processing crew, status quo would result in similar processing practices seen before implementation of the pilot program. During that period, most of the processing took place in Kodiak and was undertaken by resident crews. Crews were employed processing rockfish for a relatively short period of time. When rockfish was processed, relatively large crews were necessary to maintain a flow of fish through the plants. Because the fishery coincided with the pink salmon fishery, some plants employed substantially larger crews that were juggled between lines to process landings from both fisheries.

Catcher Processor Sector - Cooperative Only – CP-2

Under this alternative, eligible catcher processors could either join a cooperative or not participate in the Central Gulf rockfish fisheries. Within each cooperative, it is anticipated that each member would receive revenues based on the allocation that the person brings to the cooperative, with participants that fish shares of others receiving compensation for their fishing expenses. Persons eligible for the program that receive relatively small allocations could either choose to join a cooperative to allow other members of the cooperative to fish their allocations or choose to opt-out of the program for the year, forgoing the opportunity to fish CGOA rockfish. Other members of the sector could decide to consolidate their rockfish allocations to realize efficiencies in the rockfish fisheries and other fisheries. Whether some or all of these vessels would choose to remain out of cooperative cannot be predicted, and depends on their opportunity in other fisheries.

Allocations of secondary species should not constrain harvests of target rockfish, unless the rates of incidental catch of secondary species in the rockfish fishery change substantially. Cooperatives should prove useful for addressing any constraints arising from the secondary species allocations, given that cooperatives would allow for the redistribution of secondary species allocations among cooperative members. One factor some sector participants have sighted as creating an incentive for not joining cooperatives under the existing pilot program is the shorttraker rockfish allocation. Included in the proposed action is an option to increase the allocation of shorttraker to cooperatives from 30.03 percent to 50 percent or to manage shorttraker and rougheye rockfish under a combined MRA of 2 percent for catcher processors fishing in a cooperative. It is possible that one of these suggested changes could eliminate any perceived constrain these species allocations have on the harvest of the primary species.

Processing by catcher processors under this alternative is likely to remain similar to the current (pilot program) processing by this sector. Most vessels in the sector are equipped for producing a few simple products (frozen whole and headed and gutted fish). Because of size limitations, it is unlikely that any of these vessels will change plant configurations to process higher-valued, more processed products. Although catcher processors product mix may not change from the status quo under this alternative, it is possible that some improvement in quality may be made by some participants. Generally, catcher processors produce a relatively high quality product, so the ability to make quality improvements may be limited. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian consumers, as most of the production from this sector is sold into that market.

The primary efficiency gains in the catcher processor sector under this alternative will result from improvements in technical efficiency. Allocative efficiency gains are unlikely to occur since vessels participating in this sector are equipped to produce only whole and headed and gutted products and are unlikely to reconfigure for different production outputs. Technical efficiency gains should occur as participants are able to slow the pace of fishing and processing. In the slower fishery, participants may be able to reduce expenditures on inputs to some degree (possible scaling down crews slightly) and increasing outputs slightly (with less loss due to diminished quality). Additional technical efficiencies could arise because of the cooperative structure of the alternative. In a cooperative, participants will be free to consolidate fishing up to the 60 percent harvest cap. Consolidating catch on fewer vessels in the fishery could also reduce aggregate harvest costs.

Specific sideboard provisions include a limit on West Yakutat pelagic shelf rockfish, Pacific ocean perch, and Western GOA pelagic shelf rockfish, Pacific ocean perch, and northern rockfish. There would also be a limit halibut PSC to constrain harvest from fisheries that are typically halibut constrained. In addition, catcher processors that elect to fish in the limited access fishery (CP-3) that have in excess of 5 percent of the sector's qualified catch of Central GOA Pacific ocean perch are subject to additional limits from July 1 until 90 percent of the Central GOA Pacific ocean perch that is allocated to the catcher processor limited access fishery has been harvested. For qualified participants that choose to opt-out of the rockfish program, they would be prevented from participating in any directed fishery that the license holder did not participate in during the first week of July in at least two of seven qualifying periods.

Complicating the rockfish program sideboards for the catcher processor sector are Amendment 80 sideboards. Implemented in 2008, Amendment 80 program includes sideboards for pollock, Pacific cod, Pacific ocean perch, northern rockfish, pelagic shelf rockfish, and halibut PSC for the same catcher processor fleet that would likely be limited by sideboards in the new rockfish program. Amendment 80 GOA sideboards appear less restrictive relative to the proposed rockfish program sideboards, but rockfish program sideboards would apply only for the month of July, while the Amendment 80 sideboards apply all year. Given that both rockfish program sideboards and Amendment 80 sideboards are based on historical retained catch by the sector, it is likely that both sideboards are constraining of fishing effort in

a similar fashion. Given that rockfish program and Amendment 80 sideboard limits would likely curtail the same catcher processor fleet from encroaching on other fisheries, it is likely that having both sets of sideboards would only duplicate management costs and increase the complexity of the sideboard fisheries with no added benefit.

Catcher Processor Sector - Cooperative or Limited Access – CP-3

This alternative differs from the cooperative only alternative only in that eligible catcher processors may choose to participate in a limited access fishery (instead of a cooperative). The catcher processor limited access fishery will be managed in a manner similar to the pilot program limited access fishery. Under the pilot program, several vessels have registered for the limited access fishery, with only a few vessels participating. As a result, no race for fish has developed. Instead participants have coordinated catch during allowing each to harvest an agreed share. Since most of the limited access vessels are members of a common cooperatives in the Bering Sea, it is possible that some vessels registered for the limited access that do not participate have chosen to register for the limited access to benefit their Bering Sea cooperative associates (rather than see their allocations redistributed among the rockfish cooperatives). As a result of these arrangements, the limited access fishery has functioned more like a cooperative than a limited access fishery. Limited access registered vessels, however, cannot begin harvests prior to the early July opening and, under sideboards, cannot fish in other fisheries in early July until a large portion of the rockfish harvests are made. These limitations are intended to prevent encroachment of vessels in those other fisheries.

Processing by catcher processors under this alternative is likely to be the same as under the previous alternative where catcher processors will continue to produce a relatively high quality product, so the ability to make quality improvements may be limited. Catcher processors would likely to realize similar gains in production efficiency as the cooperative only alternative, with differences arising from the ability to participate in the limited access fishery. Catcher processors may receive a benefit under this alternative, if the MRA management in the limited access fishery removes a harvest constraint that would have affected vessels fishing in a cooperative. To date in the pilot program, no constraint appears to have arisen. Alternatively, periodic losses in efficiency could result under this alternative, if a race for fish develops in the limited access fishery.

Catcher Vessel Sector - Harvester Only Cooperative – CV-2

Under this alternative, eligible harvesters would receive exclusive allocations that can be accessed through cooperatives. These cooperatives will have the flexibility to make deliveries to any processor, which should ensure that harvester delivery preferences are recognized. It is possible that a harvester might make concessions to a processor in choosing delivery dates, but these concessions are likely to be compensated. Cooperatives will have the flexibility of delivering to multiple processors allowing the opportunity to choose fishing timing. Despite this flexibility, it is likely that established relationships will have an important influence on harvester delivery choices and cooperative membership (at least at the outset of the program). Over time, changes in delivery patterns may change as harvesters perceive better opportunities with other processors.

The structure of the market for landings would likely be competitive under this alternative, increasing the incentive for processors to aggressively pursue product improvements to attract additional landings. This competition should resolve delivery terms, including the timing of landings to accommodate processing schedules. This timing of landings could be critical to processors meeting some market demands, particularly if a fresh market were to develop.

Under this alternative, the ability to coordinate harvest activity and remove vessels from the fleet without loss of harvest share, together with a relative improvement in bargaining strength arising from no processor protection on processor entry should result in substantial improvements in harvest sector efficiency over the status quo. Fishing will be slowed, as cooperatives receive exclusive allocations. Technical efficiency in processing should improve as processors are better able to schedule crews to process landings. Allocative efficiency should also increase as processors improve product quality and produce higher quality products that cannot be produced under status quo management, because of the relatively low quality of landings and the need to process those landings rapidly. However, processors may experience little improvement in their overall efficiency under this alternative because of their relatively weak negotiating position in the market for landings.² Instead, cooperatives (and their catcher vessel fleets) should receive most of the benefits of these improvements through ex vessel price negotiations. Notwithstanding the relatively strong position fishermen may have under this alternative, processors should obtain normal profits from their processing, and in some cases may be able to use relationships in other fisheries to leverage their negotiating position.

All of the catcher vessel alternatives include an option for an individual use cap of between 3 and 5 percent of the catcher vessel shares. Under the various qualifying year options and proposed caps, a maximum of 14 license holders could be constrained by the individual use cap at the initial allocation. Given that between 42 and 50 license holders would be allocated primary rockfish depending on the qualifying years, between one-quarter and more than one-half of those license holders could leave the fishery before all owners reach the 3 percent cap. Another option considered in all of the catcher vessel alternatives would establish a cooperative use cap of 30 percent of the catcher vessel harvest share pool. The provision will prevent harvests from forming cooperatives beyond the cap of the threshold, which may prevent consolidation within cooperatives that could be detrimental to marginal processors in the fishery.

A vessel use cap of between 4 and 10 percent is also being considered for the catcher vessel alternatives. As many as 12 vessels in the catcher vessel sector have historically harvested more than 4 percent of the sector's total catch in a given year. Few vessels have historically exceeded the proposed 8 percent cap and in only one year did any vessels exceed the 10 percent cap. Finally, a processing cap of 20, 25, 30, or 33 percent is being considered for the catcher vessel alternatives. A processing cap would ensure that no processor purchases over the specific share of the landings in the fishery. Overall, processing caps would reduce production efficiency to the extent that competition for landings is decreased. Harvesters in the fishery would receive a lower price for landings to the extent that competition is constrained. This reduction in competition could, in turn, reduce the incentive for processors to improve products and enhance marketing efforts to maintain their competitiveness in product markets. Processors could derive a benefit from this provision to the extent that ex vessel price reductions occur, but those benefits will not necessarily accrue to historic processors.

The Council motion contains an option add a port delivery requirement for allocations of the primary and secondary species to the catcher vessel sector. The port delivery requirement is intended to protect the community of Kodiak from changes in the location of shore based processing activities that could occur in the rockfish program. If adopted, this option would ensure that Kodiak remains the processing base for the fishery and that Kodiak processors and the community continue to benefit from the fishery.

As would be applied to catcher processors, a general sideboard would limit catcher vessel participants, in the aggregate, to their historic harvests in other fisheries during the month of July. Given that NOAA

² Although an option could require all landings to be made in Kodiak, since that community is home to several processors, it is unlikely that the limitation of landings to Kodiak would affect the degree of competition in the fishery.

Fisheries would likely close the WGOA and WYAK rockfish fisheries and the deep water complex to directed fishing for the catcher vessel sector due to insufficient catch history, prohibiting eligible catcher vessel license holders from directed fishing in these fisheries would likely reduce management costs, observer costs to the sector, and simplify sideboard regulations for the rockfish program.

Catcher Vessel Sector – Allocation of Harvester Shares to Processors – CV-3

Under this alternative, eligible processors would receive allocations of harvest shares from the catcher vessel harvest share pool under alternative. Allocations of target rockfish would be divided between eligible harvesters and eligible processors, with eligible processors receiving 10, 20, or 30 percent of the sector's pool of all allocated species based on processing in the fisheries during the qualifying period. In general the processors receiving these allocations will receive the resource rents associated with that allocation.

Catcher vessel efficiency gains under this alternative are likely to be different, with resource rents divided between catcher vessels and processors based on the division of the harvest share allocation between these sectors (i.e., 90/10, 80/20, or 70/30). The returns to participants in the catcher vessel sector may vary slightly depending on the approach taken by holders of processor allocations in using their harvester shares. These different methods are likely to result in a similar distribution of resource rents, but may result in slightly different distributions of normal profits and operation levels of independent harvesters. If a processor elects to harvest its allocation on its own (or an affiliated vessel), the processor would receive resources rents and normal profits from the harvest annually.³ If a processor elects to sell its allocation (i.e., long term share), the processor would receive the resource rents embodied in the allocation at the time of the sale. The purchaser would assume the risk associated with the allocation and gain any normal profits from the harvest of the shares over the long term. If a processor enters an arm's length lease for it's the allocation (or the annual allocation yielded by its allocation), it would receive the annual rents embodied in the allocation at the time of each lease, with the lessee gaining normal profits from the year's harvest. Lastly, a processor may use its shares as part of a broader negotiation with a cooperative (or vessels in a cooperative) to establish a relationship that extends to all (or a large segment of) the landings of the cooperative.

Under this alternative, processors that receive an allocation of harvest shares are likely to realize substantially greater benefits from the fishery, than under the other catcher vessel alternatives. This benefit would be derived from the share allocation, as opposed to operational efficiencies, as this alternative is likely result in similar operational efficiencies as other cooperative alternatives. Processors will have several choices for using their shares, including selling their long term shares, leasing annual allocations, and (in some cases) harvesting annual allocations on affiliated vessels. In most cases, it is likely that these processors will use their allocations. While each of these will bring the share holder the resource rent arising from the shares, it is likely that most processors holding harvest shares will negotiate the harvest of their allocations with cooperatives to gain additional landings and coordinate its processing activity in the fishery.

In addition to the many different caps included in the catcher vessel alternatives, this alternative would include an additional limit on processor holdings of harvest shares. Under one option, the general harvest share limits could be applied to all holdings, effectively constraining harvest share holdings. It is possible under this option that all processors initially allocated harvest shares could exceed the cap. A grandfather provision could allow these processors to maintain holdings on the allocation. A second option would establish a 10 percent use cap on processor holdings. If processors receive only 10 percent of the harvest share pool in the initial allocation, it would be possible for a single processor to acquire all of those shares, if the use cap is set at 10 percent. With the exception of a limit on processor holding of harvest

³ These profits might be captured only after sale of finished products by the processors.

shares, the effects of excessive share limits and sideboards noted in CV-2 would also apply to this alternative.

The specific effects of the processor allocations will also depend, in part, on the rules governing their use and transfer. A holder of quota shares originally allocated to a processor would be permitted to divide those quota shares on transfer. In addition, three options defining persons eligible to acquire shares have been proposed. The first option would qualify processors that meet a minimum processing threshold in the fishery to acquire these shares. The second option would allow processors receiving an initial allocation of shares to acquire additional shares. In general, opportunities for processor acquisition of shares are likely to be few. The third option would allow any qualified license holder to acquire shares initially allocated to a processor. Unless a processor is exiting the fishery, it is unlikely that a processor would wish to sell its shares to a possible processing competitor (or harvester). It is also likely that, if a processor were to exit, it would attempt to sell its entire operation, including any shares. This type of a transfer is unlikely to change the processing market, except when a plant is bought by a competitor who is consolidating processing. Depending on the excessive share cap, processors may not be permitted to consolidate in this manner.

Catcher Vessel Sector – Cooperative with Severable Processor Association (no forfeiture) – CV-4

Under this alternative, a cooperative would be required to annually associate with a processor to access its allocation. Harvester will have full discretion to choose a cooperative initially and may freely move among cooperatives annually thereafter. In addition, cooperatives are free to associate with any processor in the community in any year without forfeiture or penalty. The terms of the cooperative agreement, and consequently, the cooperative/processor association are subject to negotiation between the cooperative members and the processor. Given the flexibility of the harvesters to move among cooperatives and cooperatives to change associations, it is likely that any limitation established under the terms of an association (such as delivery requirements or terms) will be fully voluntary and harvesters will receive compensation for any concessions. Long term relationships and relationships in other fisheries are likely to be important factors that affect cooperative and processor association choices.

While some cooperatives may use the processor association to establish delivery relationships, it is possible that some cooperatives may minimally comply with the requirement by establishing a relationship on paper, but maintaining no operating relationship. With unlimited choice in processor associations, such an arrangement is plausible. In this case, the cooperative would be free to deliver to any processor and negotiate delivery arrangements independent of the processor association requirement.

It is expect that processors will pursue markets and production opportunities, to establish and maintain annual associations and to attract deliveries. Historic relationships will likely influence the formation of cooperative/processor associations, but these relationships are likely to be tested, if a processor fails to compete in product markets (or fails to match others' ex vessel prices).

Overall, the ability to coordinate harvest activity, together with a relative improvement in bargaining strength arising from no direct processor allocation, should result in substantial improvements in harvest sector efficiency over the status quo.

The effects of excessive share limits and sideboards noted in CV-2 and CV-3 would also apply to this alternative.

Entry Level Trawl/Fixed Gear Fisheries – EL-2

Under this alternative, 5 percent of each of the target rockfish species is set aside for the entry level fisheries. This set aside is divided between the trawl and fixed gear sectors. With fixed gear vessels taking less than one percent of the TAC of any rockfish species historically, it is unlikely that the fixed gear allocation will constrain that fleet. To reduce the potential for the fixed gear allocation to go unharvested, that TAC is available for harvest by entry level trawl vessels late in the year.

The trawl allocation would be available for harvest by all applicants for the entry level program. Despite the large number of persons eligible for the fishery, the trawl fishery could draw few applicants as the allocation is relatively small and few potential participants have experience in the fishery. Given the potential for relatively small allocations to the fishery (approximately 350 tons of Pacific ocean perch), the ability of NOAA Fisheries to effectively manage the trawl portion of the entry level fishery could be limited, if a substantial number of applicants for the entry level trawl fishery are receive. If several vessels enter the fishery, it is likely that managers would have to close the fishery or use short openings of 24 hours or less. Management of the small allocation to trawl vessels in the entry level fishery is likely to be problematic under this alternative.

Entry Level Fixed Gear Only Fishery – EL-3

Under this alternative, only fixed gear sector would receive an entry level allocation of the primary rockfish species. The starting entry level set aside under this alternative would be between 1 and 10 metric tons of Pacific ocean perch, between 1 and 10 metric tons of northern rockfish, and between 10 and 30 metric tons of pelagic shelf rockfish.

Limiting the entry level fishery to non-trawl only and reducing the set aside for the non-trawl fishery would resolve complications associated with the entry level trawl fishery. Not including trawl participants in the entry level fishery eliminates the potential for that trawl effort to result in the TAC being exceeded. Reducing the set aside for the non-trawl CGOA rockfish could also reduce stranded CGOA rockfish TAC. Historically, non-trawl vessels have very minimal participation in the CGOA target rockfish fisheries. However, allocations less than 5 metric tons for Pacific ocean perch and northern rockfish could be very difficult to manage, so NOAA Fisheries would likely close those entry level fisheries To avoid closures in the entry level program prior to the season opening, the Council would have to select Pacific ocean perch and northern rockfish allocations greater than or equal to 5 metric tons.

Included in the alternative is ability to expand the fixed gear entry level allocation as harvests increase. If the fixed gear entry level participants harvest 90 percent or more of their allocation of a rockfish species in a year, the set-aside would be increased by the amount of the initial allocation of the species. Allocation increases would be capped at a maximum of between 1 and 5 percent of Pacific ocean perch TAC, between 2 and 5 percent of northern rockfish TAC, and between 2.5 and 5 percent of pelagic shelf rockfish TAC. Overall, the use of a relatively small starting fixed gear allocation (more in line with historic catches) and a mechanism for increasing the allocations with growth in the sector could help prevent stranding a portion of the TAC, which would occur, if the allocation to the fixed gear sector was disproportionate to their catches.

Effects on Net Benefits to the Nation

The net benefits to the Nation arising out of the change in management can accrue from several sources. First, production efficiencies in harvesting and processing could occur as a direct result of management changes. These production changes may affect the benefits realized by U.S. consumers, through changes in product quality, availability, variety, and price. Further, the changes in conduct of the fisheries and

management could result in changes in the environment, which yield benefit changes to the Nation through ecosystem productivity changes and welfare changes attributable to non use/passive use values. These various contributing effects of the alternatives to the net benefits to the Nation are summarized in the sections above. This section summarizes the different effects to allow comparison of the different alternatives and conclusions concerning the overall effects of the alternatives on net benefits to the Nation.

Status Quo

If the status quo management of the rockfish fisheries is selected, net benefits to the Nation are likely to be similar to those levels seen prior to the implementation of the rockfish pilot program in 2007. For catcher processors, quality of the whole and headed and gutted production during that period was relatively high. Few consumer benefits from this production would be realized in the U.S., as most fish is sold into foreign markets. For the shore-based sector, quality of landings and value of processed products may suffer decreased production efficiency. Consumer benefits of these harvests would be diminished by the quality and product value. In addition, a substantial portion of any consumer benefit is not realized by U.S. consumers, as much of the production is sold into foreign markets. Costs of monitoring and management are relatively low, as catch is monitored at the fleet level. Non-use benefits to the public would decrease to some extent by waste and bycatch.

Catcher processor cooperative alternatives

Net benefits to the Nation will be affected by a few different factors under the catcher processor sector cooperative alternatives. Production efficiency should increase slightly, as some participants realize moderate improvements in quality of production. Few, if any, benefits of production improvements will be realized by U.S. consumers, as this fleet is likely to continue to serve international markets. Costs of management, monitoring, and enforcement will increase to administer and oversee the cooperative allocations. Some additional benefits to the Nation could arise through reduction in bycatch, since the program requires full retention of several species. Since discard rates of these species are relatively low in the current fishery, these benefits are likely not substantial.

Catcher vessel cooperative alternatives

A few different factors will affect net benefits to the Nation under the catcher vessel cooperatives alternatives. Slowing the rate for fishing and extending the season should lead to substantial increases in production efficiency, as participants in both sectors improve quality and higher value products are produced. Some production benefit could flow to foreign-owned processing entities, but since increases in processor net benefits under this alternative are relatively minor, almost all of the gain in production efficiency should be realized by U.S. entities and citizens. Production improvements should lead to benefits for U.S. consumers, as this fleet is likely to maintain, or even increase production for domestic markets. In addition, greater production is likely to occur domestically, as fewer primary products are shipped abroad for reprocessing. Increased administration and oversight necessary for cooperative allocations and an extended season will result in an increase in costs of management, monitoring, and enforcement. Participants may also require additional observer coverage. Some additional benefits to the Nation could arise through reduction in bycatch (particularly halibut PSC).

1 Introduction

In 2003, the U.S. Congress directed the Secretary of Commerce to establish, in consultation with the North Pacific Fishery Management Council (the Council), a pilot program (the rockfish pilot program) for management of the Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish⁴ fisheries (the target rockfish fisheries) in the Central Gulf of Alaska. Following this directive, in 2005, the Council adopted a share-based management program under which the total allowable catch is apportioned as exclusive shares to cooperatives based on the catch history of the members of those cooperatives. Although originally subject to a sunset after 2 years, the 2007 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (the MSA) extended the term of the program to 5 years. Under this extension, the program is scheduled to sunset after the 2011 season. In the absence of Council action, management of the fisheries would revert to the License Limitation Program (the LLP).

Management actions for these rockfish fisheries must comply with applicable Federal laws and regulations. Although several laws and regulations guide this action, the principle laws and regulations that govern this action are the Magnuson-Stevens Act (MSA), the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act, and Executive Order 12866.

This document contains a Regulatory Impact Review, a Regulatory Flexibility Analysis, and an Environmental Assessment of the alternatives for the program management of the Central Gulf of Alaska target rockfish fisheries. Section 2 contains the Regulatory Impact Analysis, including the problem statement, a brief background, and a detailed description of the alternatives; the existing conditions in the fisheries, analyses of the economic and socioeconomic effects of the alternatives, elements, and options; Section 3 contains the Environmental Assessment; Section 4 contains the Regulatory Flexibility Analysis; and Section 5 contains a brief discussion of the MSA National Standards and a fishery impact statement.

2 Regulatory Impact Review

This chapter provides an economic analysis of the action, addressing the requirements of Presidential Executive Order 12866 (E.O. 12866), which requires a cost and benefit analysis of federal regulatory actions.

The requirements of E.O. 12866 (58 51735; October 4, 1993) are summarized in the following statement from the order:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternatives regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health, and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 further requires that the Office of Management and Budget review proposed regulatory programs that are considered to be “significant”. A “significant regulatory action” is one that is likely to:

⁴ Pelagic shelf rockfish comprises light dusky rockfish, yellowtail rockfish, and widow rockfish.

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

2.1 Problem Statement

The Council developed the following problem statement defining its purpose for development of alternatives for this action:

The intent of this action is to retain the conservation, management, safety, and economic gains created by the Rockfish Pilot Program to the extent practicable, while also considering the goals and limitations of the Magnuson-Stevens Fisheries Conservation and Management Act Limited Access Privilege Program (LAPP) provisions.

The existing CGOA Rockfish Pilot Program (RPP) will sunset after 2011. Consequently, if the management, economic, safety and conservation gains enjoyed under the RPP are to be continued, the Council must act to create a long term CGOA rockfish LAPP. For both the onshore and offshore sectors, the RPP has improved safety at sea, controlled capacity of the fleets, improved NMFS' ability to conserve and manage the species in the program, increased vessel accountability, reduced sea floor contact, allowed full retention of allocated species and reduced halibut bycatch. In addition, the rockfish fishery dependent community in the CGOA and the shorebased processing sector have benefited from stabilization of the work force, more shoreside deliveries of rockfish, additional non-rockfish deliveries with the RPP halibut savings, and increased rockfish quality and diversity of rockfish products. Moreover, the CGOA fishermen, and the shorebased processing sector have benefited from the removal of processing conflicts with GOA salmon product. The Council needs to resolve identified issues in the management and viability of the entry level fishery.

The portion of the current catcher processor sector currently participating in the rockfish coop have also benefitted from the RPP. These benefits include greater spatial and temporal flexibility in prosecuting the fishery, which result in lower bycatch, a more rational distribution of effort and more stable markets. Certain provisions of the current RPP act as disincentives to some CP operators from joining the coop sector and achieving these benefits. These disincentives should be eliminated to the extent practicable in the new RPP.

2.2 Description of the Alternatives

To address its problem statement, the Council has adopted for analysis alternatives for three different sectors (i.e., entry level, catcher vessels, and catcher processors). These program alternatives are derived from a common set of elements and options with differences that reflect the different operations of the sectors. The specific elements and options that define the alternatives follow the description of the alternatives (including the status quo) below.

For the **entry-level sector**, three alternatives have been defined. The first is the no action alternative, under which management would revert to the LLP, under which any holder of an LLP license could enter

a vessel in the rockfish fishery. The second alternative is the current entry level management structure under the pilot program. Under this alternative, catcher vessel license holders that do not qualify for participation in catcher vessel program can participate in a derby fishery for 5 percent of the target rockfish TAC. This entry level TAC is divided equally with half available to trawl gear participants and half available to fixed gear participants. The third entry level alternative would provide for only fixed gear entry level fishery.

Two alternatives are defined for the **catcher processor sector**. The first is the no action alternative, under which the fishery would revert to LLP management. The second alternative is the existing pilot program structure, which allocates to the trawl catcher processor sector target rockfish and secondary species (historically harvested in conjunction with target rockfish) and halibut prohibited species catch (PSC) based on the harvest history of sector members. Eligible sector participants could then access exclusive allocations through cooperative membership.

Four alternatives are defined for the **catcher vessel sector**. The first is the no action alternative, under which the fishery would revert to LLP management. The second alternative would establish a cooperative program for catcher vessel sector under which eligible catcher vessels could participate in the fishery only by joining a cooperative, which would receive an allocation of target rockfish, secondary species, and halibut PSC based on historic catches. The third alternative would divide harvest share allocations of target rockfish, secondary species, and halibut PSC between historic catcher vessel participants and historic processing participants, with allocations within each sector based relative historic participation within that sector. Under the final alternative, a harvester must join a cooperative in association with a processor. The harvester has full discretion in choosing a cooperative both initially and annually thereafter and may change cooperatives (and accompanying processor associations) with forfeiture of harvest quota.

2.2.1 The status quo alternative

Under the status quo alternative, Central Gulf of Alaska rockfish fisheries would revert to LLP management used prior to the implementation of the pilot program in 2006. The fisheries would open to fixed gear participants on January 1 and the trawl gear season would open in early July. Directed fishing allowances would be set to accommodate incidental catch of the rockfish species in other fisheries during the remainder of the year. Harvests would be monitored in-season and each of the target rockfish fisheries would be closed when managers estimate that the directed fishing allowance for that fishery is harvested. After closure of the directed fishery, Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish would be managed on a bycatch basis and would be subject to MRAs in other target fisheries, limiting the retention of these rockfish relative to target species. Ongoing catch would be monitored by managers with fishery closures timed to coincide with harvest of the respective TACs. Trawl participants of both operation types would be subject to an aggregate limit on the amount of halibut that can be caught in all deep water fisheries, all of which must be discarded as prohibited species catch (PSC). Incidental catch species would be managed under bycatch status, with a maximum retainable allowance (MRA) limiting their retention to a percentage of retained harvest of species open to directed fishing.

2.2.2 Program alternatives

The different program alternatives substantially overlap with one another. The summaries that follow reference each other to avoid repetition.

Entry level alternatives

Entry level alternative 2 - Entry level trawl/fixed gear (non-trawl) fisheries (the pilot program structure)

Under this alternative, 5 percent of each of the target rockfish species is set aside for the entry level fisheries. This set aside is divided between the trawl and fixed gear sectors such that each receives an equal allocation of the aggregated TACs of target rockfish species available to the entry level fisheries. Because of operational differences, the trawl sector would receive its portion of the aggregate TACs first from the entry level TAC of Pacific Ocean perch. If the entry level Pacific Ocean perch TAC is less than the total allocation to the trawl sector, the sector receives proportional shares of the entry level northern rockfish and pelagic shelf rockfish TACs, such that aggregate entry level TAC is divided equally between the two gear types.

The entry level fishery is open exclusively to LLP license holders that are not eligible for the cooperative program. The entry level fishery would be prosecuted as a competitive limited access fishery. The fixed gear fishery opens on January 1st each year. The trawl fishery is scheduled to open on the 1st of May. Under one option, if halibut PSC are unavailable on that date, the opening would be delayed until the next release of halibut PSC. Under a second option, if sufficient halibut PSC is not available at the time of the scheduled opening, halibut usage would be deducted against the following quarter's halibut PSC allowance. Under an option, entry level fixed gear sector would be exempt from VMS requirements.

Since historic harvests suggest that the fixed gear sector may be unable to fully harvest its allocation, trawl participants are permitted to harvest the fixed gear allocation after September 1st. This is accomplished by allowing both sectors to fish off the combined remaining TACs beginning on September 1st.

Vessels fishing the fixed gear entry level allocation in Federal waters must have an LLP (if required for the vessel to operate in Federal waters) and must have registered for the entry level fishery. Fixed gear vessels that fish exclusively in parallel waters and do not have an LLP or a federal fisheries permit do not need to register for the program. In addition, these vessels that fish exclusively in parallel waters and do not have an LLP or federal fisheries permit may deliver their catch to any processor, including processors qualified for the main program (who cannot otherwise receive deliveries from the entry level fisheries).

Entry level alternative 3 - Entry level fixed gear (non-trawl) only fishery

Under this alternative, only fixed gear sector would receive an entry level allocation of the primary rockfish species.⁵ The starting entry level set aside under this alternative would be between 1 and 10 metric tons of Pacific Ocean perch, between 1 and 10 metric tons of northern rockfish, and between 10 and 30 metric tons of pelagic shelf rockfish. If the fixed gear entry level participants harvest 90 percent or more of their allocation of a rockfish species in a year, the set-aside would be increased the amount of the initial allocation of the species. Allocation increases would be capped at a maximum of between 1 and 5 percent of Pacific Ocean perch TAC, between 2 and 5 percent of northern rockfish TAC, and between 2.5 and 5 percent of pelagic shelf rockfish TAC.

Prosecution of the entry level fishery will be supported by the general allowance of halibut PSC to fixed gear. Catch of all other species would be governed by existing rules to control bycatch (i.e., MRAs and bycatch status management). Any vessel or gear type exempt from CGOA LLP requirements or any holder of a CGOA fixed gear LLP may enter a vessel in the entry level fishery. The entry level fishery would be prosecuted as a competitive, limited access fishery opening on January 1st each year. Under an option, entry level fixed gear sector would be exempt from VMS requirements.

Catcher processor sector alternatives

⁵ Some vessels that fished in the trawl entry level fishery under the demonstration program may qualify for the main program depending on the qualifying option selected.

Catcher processor alternative 2 - Catcher processor cooperative only

Under the catcher processor cooperative only alternative, allocations would be made to the trawl catcher processor sector for target rockfish species and secondary species (Pacific cod, sablefish, shortraker, rougheye, and thornyhead) based on the historic harvest of sector members. These allocations are divided among cooperatives based on individual catch histories of cooperative members. A license holder's fishing history would be the history of the vessel that led to the license and the history of any vessel that fished using the license. Any license holder with a targeted catch of target rockfish in the qualifying period would be eligible for the program.

Two set asides of the target rockfish will be made prior to the allocations to the sectors under the new program. The first of these set asides would allocate a portion of the TAC for each target rockfish species to entry level fisheries. The second set aside would be an incidental catch allowance (ICA) to support incidental catch of the rockfish by participants in other directed fisheries. This set aside will be based on the incidental catch needs of other fisheries, which are estimated using rockfish incidental catch rates from those fisheries in recent years. After removal of the two set asides, the remainder of the target rockfish would be allocated to the catcher processor sector and the catcher vessel sector participating in the program. Allocations of the target rockfish to each sector would be based on retained catch (excluding landings processed into meal) of qualified vessels in the sector during the directed fishing season using each vessel's catch history during the qualifying years. Different years could be dropped for each species by a vessel for determining the allocation to maximize the allocation attributable to that vessel. For catcher processors, Weekly Processing Report data will be used to determine eligibility and calculate allocations.

The sector would also be allocated three secondary species—rougheye, thornyhead, and sablefish—based on catch of those species by the sector during the qualifying years while targeting rockfish. The allocations of these species would be a percentage of the TAC based on the average annual percentage of retained catch of secondary species harvested by the sector in the CGOA rockfish fishery relative to total retained catch of that secondary species by all gear types during the qualifying years. These secondary species allocations would be subdivided in proportion to the allocations of CGOA rockfish among cooperatives and the limited access fishery.

Three options are under consideration for managing shortraker rockfish in the catcher processor sector. Two of these options would manage shortraker as an allocated secondary species, with allocations of either 30.03 percent or 50 percent. The third option would combine shortraker rockfish and rougheye rockfish managing those species using a maximum retainable allowance percentage of 2 percent. Pacific cod would be managed using a revised maximum retainable allowance percentage of 4 percent. All other non-allocated species would be managed using the current MRA levels. Under options either all harvests of allocated species or only target rockfish harvests would be the basis for purposes of determining permitted MRA retention. MRAs would be enforced on a trip-by-trip basis.

Three options are under consideration for the allocation of halibut mortality in the program. Under the first, halibut mortality would be allocated to the sector under the program based on halibut mortality during the qualifying period. Under the second, halibut mortality would be allocated based on halibut mortality during the first three years of the pilot program. Under the third option, the allocation of halibut mortality would be based 50 percent on halibut usage in the qualifying period and 50 percent on halibut usage in the first three years of the pilot program. The total allocation to the program would be based on total mortality of both sectors during the qualifying period calculated by dividing the total mortality during the qualifying period by the number of qualifying years. This overall allocation would be divided between the sectors based on each sector's relative share of the target rockfish under the program (i.e., total qualified rockfish pounds). Between 10 percent and 100 percent of any cooperative allowance of

halibut PSC that has not been utilized by November 15 or after the declaration to terminate fishing will be added to the last seasonal apportionment for trawl gear during the current fishing year.

To participate in the fisheries, an eligible license holder must be a member of a cooperative. An option is under consideration that would require a minimum of two independent entities to form a cooperative using the 10% AFA rule. Cooperative agreements under this alternative would have a term of one year and must include a fishing plan for the harvest of the cooperative's allocation. Cooperatives are intended only to conduct and coordinate fishing of their member's allocations and are not intended to be formed under the Fishermen's Collective Marketing Act. The cooperative agreement must have a monitoring program and may adopt fishing practice codes of conduct. Cooperative members would be jointly and severally liable for the harvest of the cooperative's allocation. The cooperative would be required to file its agreement with the NOAA Fisheries Restricted Access Management Division to receive an annual allocation. A cooperative would be required to accept membership of any LLP license holder eligible for the cooperative subject to the same terms and conditions as governing other members. Eligible catcher processors that do not file cooperative agreements with NOAA Fisheries in a timely manner will be considered to have "opted-out" of the program for that year, forgoing the opportunity to fish CGOA rockfish. History of vessels that "opt-out" of the program would be reallocated within the catcher processor sector, based on histories of participants that elect to remain in the fishery.

An LLP license holder that is eligible for the program would be permitted to transfer the license. The transfer would include any privilege to participate in the program that is associated with or arises from holding the license. The interest in the program that is derived from the license would not be severable from the license, or divisible. In addition, cooperatives that meet a minimum two LLP license threshold would be permitted to engage in the transfer of annual allocations. Catcher processors could also transfer annual allocations to catcher vessel cooperatives, but could not acquire annual allocations from catcher vessel cooperatives. Any transfers would be temporary transfers of a single year's annual allocation with the history reverting to the LLP license from which it came.

An option could be selected under which no person would be permitted to hold or use in excess of 20, 30, or 40 percent of the catcher processor pool. This cap would be applied to limit the amount of shares that an individual could bring to a cooperative, either through license holding or through intercooperative leasing. To apply this cap, intercooperative transfers would need to be conducted through individuals. In addition, no catcher processor could harvest in excess of 60 percent of the catcher processor pool.⁶ Persons or vessels with history in excess of these limits would be grandfathered at their historic levels.

The rockfish season for cooperatives would open on the 1st of May, and extend until the 15th of November. All catch of allocated species must be retained and fishing must be stopped by all cooperative members when any allocation is fully harvested or PSC is fully utilized.

Included in the program is an option to establish sideboards. Sideboards limit encroachment of participants in the rockfish program on other fisheries. Since the CGOA rockfish fishery is prosecuted in July, sideboards are generally intended to limit program participants to their historic harvests in other fisheries during July. Specifically, in Gulf fisheries that are historically constrained by TAC, eligible participants from each sector would be limited to their historic catch, in the aggregate.

An option for consideration is the removal of sideboard limits for WYAK and WGOA primary rockfish species (Pacific ocean perch, Northern rockfish, and pelagic shelf rockfish) given that much of this same catcher processor fleet is already limited by sideboards from Amendment 80.

⁶ History transferred to catcher vessel cooperatives would remain subject to the catcher processor caps and would not be subject to catcher vessel or shoreside processor caps.

Sideboards for Gulf fisheries that are historically constrained by halibut PSC would limit eligible participants in each sector to their historic halibut mortality in the month of July, in the aggregate. Since halibut in the Gulf is managed Gulf-wide for the deep-water complex and the shallow-water complex, management of the sideboard on a fishery-by-fishery basis would be substantially more complicated than managing one sideboard for the deep-water complex and a second sideboard for the shallow-water complex. NOAA Fisheries would manage two separate halibut sideboards (one for the deep-water complex and the other for the shallow-water complex).⁷ These July halibut sideboards would be administered by ending fishing in halibut limited fisheries in a complex by sector members eligible for the rockfish program when the sector halibut limitation is reached in that complex.

Included as an option for consideration is to remove 3rd season halibut PSC sideboards given that much of this catcher processor fleet is also limited by Amendment 80 sideboards. The Council has also included an option for consideration that would limit all catcher processors to the deep water halibut complex fisheries for the month of July.

Additionally, each catcher processor participant would be required to abide by a stand-down in all the Gulf of Alaska non-pollock groundfish fisheries. The stand-down would start on the July opening of the rockfish fishery and end on the earlier of two weeks or on the harvest of 90 percent of the participant's cooperative allocation, if the harvest of the allocation began on the traditional July opening. The maximum stand-down would allow participants to begin at a time other than early July, provided they are willing to abide by the two week stand-down.

In lieu of the stand-down in the Gulf of Alaska groundfish fisheries (other than the CGOA rockfish fisheries), a cooperative may (subject to NMFS approval) manage a sideboard of its catch in Gulf of Alaska groundfish fisheries. Under this approach, a cooperative would be limited in the aggregate to the historic catch of target species, if target catch constrains the fishery (or halibut PSC, for halibut PSC constrained fisheries) of its members in the qualifying years.

Options are included that would remove these standdowns for all of the sideboarded vessels, as most vessels in the rockfish fishery are already subject to sideboards under Amendment 80.

The duration of all CGOA rockfish program permits are 10 years. These permits shall be renewed before their expiration, unless the permit has been revoked, limited, or modified. An option could be adopted to limit the duration of the CGOA rockfish program to 10 years after implementation.

The program will also include a cost recovery program to cover the costs of administering the program. The fee, not to exceed 3 percent of the ex vessel value, will be charged on all landings.

A program review would also be conducted 5 years after implementation. Additional reviews will be conducted 7 years thereafter. This review would assess the progress of the program in achieving the goals identified in the purpose and need statement and the MSA.

Catcher processor alternative 3 – Cooperative or limited access (the pilot program structure)

This alternative is largely the same as the catcher processor cooperative only alternative, except that catcher processors that choose not to join a cooperative are permitted to fish in a limited access fishery (or opt-out of the fishery for the season). Eligible catcher processors wishing to fish in the limited access

⁷ The deep-water complex includes sablefish, rockfish, deepwater flatfish, rex sole, and arrowtooth flounder. The shallow-water complex includes flathead sole, shallow water flatfish, pollock, and Pacific cod.

fishery would need to apply for that fishery in a timely manner. The allocation of primary rockfish species and halibut PSC to the limited access would be based on the histories of LLP licenses registered for participation in the fishery. The allocations that would have been made based on the histories of LLP licenses that are not registered to fish (either in a cooperative or the limited access) would be allocated to cooperatives and the limited access fishery based on the histories of participants in those fisheries.

As under pilot program structure, the limited access portion of the catcher processor CGOA rockfish fishery would open in the beginning of July, and would close when managers estimate that its participants have fully harvested the target rockfish allocations in that fishery. All species, except for the target rockfish, would be managed with MRAs. MRAs would be enforced on a trip-by-trip basis. The secondary species would be managed under the following reduced MRAs, intended to maintain catch levels below the allocated amount:

- Pacific cod – 4 percent
- Sablefish – 3 percent
- Shortraker/rougheye – 2 percent
- Thornyhead – 4 percent

Since the limited access fishery changes some of the dynamics in the GOA fisheries to include opportunities for participants to expand into other fisheries, sideboard measures would apply under this alternative. Participants that choose to fish in the limited access fishery and who account for less than 5 percent of the allocated catcher processor history of Pacific Ocean perch, would be subject to no sideboard or stand-down, beyond the aggregate sector sideboards. Limited access fishery participants that account for 5 percent or more of the sector's Pacific Ocean perch would be required to stand-down in Gulf of Alaska, until 90 percent of the limited access Pacific Ocean perch is harvested.

Eligible catcher processors that do not join a cooperative (i.e., choose to “opt-out” of the program for a year) would be subject to two week stand-downs in the Gulf of Alaska fisheries in which they have less than two years of participation during the first week of July in the qualifying years.

The sideboards for those that join a cooperative under this alternative are the same as those described under the allocation of catcher processor cooperative only structure.

Rules limiting use and holdings of shares by individuals and cooperatives, share duration and renewal provisions, program review, and cost recovery are the same as under the preceding alternative.

Catcher vessel sector alternatives

Catcher vessel alternative 2 - Harvester only cooperative

This catcher vessel alternative establishes a cooperative program for sector members. The distinguishing characteristic of the alternative is that historic processors receive no direct protection of their interests.

Under this alternative, the catcher vessel sector would receive a sector allocation of target rockfish, secondary species (except shortraker rockfish and rougheye rockfish), and halibut PSC based on catcher vessel histories using the same methodology as described under the catcher processor alternatives. The catcher vessel sector, however, would also receive an allocation of Pacific cod based on average annual percentage of total CGOA retained catch of Pacific cod taken by the sector during the CGOA rockfish fishery (instead of fishing under an MRA, as the catcher processor sector would). The catcher vessel sector would fish shortraker rockfish and rougheye rockfish under an MRA of 2 percent. If the sector's harvest of shortraker rockfish reaches 9.72 percent of the Central Gulf TAC, it would go on PSC status

for the sector, under which any retention is prohibited. Cooperative allocations of target rockfish, secondary species (except shortraker rockfish and roughey rockfish), and halibut PSC would be based on the collective target rockfish histories of members during the qualifying years based on the method described under the catcher processor alternatives. Any allowance of halibut PSC that has not been utilized by November 15 or after declaration to stop fishing by a cooperative will be added to the last seasonal apportionment for trawl gear during the current fishing year. Under an option, Pacific cod and sablefish could be managed under a modified MRA that has yet to be defined.

Holders of permanent catcher vessel trawl LLP licenses with directed catch of target rockfish in the qualifying years would be eligible for the cooperative program. Allocations of target rockfish to these licenses would be based on their catches during the qualifying period. In addition, under an option, a permanent license assigned to a vessel that previously used an interim license for targeted rockfish catch in the qualifying period would qualify for the program, provided the permanent license was acquired and assigned to the vessel prior to December 31, 2003 and has been continuously assigned to that vessel through final action. The allocation to these licenses would be the catch of the vessel using the interim and later assigned permanent license. Three qualifying period are under consideration, including periods of years between 1996 and 2006. Qualifying years may differ from the catcher processor sector qualifying years. Qualified catch is based on fish tickets and includes all landings (excluding meal) of target rockfish during the directed fishery.

An option could also be applied to include in the cooperative program otherwise ineligible LLP licenses that participated in the pilot program entry level fishery. To be eligible under the option, an LLP license would need to have registered for the entry level fishery in both 2007 and 2008 and made at least one landing from the entry level fishery in one of those years. An option could be selected to consider 2009 catch history for determining eligibility of pilot program entry level participants. Options defining the allocations to these catcher vessel LLP licenses would be based on 1) the average allocation of the lowest one-third or one-quarter of catcher vessel LLP licenses that participated in the pilot program in either 2007 or 2008, 2) the average allocation of the lowest one-quarter to one-third of all qualified LLP licenses, 3) the actual catch history of the vessel in 2007 or 2008, 4) the average catch history of vessels that participated in the entry level fishery in 2007 or 2008, or 5) the average allocation of all qualified catcher vessel LLP licenses. Under a suboption, 2009 catch history could be considered when defining allocations to entry level pilot program participants. An option could be selected to make allocations of target rockfish, secondary species, and halibut PSC to eligible entry level processors. These allocations would be a percentage of the harvest shares that are allocated to trawl LLPs that qualify from the entry level trawl fishery.

To participate in the fisheries, an eligible license holder must be a member of a cooperative.⁸ Eligible LLP license holders that do not file cooperative agreements with NOAA Fisheries in a timely manner would not be permitted to fish CGOA rockfish. History of LLP licenses not participating would be reallocated within the catcher vessel sector, based on histories of participants that elect to remain in the fishery.

A cooperative would be required to file its agreement with NOAA Fisheries to receive an annual allocation. Cooperative agreements would have a term of one year and must include a fishing plan for the harvest of the cooperative's allocation. Cooperatives are intended only to conduct and coordinate fishing of their member's allocations and are not intended to be formed under the Fishermen's Collective

⁸ The option for a limited access fishery is excluded, as that option appears unnecessary in a fishery with flexible cooperative formation. In addition, a provision that requires a cooperative to accept membership of any LLP license holder eligible for the cooperative subject to the same terms and conditions as governing other members seems unnecessary given the level of flexibility in cooperative formation.

Marketing Act. Cooperative members would be jointly and severally liable for the harvest of the cooperative's allocation. A cooperative could include fishing practice codes of conduct in its membership agreement. Processor affiliated license holders would be permitted to join cooperatives, but would not be permitted to engage in price negotiations, except as permitted by antitrust laws. Cooperatives would be permitted to engage in the transfer of annual allocations. Catcher vessel cooperatives would be permitted to acquire annual allocations from catcher processor cooperatives, but could not transfer annual allocations to catcher processor cooperatives. Any transfers would be temporary transfers of a single year's annual allocation, with the history remaining with the LLP license of origin. Future annual allocations would be based on the cooperative membership of the LLP holder.

To protect community interests, an option could be adopted to require all landings to be made in the Port of Kodiak.

A vessel use cap would limit any catcher vessel from catching more than 4 percent to 10 percent of the target allocations to the sector. An option could be selected to grandfather vessels that historically exceeded that limit. No catcher vessel cooperative would be permitted to hold or use in excess of 30 percent of the catcher vessel sector's allocation, while no person would be permitted to hold or use in excess of between 3 and 5 percent of the catcher vessel sector's allocation. This cap would be applied to limit the amount of shares that a person could bring to a cooperative, either through license holding or through inter-cooperative leasing. To apply this cap, inter-cooperative transfers would need to be conducted through individuals. Persons receiving an allocation in excess of the cap would be grandfathered at the level of the allocation.

A processing cap could be adopted to prohibit any processor from processing in excess of between 20 percent and 33 percent of the primary rockfish species landings and secondary species landings from the catcher vessel sector. An option could be selected to grandfather any processor that historically processed in excess of the processing cap.

Sideboards would limit the participation of eligible catcher vessels in other fisheries. As would be applied to catcher processors, a general sideboard would limit catcher vessel participants, in the aggregate, to their historic harvests in other fisheries in the month of July, the month during which the rockfish fisheries have been prosecuted historically. To accomplish this end, in Gulf fisheries that are historically constrained by TAC, eligible participants from each sector would be limited to their historic catch in the month of July, in the aggregate.

The Council included an option for consideration that would prohibit catcher vessels from directed fishing for WYAK and WGOA primary rockfish species.

Sideboards for Gulf fisheries that are historically constrained by halibut PSC would limit eligible participants in each sector to their historic halibut mortality in the month of July, in the aggregate. Since halibut in the Gulf is not managed in each fishery, but is managed for the deep-water complex and the shallow-water complex, management of the sideboard on a fishery-by-fishery basis would be substantially more complicated than managing one sideboard for the deep-water complex and a second sideboard for the shallow-water complex. NOAA Fisheries would manage two separate halibut sideboards (one for the deep-water complex and the other for the shallow-water complex).⁹

⁹ The deep-water complex includes sablefish, rockfish, deepwater flatfish, rex sole, and arrowtooth flounder. The shallow-water complex includes flathead sole, shallow water flatfish, pollock, and Pacific cod.

The Council has included an option for consideration that would limit all catcher vessels to the shallow water halibut complex fisheries (except for rockfish target fisheries in CGOA, WYAK, and WGOA) for the month of July.

A set of options are included in the alternative that would prohibit or allow qualified catcher vessels entry to the Bering Sea and Aleutian Islands direct fisheries for yellowfin sole, “other” flatfish, or Pacific Ocean perch in the month of July. In addition, two options are also included in the alternative that would limit qualified catcher vessels in the month of July to their historic average total catch in the Bering Sea and Aleutian Islands Pacific cod fishery, in the aggregate or can participated unrestricted during the month of July. Catcher vessel participants in the AFA that are not exempt from Gulf sideboards under the AFA would be exempt from any sideboards under this program.

Program review, cost recovery, and share and program duration options are as described for the catcher processor sector.

Catcher vessel alternative 3 – Allocation of harvest shares to processors

This catcher vessel alternative establishes a cooperative program for sector members. The distinguishing characteristic of the alternative is an allocation of harvest shares to historic and dependent processors in the fisheries, intended to protect interests of those processors.

Under this alternative, the catcher vessel sector allocations of target rockfish, secondary species, and halibut PSC would be the same as described under the previous catcher vessel alternative. In addition, rules governing unallocated species (including options to establish MRAs for some secondary species) would apply to this alternative. Allocations of target rockfish under this alternative would be divided between eligible license holders (i.e., harvesters) and eligible processors, with processors receiving 10, 20, or 30 percent of the sector’s pool, depending on the option selected for making that allocation.

Allocations of the harvester portion of sector’s pool would be made under the rules described in the previous alternative. Options for including persons who fished with interim licenses and persons who participated in the entry level fishery could be applied.

To make the processor allocations, the fixed percentage of the harvest share pool (i.e., exclusive harvest share allocations) would be allocated among eligible processing sector participants based on processing in the fisheries during a specified time period. Annual allocations for processors will be subject to the same allocation and harvest rules governing catcher vessel allocations. Included in the allocation would be target rockfish, secondary species and halibut PSC, with latter allocations based on aggregate allocations of target rockfish. If a share holder fails to apply for an annual allocation, that allocation will be redistributed on a pro rata basis to all share holders in the sector (including holders of shares initially allocated to harvesters and holders of shares initially allocated to processors).

An option could be adopted to specifically qualify processors that participated in the entry level fishery under the pilot program. Under the option, these entry level processors would receive allocations of harvest shares based on their processing histories during a special qualifying period. Two options could be used for defining specific allocations to entry level processors. Under the first, an entry level processor’s allocation would be based on its processing during the entry level qualifying period relative to all other qualified processors’ histories (including other entry level processors). Under the second option, entry level processors collectively would receive the same share of the processor pool of harvest shares as is allocated to entry level harvesters under the harvest sector allocation rules. This portion of the processor harvest share pool would be divided among eligible entry level processors based on their histories during the entry level processing qualifying period.

To participate in the fisheries, an eligible license holder or processor must be a member of a cooperative. Eligible LLP license holders and processors that do not file cooperative agreements with NOAA Fisheries in a timely manner would not be permitted to fish CGOA rockfish. History of LLP licenses and processors not participating would be reallocated within the catcher vessel sector including qualified processors, based on histories of participants that elect to remain in the fishery. Cooperative rules, including rules governing transfers and participation of affiliates of processors, would be the same as those described in the previous alternative.

The Council has included an option in this alternative that would require that a processor's allocation of harvest shares be harvested by a vessel that is not affiliated with the processor.¹⁰ In addition, to protect community interests, the Council has included for consideration an option that would require all landings to be made in the Port of Kodiak.

Harvest shares held by processors will be subject to a 5 percent cap for holding and use. Included in this alternative is option to increase the limit to 10 percent for holding and use of harvest shares held by the processor. An option to grandfather initial recipients is included in this alternative.

For purposes of the transferring harvester shares held by the processor, these harvest shares can be divisible. There are currently three options for who may receive transferred harvest shares held by a processor. The first option would allow these shares to be transferred to processors, at the plant level, who where initially issued harvest shares. The second option would allow shares to be transferred to processors who have processed at least 100-250 metric tons of rockfish delivered by catcher vessels within any two year period during the new rockfish program. Included in this option are two suboptions that would further narrow eligible processors to either ones in the Port of Kodiak or a shoreside processing facility. Finally, the third option would allow harvester shares held by a processor to transfer those shares to a holder of a CGOA rockfish program qualified LLP.

Rules limiting use and holdings of shares by vessels, individuals, and cooperatives, processing caps, sideboard limitations, share duration and renewal provisions, program review, and cost recovery are the same as under the preceding alternative.

Catcher vessel alternative 4 - Severable harvester/processor association – no forfeiture

Eligible harvesters will receive allocations based on qualifying harvest histories. To access the allocation, a harvester must join a cooperative in association with a processor. The harvester has full discretion in choosing a cooperative both initially and annually thereafter and may change cooperatives (and accompanying processor associations) annually without forfeiture. An option could be applied that would require a cooperative to accept any eligible license holder as a member subject to the same terms and conditions applicable to other members.¹¹ As with the preceding alternatives, no explicit processor delivery requirement would be established by the program; a Port of Kodiak delivery requirement is being considered; and no limit on processor entry would be included in the program.

Under this alternative, the catcher vessel sector would receive allocations of CGOA rockfish, secondary species, and halibut PSC using the same methodology as described under the harvester only cooperative

¹⁰ It is unclear whether this provision can be effectively implemented, as tracking of individual share usage in a cooperative management program may be infeasible.

¹¹ The Council should note that, at this time, staff has included this option only in this alternative. This alternative is the only one that imposes any limitation on cooperative formation choices for catcher vessels, which is the arguable rationale for the inclusion of this provision (see sections 9.4 and 11 of the following elements and options).

alternative with no allocation to pilot program entry level participants. Eligibility for the program and long term and annual allocations of these species would be made to sector members and cooperatives, respectively, as described under the harvester only cooperative alternative.

Rules limiting use and holdings of shares by vessels, individuals, and cooperatives, shore-based processing limitations, sideboard limitations, share duration and renewal provisions, program review, and cost recovery are the same as under the preceding alternative.

Elements and options defining the program alternatives

The Council has identified the following elements and options to define its alternatives

Entry-Level Fishery Alternatives (EL)

1. Status Quo (revert back to LLP management)
2. Entry level trawl/fixed gear fisheries (the pilot program structure)
3. Fixed gear only fishery

Catcher Processor Alternatives (CP)

1. Status Quo (revert back to LLP management)
2. Catcher processor cooperative only
3. Cooperative or limited access (the pilot program structure)

Catcher Vessel Alternatives (CV)

1. Status Quo (revert back to LLP management)
2. Harvester only cooperative
3. Harvester cooperatives with allocation of harvest shares to processors
4. Severable harvester/processor association – no forfeiture

The above alternatives are defined by the following elements and options.

1 ICA Set Aside

Prior to allocation of catch history to the sectors, NMFS shall set aside an Incidental Catch Allocation (ICA) of Pacific Ocean perch (POP), northern rockfish, and pelagic shelf rockfish to meet the incidental catch needs of fisheries not included in the cooperative program. (EL – all)

2 Entry-level Set Aside (EL – all)

A percentage of CGOA POP, northern rockfish and pelagic shelf rockfish for catcher vessels not eligible to participate in the program.

2.1 Trawl and fixed gear (non-trawl) entry level fisheries (EL – 2)

The annual set aside will be 5 percent of each of these target rockfish species.

Set-asides shall be apportioned at 50% for trawl gear and 50% for fixed gear.

The trawl sector's allocation by weight (based on the aggregate TAC for Pacific Ocean perch, Northern and pelagic shelf rockfish) shall first be Pacific Ocean perch.

Unharvested allocations to either sector shall be available to both sectors at the end of the third quarter.

The entry level fishery will be managed as a limited entry fishery.

Start dates for the entry level fishery should be January 1 for fixed gear and approximately May 1 for trawl gear.

2.1.2 Halibut PSC Limit Allocation

Prosecution of the entry level fishery will be supported by general allowance of halibut PSC to the gear type and the general allocations of secondary species.

Trawl halibut PSC options

Option 1: If sufficient halibut PSC is not available at the start of the trawl gear fishery (May 1), the start date will be on the next release of halibut PSC.

Option 2: If sufficient halibut PSC is not available at the start of the trawl gear fishery (May 1), halibut usage will be deducted against the following quarter's halibut PSC allowance.

Vessels that can participate in the entry level fishery are those vessels that did not qualify for the CGOA rockfish cooperative program. Before the beginning of each fishing year an application must be filed with NMFS by the interested vessel that includes a statement from a ~~non-qualified~~¹² processor confirming an available market.

Option: Entry level fixed gear sector are exempt from VMS requirements.

2.2 Fixed gear (non-trawl) only entry level fishery (EL-3)

The annual set aside will be;

1 – 10 mt of the POP TAC

1 - 10 mt of the northern rockfish TAC

10 - 30 mt of the pelagic shelf rockfish TAC.

If the entry-level fishery harvests 90% or more of their allocation of a species, the set-aside would increase by the amount of the initial allocation the following year:

1 - 10 mt POP

1 - 10 mt Northern rockfish

10 - 30 mt pelagic shelf rockfish

This increase would be capped at a maximum of:

POP

a. 1%

b. 3%

c. 5%

Northern Rockfish

a. 2%

b. 3%

c. 5%

Pelagic Shelf Rockfish

a. 2.5%

¹² Under the pilot program, all deliveries from the entry level fisheries must be made to processors that are not eligible for the main program. Since no limit on processor entry is contained in the alternatives for the revised program, this provision is unworkable in its current form. In addition, limits on processor entry may not be permitted under the current MSA authority.

- b. 3%
- c. 5%

The entry level fishery will be managed as a limited entry fishery.

Start date for the entry level fishery should be January 1.

Prosecution of the entry level fishery will be supported by general allowance of halibut PSC to the gear type and the general allocations of secondary species.

Any vessel or gear type exempt from CGOA LLP requirements or any holder of a CGOA fixed gear LLP may enter a vessel in the entry level fishery.

Option: Entry level fixed gear sector are exempt from VMS requirements.

3 Program eligibility (CP – all and CV – all)

The eligibility for entry into the cooperative program is one targeted landing of POP, Northern rockfish or PSR caught in CGOA during the qualifying period using a CGOA trawl LLP license.

Option: In addition, the following participants would be eligible to enter the program:

those persons whose vessel had one targeted landing of POP, northern rockfish or PSR caught in CGOA during the qualifying period with interim trawl CGOA license that was later determined to be an invalid trawl CGOA endorsement, but who acquired a valid CGOA trawl license prior to December 31, 2003, which has been continuously assigned to the vessel with the target landing since acquired until the date of final Council action.

4 Qualified catch (CP – all and CV – all)

4.1 Basis for the allocation to the LLP license holder is the catch history of the vessel on which the LLP license is based and shall be on a fishery-by-fishery basis. The underlying principle of this program is one history per license. In cases where the fishing privileges (i.e., moratorium qualification or LLP license) of an LLP qualifying vessel have been transferred, the allocation of harvest shares to the LLP shall be based on the aggregate catch histories of (1) the vessel on which LLP license was based up to the date of transfer, and (2) the vessel owned or controlled by the LLP license holder and identified by the license holder as having been operated under the fishing privileges of the LLP qualifying vessel after the date of transfer. (Only one catch history per LLP license.)

Option: For licenses qualified based on catch of a vessel using an interim license, the basis for the allocation will be the catch history of such vessel, notwithstanding the invalidity of the interim Central Gulf trawl LLP endorsement under which the vessel operated during the qualifying period. History allocated under this provision shall be assigned to the LLP license.

4.2 Catch history will be the history during the following qualifying period:

- 1) 1996-2002 (drop two)
- 2) 1998-2006 (drop two or four)
- 3) 2000-2006 (drop two)

4.3 Qualified target species history is allocated based on retained catch (excluding meal) during the rockfish target fishery. Different years may be used (or dropped) for determining the history of each of the three rockfish species.

The CP catch history will be based on WPR data.

CV catch history will be based on fish tickets.

- 4.4 Entry level trawl qualification/allocations for the main program:
- 1) Vessels / LLPs that do not qualify for Cooperative quota (CQ) for the CGOA rockfish cooperative program.
 - 2) The trawl LLP must have registered for the entry level fishery both in 2007 and 2008.
Option: Add 2009
 - 3) The trawl LLP must have made a landing of fish in the entry level fishery with trawl gear in either 2007 or 2008.
Option: Add 2009
- 4.5 The qualified entry level trawl LLP would receive an allocation of QS for the primary rockfish species equivalent to:
- 1) Average of the lowest one-quarter to one-third of the qualified CV LLPs that actively fished in the RPP program in either 2007 or 2008.
 - 2) Average of the lowest one-quarter to one-third of all qualified CV LLPs.
 - 3) Actual catch history of the vessel/LLP in 2007 or 2008 (information would be withheld due to confidentiality restrictions unless the vessel(s) agrees to have the data released to the public).
 - 4) Average of the qualified CV LLPs that actively fished in the RPP program in either 2007 or 2008
 - 5) Average of all qualified CV LLPs
- Option: Add 2009 to options calculated from catch history in the entry level fishery.

Note: secondary and halibut PSC allocations are calculated the same as the other qualified LLPs.

5 Sector definitions (CP – all and CV – all)

Trawl catcher vessel – A trawl catcher-vessel that has a CV or CP LLP license, but does not process its catch on board.

Trawl catcher processor - A trawl catcher-processor is a trawl vessel that has a CP LLP license and that processes its catch on board.

6 Rationalized areas (CP – all and CV – all)

History is allocated for the CGOA only (NMFS statistical areas 620 and 630).

7 Sector allocations (CP – all and CV – all)

7.1 Target rockfish species

Catch history is determined by the sector's qualified catch in pounds as a proportion of the total qualified catch in pounds.

Sector allocations of target rockfish species are based on individual qualified vessel histories applying any applicable drop year provision at the vessel level.

Full retention of the target rockfish species required

7.2 Secondary species

Secondary species history is allocated based on retained catch of the species while targeting rockfish over retained catch in all fisheries.

7.2.1 Except as provided below, history will be allocated to each sector for the following secondary species:
sablefish,
shortraker rockfish
roughey rockfish,
thornyhead rockfish, and
Pacific cod.

7.2.3 Except as otherwise provided below, secondary species allocations will be based on: The sector's average annual percentage of retained catch of the secondary species by the rockfish target fisheries during the qualifying period. For each qualifying year calculate the sector's retained catch of the species in the target rockfish fisheries divided by the retained catch of all CGOA fisheries. Sum these percentages and divided by the number of qualifying years. The calculated average annual percentage is multiplied by the secondary species TAC for that fishery year and allocated to each sector in the cooperative program.

7.2.4 Exceptions:

Shortraker and roughey

For shortraker and roughey:

For the CP sector:

a shortraker allocation of the TAC will be:

Option 1a: 30.03 percent

Option 1b: 50 percent

To be managed as a hard cap, and a roughey allocation of 58.87% of the TAC, to be managed as a hard cap.

Option 2: shortraker and roughey will be managed with a combined MRA of 2%.

For the CV sector, shortraker and roughey should be managed with a combined MRA of 2 percent. If harvest of shortraker by the CV sector reaches 9.72% of the shortraker TAC, then shortraker should go on PSC status for that sector.

Sablefish and Pacific cod

For the catcher processor sector, Pacific cod history will be managed by MRA of 4 percent.

Option 1: No directed fishing for secondary species Pacific cod and sablefish

Option 2: Manage Pacific cod and sablefish under a modified MRA.

Participants must retain all allocated secondary species and stop fishing when cap is reached.

MRAs in the CP sector will be enforced on a trip-by-trip basis.

7.3 Prohibited species (halibut mortality)

Option 1: Allocation to the rockfish cooperative program will be based on historic average usage, calculated by dividing the total number of metric tons of halibut mortality in the CGOA rockfish target fisheries during the qualifying years by the number of years.

Option 2: Allocation to the rockfish cooperative program will be based on historic average usage in the first three years of the rockfish pilot program, calculated by dividing the total number of metric tons of halibut mortality in the CGOA rockfish target fisheries during those years by the number of years.

Option 3: Allocation to the rockfish cooperative program will be based on the historic average usage, calculated as:

- 1) 50 percent of the total number of metric tons of halibut mortality in the CGOA rockfish target fisheries during the qualifying years divided by the number of qualifying years plus
- 2) 50 percent of the total number of metric tons of halibut mortality in the first three years of the rockfish pilot program divided by three (i.e., the number of years).

The halibut allocation will be divided between sectors based on the relative amount of target rockfish species allocated to each sector (e.g., the sector's share of total qualified catch).

Option for supplementing the last seasonal halibut apportionment for trawl gear

10, 25, 50, 75, or 100 percent of any allocation of halibut PSC that has not been utilized by November 15 or after the declaration to terminate fishing will be added to the last seasonal apportionment for trawl gear during the current fishing year. The remaining portion of any allocation will remain unavailable for use.

8 Allocation from sector to vessel (CP – all and CV – all)

Within each sector, history will be assigned to LLP holders with CGOA endorsement that qualify for a sector under the 'sector allocations' above. The allocations will be to the current owner of the LLP of the vessel which earned the history.

Target Species

Each LLP holder will receive an allocation of history equivalent to the license's proportion of the total of the sector qualifying history.

Secondary Species

Each LLP holder will receive an allocation of allocated secondary species equal to the license's proportion of the sector' target rockfish history.

PSC (Halibut Mortality)

Each LLP holder will receive an allocation of halibut mortality equivalent to the license's proportion of the sector's target rockfish history.

Halibut PSC in the CP sector shall be divided between the co-op(s) and limited access according to the history of the participating vessels.

Allocations are revocable privileges

The allocations under this program:

- 1) may be revoked, limited, or modified at any time,
- 2) shall not confer any right of compensation to the holder, if it is revoked, limited, or modified, and
- 3) shall not create or be construed to create any right, title, or interest in or to any fish before the fish is harvested by the holder.

Domestic processing

All fish harvested with an allocation from this program must be processed in the U.S.

Regionalization – Apply to catcher vessel sector only:

Option 1: All CV CQ must be landed in the Port of Kodiak.

9 Catcher vessel/shore based processor provisions (CV – all)

9.1 Processor eligibility (CV-3)

An eligible processor is a processing facility that has purchased:

Option 1 - 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish harvest per year, for 4 years, from 1996 to 2000.

Option 2 - 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish per year, for 4 years, from 2000 to 2006.

Suboption: (entry level fishery processor): 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish harvested from 2007 to 2008.

Suboption: Add 2009

Processor qualifying years

Each eligible shore based processor is allocated processor catch history based on individual processor histories of CGOA target rockfish for the years:

Option 1 - 1996-2000 (drop 1 year)

Option 2 - 2000–2006 (drop 2 year)

Suboption 1: (entry level processors): 2007–2008

Suboption: Add 2009

Suboption 2: (entry level processors) Eligible entry level processors will be allocated target rockfish, secondary species, and halibut PSC from the processor pool of harvest shares that are derived from those trawl LLPs that received allocations based on participation in the entry level trawl fishery into the main program.

For alternatives with processor associations the drop year is selected by the processor and applied to all LLP licenses when determining those associations.

9.2 Option A - Harvester only cooperative (CV-2)

Allocation of the primary rockfish, secondary species, and halibut PSC to the CV sector shall be to harvesters (i.e., 100/0).

A holder of catcher vessel harvest history may join a cooperative to coordinate the harvest of allocations. (Cooperatives are subject to general cooperative rules below.) Membership agreements will specify that processor affiliated cooperative members cannot participate in price setting negotiations except as permitted by general antitrust law.

Cooperatives are intended only to conduct and coordinate harvest activities of the members and are not FCMA cooperatives.

Co-ops may engage in inter-cooperative transfers of annual allocations to other cooperatives.

Membership agreements will specify that processor affiliated cooperative members cannot participate in price setting negotiations except as permitted by general antitrust law.

9.3 Option B - Harvester cooperatives with processor allocation of harvest shares (CV – 3)

Allocation of the primary rockfish, secondary species, and halibut PSC to the CV sector shall be apportioned between harvesters (CV only) and shore based processors:

Option 1: 90/10

Option 2: 80/20

Option 3: 70/30

Eligible processors will be allocated target rockfish, secondary species, and halibut PSC from the processor pool of harvest shares in proportion to its qualifying processing history. Annual allocations will be of the same species and subject to the same allocation and harvest rules governing catcher vessel allocations.

Option: Processor allocations of CV harvest shares may be harvested only by vessels that are not owned or controlled by the holder of those harvester shares (using the AFA rules for determining control and ownership).

A holder of catcher vessel harvest history or processor histories may join a cooperative to coordinate the harvest of allocations. (Cooperatives are subject to general cooperative rules below.) Membership agreements will specify that processor affiliated cooperative members cannot participate in price setting negotiations except as permitted by general antitrust law.

Cooperatives are intended only to conduct and coordinate harvest activities of the members and are not FCMA cooperatives.

Co-ops may engage in inter-cooperative transfers of annual allocations to other cooperatives.

Membership agreements will specify that processor affiliated cooperative members cannot participate in price setting negotiations except as permitted by general antitrust law.

9.4 Option B - Harvester cooperatives with severable processor associations and no forfeiture (CV-4)

Harvesters must join a cooperative to participate in the target rockfish fisheries.

10 Catcher processor cooperatives

More than one co-op may form within the sector.

Allocations may be transferred between co-ops of at least two LLPs.

Participants have a choice of participating in:

Option 1: a co-op or opt out of the rockfish program,

Option 2: a co-op, a limited access fishery, or opt of the rockfish program

Option: A minimum of two independent entities are required to form a CP cooperative (using the 10% AFA rule)

Under the LLP/open access fishery option, the LLP's historic share will be fished in a competitive fishery open to rockfish qualified vessels who are not members of a cooperative. The secondary species would be managed under the following reduced MRAs, intended to maintain catch levels below the allocated amount: Pacific cod - 4 percent, sablefish - 3 percent, shortraker/rougeye - 2 percent, and thornyhead - 4 percent. All other species would be managed with MRAs at their current levels.

11 General cooperative provisions – apply to both sectors

Duration of cooperative agreements is 1 year.

The cooperative membership agreement (and an ancillary agreement with an associated processor, if applicable) will be filed with the RAM Division. The cooperative membership agreement must contain a fishing plan for the harvest of all cooperative fish.

Cooperative members shall internally allocate and manage the cooperative's allocation per the cooperative agreement.

Subject to any harvesting caps that may be adopted, allocated history may be transferred and consolidated within the cooperative.

The cooperative agreement must have a monitoring program. Cooperative members are jointly and severally responsible for cooperative vessels harvesting in the aggregate no more than their cooperative's allocation of target rockfish species, secondary species and PSC mortality, as may be adjusted by inter-cooperative transfers.

A cooperative may adopt and enforce fishing practice codes of conduct as part of their membership agreement.

Option: Cooperative membership agreements shall allow for the entry of other eligible harvesters into the cooperative under the same terms and conditions as agreed to by the original agreement.

Cooperatives will report annually to the Council as per AFA.

12 Sector Transfer provisions

CP annual allocations may be transferred to CV cooperatives. CV annual allocations may not be transferred to CP cooperatives.

All transfers of annual allocations would be temporary and history would revert to the original LLP at the beginning of the next year.

A person holding an LLP that is eligible for this program may transfer that LLP. That transfer will effectively transfer all history associated with the LLP and any privilege to participate in this program that might be derived from the LLP.

Permit post-delivery transfers of cooperative quota (annual allocations to cooperatives).

There would be no limits on the number or magnitude of post-delivery transfers. All post-delivery transfers must be completed by December 31st.

No cooperative vessel shall be permitted to begin a fishing trip unless the cooperative holds unused cooperative quota.

Harvest shares held by processors will be divisible for transfer.

Harvest shares held by processors may be transferred to:

Option 1: Those processors, at the plant level, who were initially issued harvest shares

Option 2: Those processors who have processed at least 100-250 metric tons of rockfish delivered by catcher vessels within any two-year period during the new program

- Suboption 1: in the port of Kodiak
- Suboption 2: to a shoreside processing facility
- Option 3: a holder of a Central GOA rockfish program eligible LLP

13 Cooperative Harvest Use Caps

CV cooperatives

No person may hold or use more than 3-5% of the CV historic shares, using the individual and collective rule (Option: with grandfather provision).

Control of harvest share by a CV cooperative shall be capped at 30% of aggregate POP, Northern Rockfish and PSR for the CV sector.

No CV may catch more than 4-10 % of the target CV allocation
(Option: with grandfather provision).

Harvest shares held by processors will be subject to the same 5% cap for holding and use that applies to harvest shares held by harvesters

Suboption: 10% cap

Suboption: Grandfather initial recipients

CP cooperatives

No person may hold or use more than 20, 30, or 40 percent of the CP historic shares, using the individual and collective rule

(Option: with grandfather provision).

Control of harvest share by a CP shall be capped at 60% of aggregate POP, Northern Rockfish and PSR for the CP sector.

Option: Eligible CPs will be grandfathered at the current level.

Shoreside Processor Use Caps

Shoreside processors shall be capped at the entity level.

No processor shall process more than 20%, 25%, 30% or 33% of aggregate POP, Northern Rockfish and PSR for the CV sector.

No processor shall process more than 20%, 25%, 30%, or 33% of aggregate secondary species for the CV sector.

(The year 2002 will be used as a base (or index) year for applying the aggregate caps.)

Option: Eligible processors will be grandfathered.

14 Harvesting provisions

The cooperative season start date is May 1 and closing date is November 15. Any limited access fishery will open in early July, as under the previous License Limitation Program management.

All non-allocated species will be managed by MRA, as in the current regime. This includes Arrowtooth flounder, deep water flatfish, shallow water flatfish, flathead sole, rex sole, pollock, other species, Atka mackerel and other rockfish. Basis species for purposes of determining MRAs will be:

Option 1 - Only primary allocated rockfish species

Option 2 - All allocated species

Secondary species allocations may be fished independently of the primary species allocations.
Option: No directed fishing for secondary species Pacific cod and sablefish.

Full retention of all allocated species is required.

15 Program review

A formal detailed review of the program shall be undertaken 5 years after implementation. The review shall assess:

- 1) the progress of the program in achieving the goals identified in the purpose and need statement and the MSA, and
- 2) whether management, data collection and analysis, and enforcement needs are adequately met. Additional reviews will be conducted every 7 years there after coinciding with the fishery management plan policy review.

16 Duration

Share Duration

The duration of all CGOA rockfish LAPP program permits are 10 years. These permits shall be renewed before their expiration, unless the permit has been revoked, limited, or modified.

Option: Program Duration

Absent Council review and recommendation to extend, the CGOA rockfish LAPP program expires 10 years after implementation.

17 Cost recovery

A fee, not to exceed 3 percent of ex vessel value, will be charged on all landings to cover the costs of administration of the program.

18 Sideboards

18.1 Catcher vessel options

West Yakutat and Western Gulf Primary Rockfish Species

Option 1: For fisheries that close on TAC in the Gulf, the qualified vessels in the trawl catcher vessel sector would be limited, in aggregate, in the month of July to the historic average catch of those vessels based on the retained catch as a percentage of the retained catch in the fishery in the month of July during the qualification years. Fisheries that this sideboard provision would apply to include West Yakutat rockfish and Western Gulf rockfish.

Option 2: For catcher vessels, prohibit directed fishing for WYAK and WGOA primary rockfish species.

Halibut PSC

Option 1: For flatfish fisheries in the GOA that close because of halibut bycatch, the qualified vessels in the trawl catcher vessel sector would be limited, in the aggregate, in the month of July to the historic average halibut mortality taken by those vessels in the target flatfish fisheries in the month of July by deep and shallow complex as a Gulf-wide cap.

Option 2: For the month of July, limit all CVs to the shallow halibut complex fisheries (except for rockfish target fisheries in CGOA, WYAK and WGOA).

In the event that one or more target rockfish fisheries are not open, sideboard restrictions will not apply for those target allocations.

IFQ halibut and sablefish are exempt from sideboard provisions

Bering Sea and Aleutian Island Sideboard Provisions

Yellowfin sole, other flatfish, and Pacific ocean perch fisheries

Option 1: The qualifying vessels in the trawl catcher vessel sector cannot participate in the directed yellowfin sole, other flatfish (flathead, etc) or Pacific Ocean perch fisheries in the BSAI in the month of July.

Option 2: The qualifying vessels in the trawl catcher vessel sector can participate in the limited access yellowfin sole, other flatfish or Pacific Ocean perch fisheries in the BSAI in the month of July.

Pacific cod fishery

Option 1: Qualifying vessels in the trawl catcher vessel sector can fish in the BSAI Pacific cod fishery in the month of July and would be limited, in aggregate, to the historic average catch of those vessels in the BSAI Pacific cod fishery based on the retained catch as a percentage of retained catch in the catcher vessel trawl fishery in July during the qualification years ~~1996 to~~ 2002.

Option 2: The qualifying vessels in the trawl CV sector can participate in the BSAI Pacific cod fishery in the month of July without any sideboard limit.

AFA non-GOA exempt CVs qualified under this program are subject to the restraints of AFA sideboards and their co-op agreements, and not subject to additional sideboards under this program.

18.2 Catcher processor options

West Yakutat and Western Gulf Primary Rockfish Species

Option 1: For fisheries that close on TAC in the Gulf, the qualified vessels in the trawl catcher processor sector would be limited, in aggregate, in the month of July to the historic average catch of those vessels based on the retained catch as a percentage of the retained catch in the fishery in the month of July during the qualification years. Fisheries that this sideboard provision would apply to are the West Yakutat and Western Gulf primary rockfish species fisheries.

Option 2: For catcher processors, no sideboard limits will apply to the West Yakutat and Western Gulf primary rockfish species fisheries (**rockfish eligible catcher processors that are also Amendment 80 participants would continue to be limited by Amendment 80 sideboards**).

Halibut PSC

Option 1: For flatfish fisheries in the GOA that close because of halibut bycatch, the qualified vessels in the trawl catcher processor sector would be limited, in the aggregate, in the month of July to the historic average halibut mortality taken by those vessels in the target **groundfish flatfish** fisheries in the month of July by deep and shallow complex as a Gulf-wide cap.

Option 2: For catcher processors, no **July GOA halibut sideboard limit (rockfish eligible catcher processors that are also Amendment 80 participants would continue to be limited by Amendment 80 sideboards)** ~~sideboard limits will apply to Gulf 3rd season halibut PSC.~~

Suboption: Limit all CPs to the deep water halibut complex fisheries for the month of July.

Note: IFQ halibut and sablefish are exempt from sideboard provisions

Standdown for vessels that opt out of the rockfish fisheries

Option 1: CP vessels may decide to opt out of the CGOA cooperative program on an annual basis. These CP vessels may not target POP, Northern rockfish or Pelagic Shelf rockfish in the CGOA in the years they choose to opt out. They may retain these species up to the MRA amount in other fisheries. They will be sideboarded at the sector level in the GOA as described in the general provisions.

The history of CP vessels which opt out will remain with the sector.

CPs that opt out of the rockfish cooperative program will be prohibited, for two weeks following the start of the traditional July rockfish fishery, from entering other GOA fisheries in which they have not previously participated. Participation shall be defined as having been in the target fishery during the first week of July in at least two of the qualifying years. For purposes of qualifying under this provision, history from area 650 (SEO) will be considered the same as history from area 640 (WY). The following weekending dates will be used for determining participation in a target fishery:

1996 – July 6
1997 – July 5
1998 – July 4
1999 – July 10
2000 – July 15
2001 – July 7
2002 – July 6
2003 – July 5
2004 – July 10
2005 – July 9
2006 – July 8

(note: bolded dates are suggested as an extension from the pilot program years)

Opting out is an annual decision. CP vessels which choose to opt out must so notify NMFS. The decision to opt out should not in any way alter the status of their catch history for future rationalization programs.

Option 2: No standdown for vessels that opt out of the rockfish fishery.

Standdown for vessels that join cooperatives

Option 1: For the CP sector, the cooperative program fishery participants must either:

- 1) start fishing in the target rockfish fisheries at the same time as the opening of the CGOA rockfish limited access fisheries (in July) and harvest 90% of their CGOA rockfish allocation prior to entering any other GOA non-pollock groundfish fishery, or 2)

standdown for two weeks from the opening of the CGOA rockfish limited access fishery prior to participating in any other GOA non-pollock groundfish fishery.

A vessel which has met either standdown requirement can then move into the GOA open access fisheries subject to the sector level limitations in the GOA in the general sideboard provisions.

To the extent permitted by the motion, history may be leased between vessels. Each member of a cooperative that transfers its history to another CP or CV must still refrain from operating in any other GOA groundfish fishery until the earlier of:

- 1) 90% of all of the CGOA rockfish allocation on the stacked vessel is harvested in the CGOA, provided fishing of the allocation began on or after the opening of the limited access fishery
- 2) two weeks from the opening of the limited access fishery prior to participating in any other GOA groundfish fishery.

Members of a cooperative will be subject to all limitations and restrictions described in the general sideboard provisions and CP specific sideboard provisions except that cooperative members shall not be subject to any standdown in the GOA groundfish fisheries, if all vessels in the co-op maintain adequate monitoring plan during all fishing for CGOA rockfish sideboard fisheries.

In addition to the other limitations and restrictions described above, each cooperative will be limited in the aggregate:

- 1) for fisheries that close on TAC in the GOA in the month of July, to the historic average total catch of the cooperative members in the month of July during the qualification years ~~1996 to 2002~~. Fisheries that this sideboard provision would apply to include West Yakutat rockfish and WGOA rockfish, and
- 2) for flatfish fisheries in the GOA that close because of halibut bycatch in the month of July, to the historic average halibut mortality taken by cooperative members in the target flatfish fisheries in the month of July by deep and shallow complex.

Option 2: No standdown (or alternative cooperative limit) for vessels that join cooperatives in the rockfish fishery.

Standdown for vessels that join the limited access fishery

Option 1: The limited access fishery starts at the same time as the traditional rockfish target fishery (early July). For vessels that account for less than 5% of the allocated CP history in the Pacific Ocean perch fishery that participate in the limited access rockfish fishery, there are no additional intra-sector sideboards. For vessels that account for greater than or equal to 5 percent of the allocated CP history in the Pacific Ocean fishery that participate in the limited access rockfish fishery and GOA standdowns are in place until 90% of the limited access Pacific Ocean perch quota is achieved.

Option 2: No standdown for any vessels that join the limited access rockfish fishery.

2.2.3 Alternatives considered but not advanced for analysis

The Council developed the alternatives from a list of elements and options, beginning with the elements of the existing rockfish pilot program, and proposed changes of stakeholders, the public, and its Advisory Panel. The Council used an iterative process for defining alternatives, deliberating concerning the specific

provisions after receiving staff discussion papers and public testimony over the course of several meetings. The Council considered a variety of elements and factors (including those factors and considerations required by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) when developing a Limited Access Privilege Program). The discussion that follows summarizes alternatives considered by the Council but not advanced for analysis.

The existing rockfish pilot program qualifies each eligible catcher vessel license for a single cooperative, which must associate with the processor to which the catcher vessel delivered the most pounds in a specified qualifying period. In developing this action, the Council considered that structure as well as other structures that qualify catcher vessels for specific cooperatives and establish penalties or forfeitures payable on changing cooperatives (and processor associations). These associations could be used to protect processor and community interests, by recognizing historic relationships in the fishery. The Council considered incorporating these structures (or similar structures) into its alternatives. The Council elected to consider other structures to protect community and processor interests under the new program. These structures include regional landing requirements, allocations of harvest shares to processors, annual cooperative/processor associations (which may be changed without penalty or forfeiture), caps on the amount of landings that may be processed by any single processor.

The Council considered including in the program a system of regional fishery associations (as authorized under the MSA). Regional fishery associations are voluntary associations of the holders of quota designated for use in a region that meet criteria established by the Council. These associations are generally intended to protect regional interests and fishery dependence, including the interests of shore based businesses. The Council elected to consider other provisions that recognize and support historic regional dependence on the fishery.

The MSA requires the Council to consider, if appropriate, an auction system or other program to collect royalties for the initial (or any subsequent distribution of) allocations. After consideration, the Council elected to omit any provision for the auction of shares (or other collection of royalties) from this program. Under the alternatives, allocations are based on historic fishery dependence, as represented by qualified harvesting (and processing) histories. Participants in the fishery also participate in a variety of limited access fisheries in which harvesters must race for catch and processors must compete and race for landings.

2.3 Existing Conditions in the Fishery

This section describes the existing conditions in the CGOA rockfish fishery. Descriptions of the fishery under the License Limitation Program (under which the fishery was managed prior to the rockfish pilot program) and the rockfish pilot program are included. The section begins with a brief description of these two management structures, followed by a description of the stocks, biology, and environmental conditions. Participation patterns in harvesting and processing in the fisheries are described, including a discussion of the relationship between those two sectors and a brief summary of the other fisheries that CGOA rockfish participants also participate in. Ex vessel pricing practices are described and estimated historic prices are provided. Product markets are described and estimated historic first wholesale prices are provided. A brief description of community and social conditions are provided as background for the socioeconomic analysis.

2.3.1 Management of the Fisheries

License Limit Program Management (pre-pilot program)

Until 2007, when NOAA Fisheries implemented the rockfish pilot program, the Central Gulf of Alaska rockfish fisheries were managed under the LLP. Under the LLP, the fisheries opened on January 1st for non-trawl gear participants. The opening for trawl gear was near July 1st, but varied year-to-year. The trawl opening was generally timed to coincide with the availability of the quarterly halibut PSC allocation. The fishery was also timed to accommodate the sablefish longline survey that occurs later in the summer. The goal was to complete the rockfish fisheries, which take some sablefish, early enough to allow the redistribution of sablefish stocks to avoid possible survey bias. The opening was also scheduled to accommodate in-season management, so that managers had adequate catch and effort information to make Federal Register closure announcements, if needed, avoiding the 4th of July holiday weekend. The opening typically coincided with the openings of the Aleutian Islands Pacific ocean perch and Bering Sea flathead sole fisheries to distribute effort among the fisheries.

Both the trawl and non-trawl fisheries were, prosecuted from a single TAC, with the harvest from the trawl fishery limited to the remaining available TAC after the non-trawl fleet had prosecuted the fishery from its January 1st opening. Since the non-trawl fleet has little catch in the fisheries historically, the trawl fleet harvested most of the TAC. (Table 2-1) summarizes openings for trawl gear and closings for all gear types in the CGOA directed rockfish fishery by species from 1996 to 2006.

Table 2-1 Season openings (trawl only) and closings (all gear) of the Central Gulf of Alaska directed rockfish fisheries by species 1996 to 2006

Year	Opening for species	Opening date	Closures			Reason
			Pacific Ocean	Northern	Pelagic Shelf	
			Perch	Rockfish	Rockfish	
1996	all	July 1	July 11	July 20	August 7	TAC (POP, Nor)/HAL(PSR)
1996 reopen	PSR	October 1	---	---	December 2	HAL
1997	all	July 1	July 7	July 10	July 15	TAC
1998	all	July 1	July 6	July 14	July 19	TAC
1998 reopen	POP	July 12	July 14	---	---	TAC
1999	all	July 4	July 11	July 19	---	TAC(POP, Nor)
1999 reopen	POP, Nor	August 6	August 8	August 10	September 3	TAC(POP, Nor)/HAL(PSR)
2000	all	July 4	July 15	July 26	July 26	TAC(POP, Nor)/HAL(PSR)
2001	all	July 1	July 12	July 23	July 23	TAC(POP)/HAL(Nor, PSR)
2001 reopen	Nor, PSR	October 1	n/a	October 21	October 21	HAL
2002	all	June 30	July 8	July 21	July 21	TAC
2003	all	June 29	July 8	July 31	July 29	TAC
2004	all	July 4	July 12	July 25	July 25	TAC (POP)/HAL (Nor, PSR)
2005	all	July 5	July 14	July 24	July 24	TAC (POP)/HAL(Nor, PSR)
2005 reopen	PSR	September 1	---	---	September 4	HAL
2005 reopen	PSR	September 8	---	---	September 10	HAL
2006	all	July 1	July 6	July 22	July 21	TAC
2006 reopen	PSR	October 2	---	---	October 8	HAL

TAC - Total Allowable Catch reached

HAL - Deepwater seasonal halibut prohibited species catch limit reached

Nor - Northern rockfish

POP - Pacific ocean perch

PSR - Pelagic shelf rockfish

Source: NOAA fisheries status reports, information bulletins, and groundfish closure summaries

The closings show the general progression of effort in the rockfish fisheries under the LLP. Most participants targeted Pacific ocean perch first, until the TAC of that species is fully harvested. Pacific ocean perch are a larger biomass and typically are easier to target than the other two fisheries. The season for Pacific ocean perch during this period usually lasted between one and two weeks. Once the Pacific ocean perch fishery closed, vessels usually moved on to northern rockfish or pelagic shelf rockfish directed fisheries, although some vessels moved on to other fisheries in and outside of the CGOA. The directed fisheries for northern rockfish and pelagic shelf rockfish typically lasted less than one month, closing before the end of July. Managers exercised some caution in managing the fishery, occasionally closing the fisheries to ensure that the TAC was not exceeded. When sufficient TAC remained available, managers reopened the fisheries later to allow participants to complete the harvest.

Typically, harvests of the rockfish TACs resulted in closure of the fisheries, although at times halibut PSC in the deep-water complex closed the fisheries. In 2001, 2004, and 2005, halibut PSC closed both the northern rockfish and pelagic shelf rockfish fisheries in July. While in 2001 the fishery reopened on October 1st, when the fifth season halibut allocation came available, in 2004 and 2005, the fisheries never opened after their closure in late July.

Until 1998, the federally managed rockfish fisheries in the CGOA included nearshore pelagic shelf rockfish (i.e., black and blue rockfish), which are prosecuted primarily in State waters. These species were targeted primarily with non-trawl gear. In 1997, non-trawl effort in the nearshore pelagic shelf rockfish fishery closed that fishery on June 7th, prior to the trawl openings. In 1998, the State took over management of the nearshore pelagic shelf rockfish fisheries. Those fisheries are currently prosecuted exclusively in State waters.

In March 2007, the North Pacific Fishery Management Council took final action to remove dark rockfish from both the GOA FMP (PSR Complex) and BSAI FMP (other rockfish complex). Removing the species from the Federal FMP serves to turn full management authority of the stock over to the State of Alaska in both regions. The effective date of these FMP amendments was January 30, 2009.

Pilot Program

Under the pilot program, the allocation of the primary rockfish species¹³ is divided between the catcher vessel sector and the catcher processor sector, based on historic catches of the participants in these respective sectors. In addition, each sector is allocated the important incidental catch species (i.e., sablefish, Pacific cod, and shortraker and roughey rockfish and shortspine thornyheads)¹⁴ based on the historic harvests of the sector. Exceptions are that Pacific cod is not allocated to catcher processor cooperatives and shortraker and roughey rockfish is not allocated to catcher vessel cooperatives, but are instead managed under MRAs. These species are not allocated in the different cases because the sector has limited catch of the species, which could lead to allocations inadequate to support catch of target rockfish, but MRAs are set low relative to their historic levels to discourage harvests in excess of historic catch amounts. Each sector is also allocated halibut PSC based on historic catch of halibut in the target rockfish fisheries.

Under the pilot program, participants in each sector can either fish as part of a cooperative or in a competitive, limited access fishery. Each cooperative receives allocations of target rockfish, secondary species, and halibut PSC from the sector's allocation based on the target rockfish catch histories of its members. The limited access fishery receives an allocation of target rockfish based on the target rockfish catch histories of sector members that choose not to join a cooperative. Secondary species catch is limited by an MRA, which is reduced from the historic level to maintain total catch at a level comparable to a corresponding cooperative allocation and to reduce the incentive to fish in the limited access fishery.

Cooperatives manage and coordinate fishing of their allocations. Target rockfish and secondary species are subject to a full retention requirement to minimize discards. All allocations to a cooperative are constraining, so a cooperative must manage and monitor members' catch of target rockfish, allocated secondary species, and halibut PSC, to ensure that it is able to fully harvest (but not overharvest) its allocations. To protect processors, each catcher vessel in the program is eligible for a single cooperative,

¹³ For purposes of this analysis, the rockfish fisheries refer exclusively to the Pacific ocean perch, northern rockfish, and pelagic shelf rockfish fisheries in federal waters as currently defined. Black, blue, and dark rockfish, which were formerly part of the pelagic shelf rockfish aggregation and are currently harvested primarily by fixed gear vessels in State waters, are not included in this program and are not the focus of this analysis.

¹⁴ These species are collectively referred to as "secondary species".

which must form an association with the processor to which it delivered the most rockfish to historically. These cooperative/processor associations are intended to ensure that a cooperative lands a substantial portion of its catch with its members' historic processor. The exact terms of the association are subject to negotiation and are confidential to the parties, but since the cooperative agreement requires the approval of the associated processor, it is likely that these agreements contain terms defining cooperative landings requirements.

The fishing season for cooperatives under the pilot program is extended substantially, opening May 1 and closing on November 15. Separate catcher vessel sector and catcher processor sector limited access fisheries open for all target rockfish species on July 1 and close for each target rockfish species when the respective sector's participants are estimated to have fully harvested the allocation of the species.

2.3.2 Stocks, Biology, and Environmental Conditions

Current harvests of all species by vessels participating in the rockfish fishery are below overfishing levels. In addition, impacts on the benthic habitat and essential fish habitat are minimal and temporary. The fishery has no adverse effects on endangered species, marine mammals, seabirds, or forage fish. A complete discussion of the environmental impacts of the fishery is provided in the Environmental Assessment in Section 3 below.

2.3.3 The Harvest Sector

This section begins with a summary of harvests from the rockfish fisheries under the LLP. The second goes on to describe harvest under the pilot program.

LLP Management

Under the LLP, the CGOA rockfish fisheries were prosecuted almost exclusively with trawl gear. Generally, participation in the fisheries required an LLP license with the requisite gear, area, and operation (catcher vessel or catcher processor) endorsements and designations. In addition, the LLP limits the length of a vessel that may use a license based on length of the qualifying vessel. Table 2-2 shows the number of LLP licenses issued for the CGOA by gear, operation, and maximum length overall permitted by the license. The table shows that under LLP management, a substantial number of vessels are eligible to participate in the CGOA rockfish fisheries. RAM Division issued 27 trawl-endorsed catcher processor licenses and 176 trawl-endorsed catcher vessel licenses endorsed for operation in the CGOA. RAM division has also issued in excess of 900 non-trawl (or fixed gear) endorsed licenses for the CGOA.

Table 2-2. LLP licenses endorsed for the Central Gulf of Alaska by gear, maximum length overall, and vessel type

Gear	Maximum length overall	vessel type		total
		catcher processor	catcher vessel	
trawl	under 60 feet	0	67	67
	60 feet or greater and less than 125	10	93	103
	125 feet or greater	17	16	33
	subtotal	27	176	203
non-trawl	under 60 feet	5	702	707
	60 feet or greater and less than 125	24	178*	202
	125 feet or greater	20*	3	23
	subtotal	49	883	932
all gear (unique licenses)	under 60 feet	5	712	717
	60 feet or greater and less than 125	31	154	185
	125 feet or greater	32	16	48
	total	68	945	950

Source: RAM Division, Groundfish LLP License List, 2009

*One of the LLP Licenses is an interim license

Although a substantial number of fixed gear vessels are eligible to participate in the CGOA rockfish fisheries, most vessels eligible for the fisheries do not participate. For example, two or fewer vessels showed landings of each rockfish species prior to 2001, while no non-trawl catcher vessels had landings of Pacific ocean perch prior to 2002. Because the fixed gear sector has very limited participation in the CGOA rockfish fisheries, much of the discussion in this section pertains only to trawl catcher vessels and trawl catcher processors.

Most eligible trawl vessels do not participate in the CGOA rockfish fishery, as the fishery appears to have full capacity. Table 2-3 shows vessel participation and harvests in metric tons by sector during the open seasons from 1996 to 2006, by vessels with at least one targeted landing of rockfish during that time period.¹⁵ The table shows catch for trawl catcher processors and trawl catcher vessels. Table 2-4 the companion table, shows the portion of the annual harvest by the different sectors.

Retained harvest of the three rockfish species have varied somewhat over the years. Pacific ocean perch harvests in general increased from a low of almost 2,800 metric tons in 1996, to a high of over 8,000 metric tons in 2001 (Figure 2-1). In the years since 1999, harvest of Pacific ocean perch was more than double that of the other two species during the years shown. Northern rockfish harvests follow no apparent pattern and have ranged from slightly more than 2,000 metric tons in 1997 to almost 4,700

¹⁵ During the LLP management, the open season for trawl gear began in early July and ended when either the TAC is fully harvested or when the deep water halibut allocation was taken. The non-trawl season opened on January 1st and closed at the same time as the trawl season closure. Landings data for catcher vessels is from Alaska Department of Fish and Game fish tickets. Landings data for catcher processors is from federal Catch Accounting and Blend data.

metric tons in 2003 (Figure 2-2). Harvests of pelagic shelf rockfish rose slightly more than 1,300 metric tons in 1996, to over 3,400 metric tons in 1999 (Figure 2-3).

The tables show relatively consistent participation across sectors. Trawl catcher vessel participation in the rockfish fisheries ranged from 19 vessels to 33 vessels. In 1996 and 1997, there were fewer catcher vessels participating in the rockfish fisheries in comparison to the next several years. However, in 2005 and 2006, the number of catcher vessels participants declined to 1996 and 1997 levels. The portion of the three rockfish species harvested by trawl catcher vessels generally rose through 2003, but then declined in the years leading up to the rockfish pilot program. Overall, the harvests of the three rockfish species by trawl catcher vessels ranged from 51 percent of the pelagic shelf rockfish to 57 percent of the northern rockfish. Although about 30 trawl catcher vessels participated in the different CGOA rockfish fisheries each year between 1996 and 2006, the specific vessels that participated varied year to year. From 1996 to 2006, 55 different trawl catcher vessels participated in the Pacific ocean perch and northern rockfish fisheries, while 53 vessels participated in the pelagic shelf rockfish.

Fewer trawl catcher processors participated in the rockfish fisheries than trawl catcher vessels during the 1996 to 2006 period. A high of 15 trawl catcher processors participated in 1997, while 2000, 2003, and 2006 had the fewest trawl catcher processors at 5. Since non-trawl vessels have shown minimal participation, the trawl catcher processors generally competed only with trawl catcher vessels in the rockfish fisheries. Harvests of all three species fluctuated over the 1996 to 2006 period following no discernable pattern. Harvests of Pacific ocean perch have ranged from approximately 1,385 metric tons in 1996, to approximately 4,276 metric tons in 2001. Trawl catcher processors harvested between 32 percent (in 2003) and 61 percent (in 1998) of the Pacific ocean perch fishery. As with trawl catcher vessels, a variety of trawl catcher processors participated in the CGOA rockfish fisheries during the 1996 to 2006 period. So, although the annual participation by trawl catcher processors in the different fisheries ranged from 4 vessels to 14 vessels, the total number of vessels that have participated in a fishery during the 1996 to 2006 period was 20.

Table 2-3. Estimated retained catch and participation of trawl vessels in the Central Gulf directed rockfish fishery (1996-2006)

Retained catch							
Year	Species	Catcher Processors		Catcher Vessels		Total	
		Number of vessels	Catch (metric tons)	Number of vessels	Catch (metric tons)	Number of vessels	Catch (metric tons)
1996	Pacific ocean perch	6	1,385.4	27	2,214.0	33	3,599.4
	Northern rockfish	8	1,968.3	26	890.8	34	2,859.1
	Pelagic shelf rockfish	8	1,230.9	25	341.1	33	1,572.0
	Total	10	4,584.6	28	3,445.9	38	8,030.5
1997	Pacific ocean perch	14	3,551.0	26	2,321.2	40	5,872.2
	Northern rockfish	14	1,467.5	19	759.0	33	2,226.5
	Pelagic shelf rockfish	14	1,606.2	24	217.7	38	1,823.8
	Total	15	6,624.7	26	3,297.9	41	9,922.5
1998	Pacific ocean perch	8	3,983.1	31	2,592.1	39	6,575.2
	Northern rockfish	7	895.9	31	1,886.6	38	2,782.5
	Pelagic shelf rockfish	8	1,777.5	31	677.8	39	2,455.3
	Total	8	6,656.6	32	5,156.5	40	11,813.0
1999	Pacific ocean perch	11	4,101.8	31	2,523.5	42	6,625.3
	Northern rockfish	10	1,772.5	32	1,986.5	42	3,759.0
	Pelagic shelf rockfish	11	2,070.4	32	1,367.9	43	3,438.3
	Total	11	7,944.7	32	5,877.9	43	13,822.6
2000	Pacific ocean perch	5	3,097.1	31	4,374.8	36	7,471.9
	Northern rockfish	4	480.2	31	1,896.6	35	2,376.8
	Pelagic shelf rockfish	5	553.3	31	2,306.0	36	2,859.3
	Total	5	4,130.5	31	8,577.5	36	12,708.0
2001	Pacific ocean perch	7	4,276.4	33	3,946.8	40	8,223.2
	Northern rockfish	7	819.5	31	1,401.0	38	2,220.5
	Pelagic shelf rockfish	7	901.5	33	1,308.6	40	2,210.2
	Total	7	5,997.4	33	6,656.4	40	12,653.9
2002	Pacific ocean perch	6	2,896.0	33	4,483.3	39	7,379.3
	Northern rockfish	6	611.2	30	2,254.6	36	2,865.8
	Pelagic shelf rockfish	6	1,206.9	33	1,314.1	39	2,521.0
	Total	6	4,714.1	33	8,051.9	39	12,766.0
2003	Pacific ocean perch	4	2,351.0	31	5,114.0	35	7,465.0
	Northern rockfish	4	1,670.6	29	3,096.9	33	4,767.5
	Pelagic shelf rockfish	5	958.2	31	1,517.3	36	2,475.4
	Total	5	4,979.9	32	9,728.1	37	14,708.0
2004	Pacific ocean perch	5	2,949.0	32	4,978.9	37	7,927.9
	Northern rockfish	7	1,213.7	27	2,241.5	34	3,455.2
	Pelagic shelf rockfish	7	759.5	31	1,328.3	38	2,087.8
	Total	7	4,922.2	32	8,548.7	39	13,470.9
2005	Pacific ocean perch	5	3,294.0	26	4,423.0	31	7,717.0
	Northern rockfish	6	1,901.3	25	1,843.1	31	3,744.3
	Pelagic shelf rockfish	6	706.2	26	1,179.7	32	1,885.9
	Total	6	5,901.4	26	7,445.8	32	13,347.2
2006	Pacific ocean perch	5	2,069.7	25	4,148.4	30	6,218.0
	Northern rockfish	5	3,214.7	23	1,739.2	28	4,953.9
	Pelagic shelf rockfish	4	802.9	25	951.8	29	1,754.7
	Total	5	6,087.3	25	6,839.4	30	12,926.7
All years (totals)	Pacific ocean perch	19	33,954.5	55	41,119.8	74	75,074.3
	Northern rockfish	19	16,015.4	55	19,995.8	74	36,011.2
	Pelagic shelf rockfish	19	12,573.5	53	12,510.4	72	25,083.9
	Total	20	62,543.4	55	73,625.8	75	136,169.2

Source: CP data from WPR and CV data from ADF&G Fish Tickets

Table 2-4. Percent of retained catch and participation of trawl vessels in the Central Gulf directed rockfish fishery (1996-2006)

Year	Species	Catcher Processors		Catcher Vessels	
		Number of vessels	Percent of total	Number of vessels	Percent of total
1996	Pacific ocean perch	6	38.5	27	61.5
	Northern rockfish	8	68.8	26	31.2
	Pelagic shelf rockfish	8	78.3	25	21.7
1997	Pacific ocean perch	14	60.5	26	39.5
	Northern rockfish	14	65.9	19	34.1
	Pelagic shelf rockfish	14	88.1	24	11.9
1998	Pacific ocean perch	8	60.6	31	39.4
	Northern rockfish	7	32.2	31	67.8
	Pelagic shelf rockfish	8	72.4	31	27.6
1999	Pacific ocean perch	11	61.9	31	38.1
	Northern rockfish	10	47.2	32	52.8
	Pelagic shelf rockfish	11	19.4	32	80.6
2000	Pacific ocean perch	5	41.4	31	58.6
	Northern rockfish	4	20.2	31	79.8
	Pelagic shelf rockfish	5	19.4	31	80.6
2001	Pacific ocean perch	7	52.0	33	48.0
	Northern rockfish	7	36.9	31	63.1
	Pelagic shelf rockfish	7	40.8	33	59.2
2002	Pacific ocean perch	6	39.2	33	60.8
	Northern rockfish	6	21.3	30	78.7
	Pelagic shelf rockfish	6	47.9	33	52.1
2003	Pacific ocean perch	4	31.5	31	68.5
	Northern rockfish	4	35.0	29	65.0
	Pelagic shelf rockfish	5	38.7	31	61.3
2004	Pacific ocean perch	5	37.2	32	62.8
	Northern rockfish	7	35.1	27	64.9
	Pelagic shelf rockfish	7	36.4	31	63.6
2005	Pacific ocean perch	5	42.7	26	57.3
	Northern rockfish	6	50.8	25	49.2
	Pelagic shelf rockfish	6	37.4	26	62.6
2006	Pacific ocean perch	5	33.3	25	66.7
	Northern rockfish	5	64.9	23	35.1
	Pelagic shelf rockfish	4	45.8	25	54.2
All years (totals)	Pacific ocean perch	19	46.1	55	53.9
	Northern rockfish	19	42.6	55	57.4
	Pelagic shelf rockfish	19	50.1	53	49.9

Source: CP data from WPR and CV data from ADF&G Fish Tickets

Figure 2-1. Retained catch of Pacific ocean perch for trawl catcher processors and catcher vessels in the Central Gulf of Alaska (1996-2006)

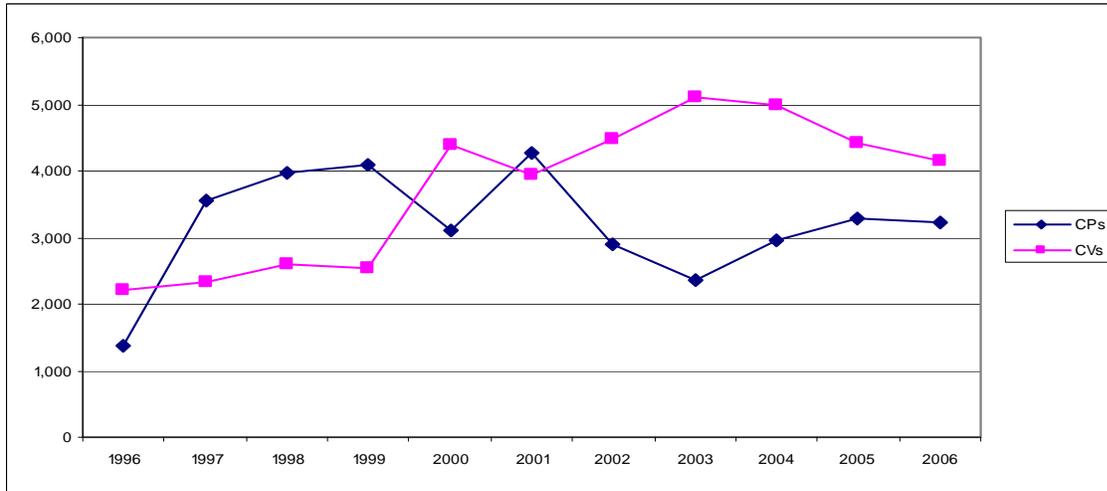


Figure 2-2. Retained catch of northern rockfish for trawl catcher processors and catcher vessels in the Central Gulf of Alaska (1996-2006)

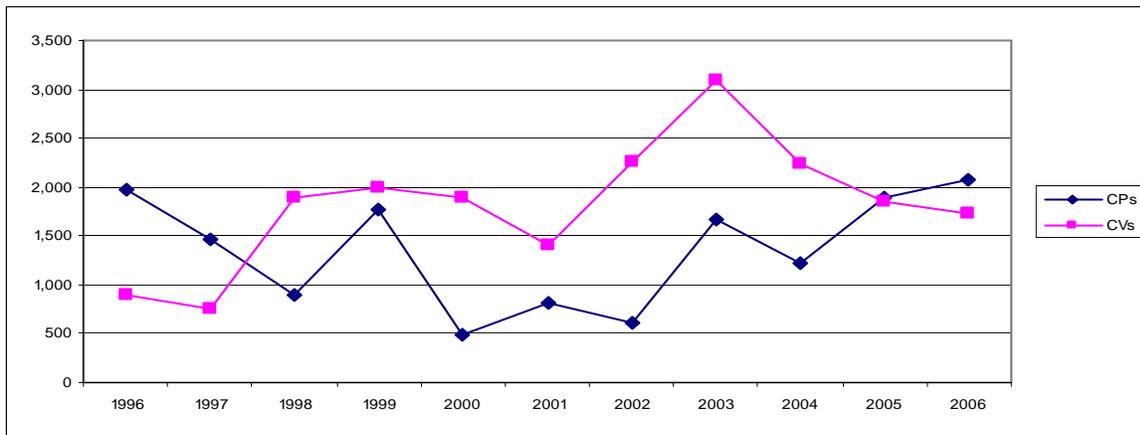


Figure 2-3. Retained catch of pelagic shelf rockfish for trawl catcher processors and catcher vessels in the Central Gulf of Alaska (1996-2006)

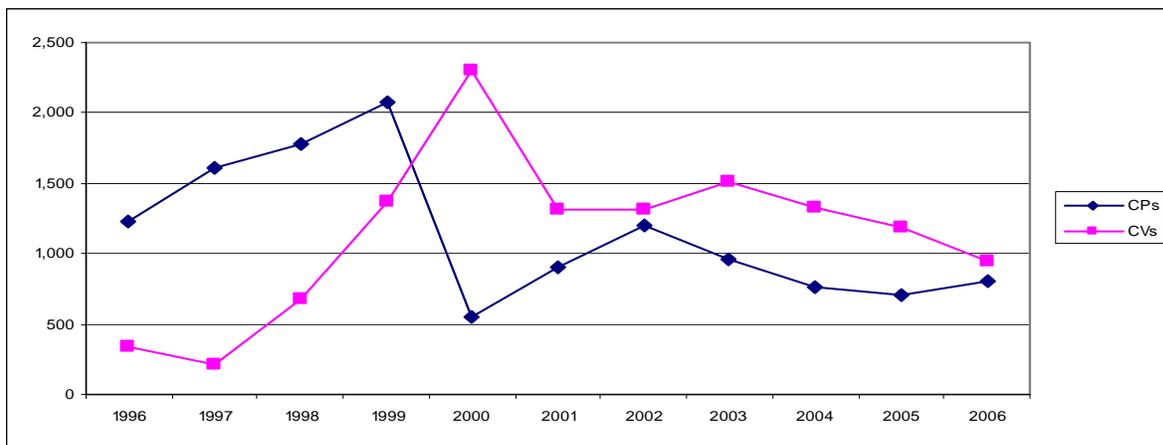


Table 2-5 shows the retained catch of secondary species by sector that targeted CGOA rockfish from 1996 to 2006, while and Table 2-6 shows the percent of retained catch of secondary species by sector.¹⁶ Catcher vessels harvested greater amounts of Pacific cod and sablefish, while catcher processors harvested more thornyhead rockfish, shortraker rockfish, and roughey rockfish. For the catcher vessels, Pacific cod harvests increased to a peak of over 1,400 metric tons in 2003, followed by a decline to less than 300 metric tons in 2006. Sablefish harvest ranged from approximately 200 metric tons to 500 metric tons during the 1996 to 2006 period. Annual harvest of shortraker rockfish, roughey rockfish, and thornyhead rockfish fell well below 100 metric tons during the 1996 to 2006 period. For trawl catcher processors, shortraker/roughey rockfish harvests tended to range between slightly greater than 60 metric tons to slightly less than 500 metric tons during the 1996 to 2006 period. Thornyhead rockfish harvest tended to be around 100 metric tons during the 1996 to 2006 period with the exception of 2003 when harvests peaked at over 300 metric tons. Sablefish harvests ranged between 200 to 300 tons throughout the 1996 to 2006 period. Harvest of Pacific cod by the trawl catcher processor sector was almost always below 150 metric tons during the 1996 to 2006 period.

¹⁶ The vessel counts in this table show the number of different vessels that have participated in the fishery over the specified period. Because other tables in the analysis of alternatives track “participants” with transfers of histories from vessels, the number of vessels and participants over the same time period may differ.

Table 2-5. Estimated retained catch of secondary species and participation of trawl vessels in the Central Gulf directed rockfish fishery (1996-2006)

Year	Species	Catcher Processors		Catcher Vessels		Total	
		Number of vessels	Catch (metric tons)	Number of vessels	Catch (metric tons)	Number of vessels	Catch (metric tons)
1996	Pacific cod**	1	*	1	*	2	*
	Shortraker/rougeye rockfish	10	371.5	20	*	30	*
	Thornyhead rockfish	10	72.6	27	50.8	37	123.4
	Sablefish	10	322.3	28	489.7	38	812.0
1997	Pacific cod	12	57.1	24	110.8	36	167.9
	Shortraker/rougeye rockfish	15	327.4	18	13.0	33	340.4
	Thornyhead rockfish	15	86.2	22	32.2	37	118.4
	Sablefish	15	301.3	27	239.2	42	540.6
1998	Pacific cod	7	122.2	33	431.3	40	553.5
	Shortraker/rougeye rockfish	7	466.9	25	39.6	32	506.5
	Thornyhead rockfish	6	94.0	30	87.0	36	181.0
	Sablefish	7	356.7	33	282.2	40	638.9
1999	Pacific cod	11	275.6	32	703.2	43	978.8
	Shortraker/rougeye rockfish	10	223.8	20	19.2	30	243.0
	Thornyhead rockfish	11	81.1	31	28.5	42	109.6
	Sablefish	11	299.3	31	332.2	42	631.5
2000	Pacific cod	5	57.8	31	1,038.9	36	1,096.7
	Shortraker/rougeye rockfish	5	398.8	22	45.6	27	444.4
	Thornyhead rockfish	5	106.3	28	65.2	33	171.6
	Sablefish	5	218.3	31	468.2	36	686.4
2001	Pacific cod	7	44.9	33	903.0	40	947.9
	Shortraker/rougeye rockfish	7	429.1	23	56.1	30	485.2
	Thornyhead rockfish	7	102.7	27	36.1	34	138.9
	Sablefish	7	204.7	33	352.3	40	557.0
2002	Pacific cod	6	56.4	33	1,211.5	39	1,267.9
	Shortraker/rougeye rockfish	6	356.6	33	22.5	39	379.1
	Thornyhead rockfish	6	98.3	29	33.9	35	132.3
	Sablefish	6	221.5	33	364.5	39	586.0
2003	Pacific cod	4	144.2	32	1,471.8	36	1,616.0
	Shortraker/rougeye rockfish	5	332.8	19	28.9	24	361.7
	Thornyhead rockfish	5	300.5	29	60.3	34	360.8
	Sablefish	5	269.8	32	539.9	37	809.7
2004	Pacific cod	6	102.5	32	1,330.5	38	1,433.0
	Shortraker/rougeye rockfish	7	163.2	24	37.6	31	200.8
	Thornyhead rockfish	7	151.9	28	23.2	35	175.1
	Sablefish	7	259.6	32	525.9	39	785.5
2005	Pacific cod	5	84.5	26	796.1	31	880.6
	Shortraker/rougeye rockfish	6	141.6	19	20.0	25	161.6
	Thornyhead rockfish	6	118.6	24	26.4	30	144.9
	Sablefish	6	236.6	26	440.6	32	677.2
2006	Pacific cod	5	94.4	25	270.5	30	364.9
	Shortraker/rougeye rockfish	5	60.8	21	35.6	26	96.4
	Thornyhead rockfish	5	75.3	24	35.8	29	111.1
	Sablefish	5	164.7	25	374.5	30	539.2
All years (totals)	Pacific cod	18	1,043.0	53	8,270.4	71	9,313.4
	Shortraker/rougeye rockfish	20	3,272.4	53	383.2	73	3,655.6
	Thornyhead rockfish	20	1,287.7	55	479.4	75	1,767.1
	Sablefish	20	2,854.8	56	4,409.2	76	7,264.0

Source: CP data from WPR and CV data from ADF&G Fish Tickets

*Withheld for confidentiality

** Pacific cod fishery placed on PSC status on May 5 due to TAC

Table 2-6. Percent of retained catch of secondary species and participation of trawl vessels in the Central Gulf directed rockfish fishery (1996-2006)

Year	Species	Catcher Processors		Catcher Vessels	
		Number of vessels	Percent of total	Number of vessels	Percent of total
1996	Pacific cod**	1	*	1	*
	Shortraker/rougheye rockfish	10	*	20	*
	Thornyhead rockfish	10	58.9	27	41.1
	Sablefish	10	39.7	28	60.3
1997	Pacific cod	12	34.0	24	66.0
	Shortraker/rougheye rockfish	15	96.2	18	3.8
	Thornyhead rockfish	15	72.8	22	27.2
	Sablefish	15	55.7	27	44.3
1998	Pacific cod	7	22.1	33	77.9
	Shortraker/rougheye rockfish	7	92.2	25	7.8
	Thornyhead rockfish	6	51.9	30	48.1
	Sablefish	7	55.8	33	44.2
1999	Pacific cod	11	28.2	32	71.8
	Shortraker/rougheye rockfish	10	92.1	20	7.9
	Thornyhead rockfish	11	74.0	31	26.0
	Sablefish	11	47.4	31	52.6
2000	Pacific cod	5	5.3	31	94.7
	Shortraker/rougheye rockfish	5	89.7	22	10.3
	Thornyhead rockfish	5	62.0	28	38.0
	Sablefish	5	31.8	31	68.2
2001	Pacific cod	7	4.7	33	95.3
	Shortraker/rougheye rockfish	7	88.4	23	11.6
	Thornyhead rockfish	7	74.0	27	26.0
	Sablefish	7	36.7	33	63.3
2002	Pacific cod	6	4.4	33	95.6
	Shortraker/rougheye rockfish	6	94.1	33	5.9
	Thornyhead rockfish	6	74.4	29	25.6
	Sablefish	6	37.8	33	62.2
2003	Pacific cod	4	8.9	32	91.1
	Shortraker/rougheye rockfish	5	92.0	19	8.0
	Thornyhead rockfish	5	83.3	29	16.7
	Sablefish	5	33.3	32	66.7
2004	Pacific cod	6	7.2	32	92.8
	Shortraker/rougheye rockfish	7	81.3	24	18.7
	Thornyhead rockfish	7	86.8	28	13.2
	Sablefish	7	33.0	32	67.0
2005	Pacific cod	5	9.6	26	90.4
	Shortraker/rougheye rockfish	6	87.6	19	12.4
	Thornyhead rockfish	6	81.8	24	18.2
	Sablefish	6	34.9	26	65.1
2006	Pacific cod	5	25.9	25	74.1
	Shortraker/rougheye rockfish	5	63.1	21	36.9
	Thornyhead rockfish	5	67.8	24	32.2
	Sablefish	5	30.5	25	69.5
All years (totals)	Pacific cod	18	11.2	53	88.8
	Shortraker/rougheye rockfish	20	89.5	53	10.5
	Thornyhead rockfish	20	72.9	55	27.1
	Sablefish	20	39.3	56	60.7

Source: CP data from WPR and CV data from ADF&G Fish Tickets

*Withheld for confidentiality

** Pacific cod fishery placed on PSC status on May 5 due to TAC

Table 2-7 shows the retained catch of the secondary species by vessels targeting CGOA rockfish during the qualifying periods: 1996-2002, 1998-2006, and 2000-2006. The table shows the current retainable percentage used for computing maximum retainable amounts for incidental catch (as defined by 50 CFR Section 679.20(e) and Table 10) and the maximum retainable amount based on the catch of the primary rockfish during the qualifying periods. The retainable percentage is used to determine the maximum amount of an incidental catch species that can be retained by a vessel as a percentage of the CGOA rockfish target species. Since some retainable percentages have changed over time, the retainable percentages presented in the table should be used only for comparison of historic retention with allowable retention amounts prior to implementation of the rockfish pilot program.

As the table shows, CGOA rockfish was the large majority of retained catch for vessels targeting rockfish during each of the qualifying periods. Trawl catcher vessels had significant retention of both Pacific cod and sablefish, while catcher processors also had significant retention of sablefish, while significantly less Pacific cod. Trawl catcher processors also retained larger quantities of shortraker/rougheye rockfish and thornyhead rockfish compared to trawl catcher vessels. Looking specifically at trawl catcher processors, sablefish retained harvests ranged from 5.5 percent of target rockfish for 1998-2006 and 2000-2006 qualifying periods to 6.2 percent for qualifying period 1996-2002. Pacific cod retention by trawl catcher vessels ranged from 8.5 percent during the 2000-2006 qualifying period to 10.7 percent during the 1996-2002 qualifying period. Trawl catcher processors had slightly less harvest of sablefish relative to their harvest of target rockfish during each of the qualifying periods in comparison to the current retainable percentage. Harvests of all other species (including Pacific cod) during each of the qualifying periods are substantially less than the retainable percentage. These figures suggest that in most instances, the retainable percentage limited only harvests of sablefish by vessels targeting rockfish during each of the qualifying periods. Trawl catcher processors also harvested large amounts of shortraker/rougheye incidentally to their target rockfish harvests. Harvest of shortraker/rougheye by trawl catcher processors ranged from a low of 2.3 percent during the 2000-2006 period to 6.3 percent during the 1996 to 2002 period.

Table 2-7. Retained catch and current retainable percentages for vessels targeting Central Gulf of Alaska rockfish for three qualifying periods

Qualifying Years	Sector	Target rockfish catch (metric tons)	Pacific cod			Shortraker/rougheye				
			Catch (metric tons)	Percent of target rockfish	Retainable percentage	Maximum retainable amount	Catch (metric tons)	Percent of target rockfish	Retainable percentage	Maximum retainable amount
1996-2002	CV	41,063.9	4,401.4	10.7	20.0	8,212.8	261.3	0.6	15.0	6,159.6
	CP	40,653.0	617.5	1.5	20.0	8,130.6	2,573.9	6.3	15.0	6,098.0
	Total	81,717.0	5,018.8	6.1	20.0	16,343.4	2,835.2	3.5	15.0	12,257.5
1998-2006	CV	66,882.1	8,157.0	10.0	20.0	13,376.4	305.1	0.4	15.0	10,032.3
	CP	51,334.7	982.3	1.2	20.0	10,266.9	2,573.6	3.1	15.0	7,700.2
	Total	118,216.7	9,139.3	11.2	20.0	23,643.3	2,878.7	3.5	15.0	17,732.5
2000-2006	CV	55,847.7	7,022.4	8.6	20.0	11,169.5	246.3	0.3	15.0	8,377.2
	CP	36,733.4	584.6	0.7	20.0	7,346.7	1,882.9	2.3	15.0	5,510.0
	Total	92,581.1	7,607.0	9.3	20.0	18,516.2	2,129.2	2.6	15.0	13,887.2

Qualifying Years	Sector	Thornyhead				Sablefish			
		Catch (metric tons)	Percent of target rockfish	Retainable percentage	Maximum retainable amount	Catch (metric tons)	Percent of target rockfish	Retainable percentage	Maximum retainable amount
1996-2002	CV	333.7	0.8	15.0	6,159.6	2,528.3	6.2	7.0	2,874.5
	CP	641.4	1.6	15.0	6,098.0	1,924.1	4.7	7.0	2,845.7
	Total	975.1	1.2	15.0	12,257.5	4,452.4	5.4	7.0	5,720.2
1998-2006	CV	396.4	0.6	15.0	10,032.3	3,680.3	5.5	7.0	4,681.7
	CP	1,128.8	2.2	15.0	7,700.2	2,231.2	4.3	7.0	3,593.4
	Total	1,525.2	1.3	15.0	17,732.5	5,911.5	5.0	7.0	8,275.2
2000-2006	CV	280.9	0.5	15.0	8,377.2	3,065.9	5.5	7.0	3,909.3
	CP	953.7	2.6	15.0	5,510.0	1,575.1	4.3	7.0	2,571.3
	Total	1,234.6	1.3	15.0	13,887.2	4,641.0	5.0	7.0	6,480.7

Source: CP data from WPR and CV data from ADF&G Fish Tickets

In addition to groundfish species, participants in the rockfish fishery also caught halibut during the 1996 to 2006 period. Preceding implementation of the rockfish pilot program, the distribution of halibut mortality between catcher vessels and catcher processors in the Central Gulf rockfish fishery generally paralleled catch of the rockfish, but catcher vessels took substantially more halibut per ton of directed rockfish catch than did catcher processors. Table 2-8 shows the estimated annual catch and mortality of halibut in the Central Gulf of Alaska rockfish fisheries by trawl sector. Halibut mortality of both sectors exceeded 20 pounds per metric ton of primary rockfish catch in all years leading up to program implementation, with the highest mortality exceeding 68 pounds per metric tons of primary rockfish catch in the catcher vessel sector in 2001. The highest mortality for the trawl catcher processor sector was 55 pounds per metric ton of primary rockfish catch in 1997.

Table 2-8. Halibut mortality of trawl vessels in the Central Gulf directed rockfish fishery (1996-2006)

Year	Catcher processors			Catcher vessels		
	Halibut PSC mortality (pounds)	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish retained catch	Halibut PSC mortality (pounds)	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish retained catch
1996	117,064.3	4,456.4	26.3	204,983.7	3,445.9	59.5
1997	328,198.8	5,899.6	55.6	109,215.9	3,297.9	33.1
1998	322,643.2	6,680.7	48.3	191,447.5	5,156.5	37.1
1999	372,511.3	8,532.4	43.7	274,097.9	5,877.8	46.6
2000	105,732.6	4,591.2	23.0	300,861.8	8,577.5	35.1
2001	243,916.9	6,301.8	38.7	454,742.8	6,656.4	68.3
2002	244,909.0	4,782.1	51.2	209,657.5	8,051.9	26.0
2003	144,423.1	4,148.7	34.8	340,930.7	9,728.1	35.0
2004	107,653.0	4,977.7	21.6	474,015.4	8,548.7	55.4
2005	150,053.8	5,506.0	27.3	306,010.6	7,445.8	41.1
2006	127,343.3	5,558.0	22.9	165,482.1	6,839.4	24.2

Source: CP data from Catch Accounting/Blend and CV data from ADF&G Fish Tickets

Since the rockfish fisheries are prosecuted only in July, vessels that participated in the rockfish fisheries also participated in several other fisheries in the Gulf of Alaska and the Bering Sea and Aleutian Islands.¹⁷

Table 2-9, below shows the ex vessel gross revenues of catcher vessels eligible for the CGOA rockfish program from 1996 to 2006. The table shows that these vessels have substantial participation in several other fisheries, primarily pollock and Pacific cod. Comparing this table to Table 2-28 and Table 2-29 one can see that revenues from the CGOA rockfish fisheries (including revenues from secondary species harvested in the fishery) are a minor part of the revenues of catcher vessels eligible for the CGOA rockfish fishery (i.e., less than 10 percent of total ex vessel gross revenues).

¹⁷ In addition, many of the vessels that have participated in the rockfish fisheries have also participated in other fisheries both in and out of the CGOA in the month of July. This section provides background on the overall activity of vessels that targeted CGOA groundfish during the 1996 to 2006 period. Additional information on the participation of these vessels in other fisheries in the month of July during the 2007 and 2008 period is contained in the next section.

Table 2-9. Ex vessel gross revenues of catcher vessels eligible for the CGOA rockfish program using 1996 to 2002 qualifying years

Year	Pollock		Pacific Cod		Rockfish		Flatfish and other groundfish	
	Number of vessels	Ex vessel gross revenues (\$1,000)	Number of vessels	Ex vessel gross revenues (\$1,000)	Number of vessels	Ex vessel gross revenues (\$1,000)	Number of vessels	Ex vessel gross revenues (\$1,000)
1996	47	14,069	51	7,527	45	655	46	6,045
1997	50	17,140	50	9,900	46	678	50	5,487
1998	52	14,657	52	6,842	46	897	51	3,063
1999	50	20,147	47	13,149	48	1,117	49	2,677
2000	48	28,660	48	10,208	42	1,356	48	4,678
2001	49	23,618	49	9,886	45	758	48	3,303
2002	45	24,078	46	7,690	42	936	45	3,423
2003	45	20,949	45	15,225	40	1,310	45	3,815
2004	44	23,316	44	10,553	43	1,111	44	3,398
2005	41	32,756	42	8,595	40	1,669	41	4,695
2006	40	29,620	41	10,811	38	2,499	38	7,240

Year	Halibut		Crab and other species		All species	
	Number of vessels	Ex vessel gross revenues (\$1,000)	Number of vessels	Ex vessel gross revenues (\$1,000)	Number of vessels	Ex vessel gross revenues (\$1,000)
1996	15	1,873	22	787	226	30,958
1997	16	2,348	32	1,164	244	36,717
1998	38	1,465	42	1,442	281	28,366
1999	25	2,447	40	1,714	259	41,252
2000	30	2,599	37	1,062	253	48,562
2001	30	1,799	43	695	264	40,060
2002	27	2,648	42	920	247	39,696
2003	25	3,279	40	1,304	240	45,882
2004	24	3,193	41	1,228	240	42,799
2005	24	2,623	39	581	227	50,920
2006	19	3,558	35	368	211	54,096

Source: ADF&G Fish Tickets

Table 2-10 below shows total product weights and revenues for the catcher processor sector during the 1996 to 2006 period. Note that the rockfish production included in Table 2-10 also includes rockfish from the CGOA. Comparing this table with Table 2-32 and Table 2-33 shows that revenues from production from the CGOA rockfish fisheries (including production from secondary species) are a relatively small portion (i.e., slightly less than 5 percent) of the annual revenues of eligible catcher processors. In addition, some catcher processors eligible for the program also participated in the Bering Sea and Aleutian Island crab fisheries. Products and revenues from those fisheries are not included in Table 2-10.

Table 2-10. Total product weights and first wholesale revenues of CGOA rockfish eligible catcher processors in groundfish fisheries using 1996-2002 qualifying years

Year	Pollock			Pacific Cod			Rockfish		
	Number of vessels	Pounds of product (\$1,000s)	First wholesale revenues (\$1,000s)	Number of vessels	Pounds of product (\$1,000s)	First wholesale revenues (\$1,000s)	Number of vessels	Pounds of product (\$1,000s)	First wholesale revenues (\$1,000s)
1996	10	6,393	5,556	16	10,449	7,831	16	15,880	12,295
1997	12	3,587	3,837	16	12,385	7,245	16	15,035	11,418
1998	13	14,390	9,708	13	18,000	16,033	13	10,251	4,961
1999	12	6,320	1,835	12	13,161	15,465	11	15,441	7,408
2000	12	7,877	5,228	12	16,068	19,036	11	9,871	6,690
2001	12	8,574	5,056	12	17,184	18,789	12	9,569	4,671
2002	12	8,173	4,947	12	19,228	18,530	11	11,181	7,218
2003	12	8,013	5,258	12	20,093	21,617	12	11,666	8,579
2004	12	8,842	5,354	12	23,313	24,888	12	10,660	8,633
2005	12	7,959	5,662	12	17,189	21,995	12	10,743	12,349
2006	12	5,574	3,989	12	15,478	25,870	11	11,064	14,289

Source: WPR

Pilot Program

Under the pilot program, catcher vessel participation in the rockfish fisheries has remained similar to participation levels under pre-pilot program limited access management (see Table 2-11).¹⁸ No catcher vessels participated in the catcher vessel limited access in the first two years of the program, although the three vessels in 2007 and two vessel in 2008 that did not join a cooperative were eligible to fish in a catcher vessel limited access fishery. These vessels likely chose not to participate, because of the small allocation that would likely not support a competitive race for fish. Harvests of catcher vessel cooperatives exceeded the catcher vessel cooperative allocations for all three primary rockfish species, but without overages because of transfers of quota from the catcher processor cooperatives. Through similar transfers from catcher processor cooperatives, the catcher vessel cooperatives harvested substantially more than their allocations of sablefish in 2007 and 2008. The cooperatives harvested less than half of their collective allocations of thornyheads and Pacific cod in 2007, but in 2008 the cooperatives harvested nearly entire Pacific cod allocation.

¹⁸ Vessels are not permitted to discard allocated species under the program (with the exception of halibut PSC), so all catch figures are total catch. In three instances vessels are reported to have made small amounts of discards. In these cases, the discards were counted against allocated quota and are included in total catch amounts in this document. Persons making these discards were issued warnings by NOAA Enforcement.

Table 2-11. Total catch and allocation of allocated species by catcher vessel cooperatives (2007 and 2008)

Year	Species	Number of vessels	Catch (in metric tons)	Allocations (in metric tons)		Percent of allocation harvested	
				excluding transfers	including transfers	excluding transfers	including transfers
2007	Pacific Ocean Perch	25	4,144.3	3,394.8	4,206.8	122.1	98.5
	Northern Rockfish	25	2,001.1	1,940.3	2,352.3	103.1	85.1
	Pelagic Shelf Rockfish	24	1,577.0	1,380.3	1,877.3	114.2	84.0
	Pacific Cod	25	271.9	587.1	NA	46.3	47.2
	Sablefish	24	453.8	386.3	458.3	117.5	99.0
	Thornyhead Rockfish	24	46.2	106.1	160.1	43.5	28.9
2008	Pacific Ocean Perch	26	4,503.6	3,735.0	4,589.5	120.6	98.1
	Northern Rockfish	25	1,347.8	1,335.0	1,522.1	101.0	88.6
	Pelagic Shelf Rockfish	24	1,595.3	1,512.0	2,080.9	105.5	76.7
	Pacific Cod	25	568.0	590.0	NA	96.3	NA
	Sablefish	26	396.1	345.0	398.9	114.8	99.3
	Thornyhead Rockfish	26	59.8	93.0	135.9	64.3	44.0

Source: Catch Accounting Data and Cooperative Reports.

Note: No overages occurred because of transfer of cooperative quota from catcher processor cooperatives

Discards of allocated species are not permitted.

In addition to allocated species, catcher vessels in the rockfish pilot program are governed by a program specific 2 percent MRA for aggregate catch of shortraker rockfish and roughey rockfish (see Table 2-12). Catcher vessel cooperatives caught substantially less shortraker and roughey rockfish than is permitted by the MRA.

Table 2-12. Total catch of rockfish program MRA species by catcher vessel cooperatives (2007 and 2008)

Year	Species	Number of vessels	Catch including discards (in metric tons)	Maximum retainable amount (as a percentage of primary species catch)	Maximum retainable amount in metric tons (given primary catch)
2007	Roughey Rockfish	24	9.9	2	154.4
	Shortraker Rockfish	19	9.4	(in aggregate)*	
2008	Roughey Rockfish	21	15.3	2	148.9
	Shortraker Rockfish	22	31.9	(in aggregate)*	

Source: Catch Accounting Data and Cooperative Reports.

* Maximum retainable percentage limits aggregate retention of shortraker rockfish and rough rockfish

Catcher processor participation declined in the first year of the program but then increased in 2008 (see Table 2-13).¹⁹ Only four catcher processors participated in the rockfish fisheries in the first year of the program, with three of those vessels participating in the limited access. In the second year of the program, six vessels participated in the rockfish fisheries, with four of those vessels participating in the limited access. Although two cooperatives formed in the catcher processor sector, one cooperative entered a single vessel into the fishery in 2007 and two vessels in 2008, while the other transferred its entire quota to other cooperatives in both sectors for both 2007 and 2008. The single cooperative harvested almost all of its Pacific ocean perch allocation in both 2007 and 2008, but did not harvest a substantial percentage of its northern rockfish and pelagic shelf rockfish allocations. The cooperative, however, received relatively small allocations of these two species in comparison to its Pacific ocean perch allocation. The cooperative also harvested most of its sablefish allocation in both 2007 and 2008 and more than its allocation of shortraker rockfish during both years, through transfers from the other catcher processor cooperative. It

¹⁹ Note that data no data shown in this table are confidential, as certain cooperative fishing is reported in the annual report of the cooperative.

caught very little of its roughey rockfish allocation and slightly less than a third of its allocation of thornyheads.

In 2007, three of the four vessels registered for the catcher processor limited access fishery participated in that fishery, while in 2008, four of the seven vessels registered for the fishery. The catcher processor limited access fishery harvested most of its Pacific ocean perch and northern rockfish allocations in both 2007 and 2008, but left a substantial amount of pelagic shelf rockfish unharvested in 2007 while harvesting most of its 2008 allocation.

Table 2-13. Total catch and allocation of allocated species by catcher processor cooperatives and limited access (2007 and 2008)

Year	Fishery	Species	Number of vessels	Catch (in metric tons)	Allocation excluding transfers (in metric tons)	Percentage of allocation harvested
2007	Cooperative*	Pacific Ocean Perch	1	1,666.9	1,700	98
		Northern Rockfish	1	153.1	284	54
		Pelagic Shelf Rockfish	1	113.1	141	80
		Sablefish	1	78.2	87	90
		Shortraker Rockfish	1	43.5	34	126**
		Roughey Rockfish	1	11.3	117	10
	Limited Access	Thornyhead Rockfish	1	23.1	74	31
		Pacific Ocean Perch	3	943.4	1,008	94
		Northern Rockfish	3	584.5	675	87
2008	Cooperative*	Pelagic Shelf Rockfish	3	535.4	1,065	50
		Pacific Ocean Perch	2	1,621.5	1,671	97
		Northern Rockfish	2	145.7	168	87
		Pelagic Shelf Rockfish	2	69.2	147	47
		Sablefish	2	66.7	70	96
		Shortraker Rockfish	2	28.7	28	103**
	Limited Access	Roughey Rockfish	2	6.9	145	5
		Thornyhead Rockfish	2	12.5	58	22
		Pacific Ocean Perch	4	1,305.7	1,386	94
Limited Access	Northern Rockfish	3	469.7	514	91	
	Pelagic Shelf Rockfish	3	1,115.7	1,194	93	

Source: Catch Accounting Data and Cooperative Reports.

Note: Excludes allocation of catcher processor cooperative that did not fish.

*Data are not confidential because of disclosure in cooperative reports.

** No overage occurred because of transfer of cooperative quota.

Catcher processor cooperative participants are subject to an MRA for Pacific cod (see Table 2-14). This MRA is set lower than the 20 percent MRA applicable to most fisheries (including the rockfish fisheries prior to the pilot program) to maintain catch of the sector at its historic level. Participants in the catcher processor limited access fishery are subject to MRAs for shortraker and roughey rockfish (in the aggregate), Pacific cod, sablefish, and thornyheads. These MRA percentages are reduced to maintain harvests below their historic amounts and to create a disincentive for participation in the limited access fishery. Catch of Pacific cod by the catcher processor sector (including both cooperative and limited access participants) was slightly less than the amount permitted by the MRA. Catch of shortraker and roughey rockfish was slightly more than half of the amount permitted under the MRA for 2007, while nearly the entire maximum retainable amount permitted was caught in 2008. The same was true sablefish catch in 2008 with nearly all the permitted amount being harvested, while thornyhead catch was less than half of the amount permitted.

Table 2-14. Catch of species subject to MRAs by the catcher processor sector (2007 and 2008)

Year	Fishery	Species	Number of vessels	Catch including discards (in metric tons)	Maximum retainable amount (as a percentage of primary species catch)	Maximum retainable amount in metric tons (given primary catch)
2007	Limited Access and Cooperative	Pacific Cod	3	72.7	4	77.3
		Shortraker/Rougheye	3	32.1	2	41.3
	Limited Access only	Sablefish	2	*	3	61.9
		Thornyhead Rockfish	2	*	4	82.5
2008	Limited Access and Cooperative	Pacific Cod	5	71.6	4	73.5
		Shortraker/Rougheye	3	54.9	2	57.8
	Limited Access only	Sablefish	6	89.5	3	86.7
		Thornyhead Rockfish	6	42.6	4	115.6

Source: Catch Accounting Data and Cooperative Reports.

* Withheld for confidentiality.

Since cooperative participants in the program are limited exclusively by their allocations, participants were able to pattern their fishing to receive the greatest benefit from their allocations. As a result, in a few instances, catcher vessels took trips targeting Pacific cod or sablefish (see Table 2-15). By limiting their catch of rockfish in these trips, harvesters are able to both reduce costs of traveling to the different grounds and increase quality of catch by limiting the extent of mixing of Pacific cod and sablefish with rockfish, the spines of which can damage more fragile fish. Over 75 percent of the Pacific cod and over 50 percent of the sablefish was caught during non-rockfish target trips. During these non-rockfish target trips, few primary rockfish were harvested.²⁰ Although the catch of sablefish and Pacific cod in this manner may be viewed by some as beyond the scope of the rockfish fishery, harvests of these species have remained at, or below, their historic levels in the rockfish fishery. In addition, these practices bring additional value to catch.

Table 2-15. Catcher vessel trips and catch by trip target (2007 and 2008)

Target	Vessels with at least one trip in the target		Total trips in the target		Species caught in the target	Catch (in metric tons)		Percent of total catch of the species	
	2007	2008	2007	2008		2007	2008	2007	2008
Pacific cod	10	12	11	13	Pacific Ocean Perch	5.2	13.2	0.1	0.3
					Northern Rockfish	0.9	2.2	0.0	0.2
					Pelagic Shelf Rockfish	0.4	13.5	0.0	0.8
					Pacific Cod	207.1	429.9	74.7	75.7
					Sablefish	30.5	53.6	6.6	13.5
Rockfish	25	26	130	112	Pacific Ocean Perch	4,145.3	4,477.5	99.5	99.4
					Northern Rockfish	2,000.1	1,343.7	100.0	99.7
					Pelagic Shelf Rockfish	1,577.0	1,578.1	99.9	98.9
					Pacific Cod	54.5	137.3	19.6	24.2
					Sablefish	205.7	128.2	44.2	32.4
Sablefish	14	13	16	17	Pacific Ocean Perch	16.1	12.9	0.4	0.3
					Northern Rockfish	0.0	1.8	0.0	0.1
					Pelagic Shelf Rockfish	0.9	3.6	0.1	0.2
					Pacific Cod	15.7	0.7	5.7	0.1
					Sablefish	229.1	214.3	49.2	54.1

Source: NMFS Catch Accounting Data.

Under the pilot program, the catch of cooperatives is not only limited by primary and secondary species allocations, but also by allocations of halibut PSC (see Table 2-16). Since halibut allocations under the program are based on historic catch of halibut in the rockfish fishery, those allocations provide a reasonable benchmark for assessing changes in halibut mortality. In the years leading up to the pilot

²⁰ Some primary rockfish are harvested during these trips that are non-rockfish targets, as MRAs for shortraker and rougheye rockfish use only catch of primary rockfish as the basis for determining the MRA poundage.

program, vessels in the rockfish fishery averaged in excess of 20 pounds of halibut mortality for each ton of primary rockfish species. In the first two years of the program, vessels fishing in cooperatives and the limited access fishery under the program cut halibut mortality rates substantially. Vessels in the catcher processor limited access fishery reduced their catch to approximately 13 pounds of halibut per ton of primary rockfish catch in 2007, while in 2008 the halibut mortality rate was 17 pounds per ton of primary rockfish catch (see Table 2-8 for historical catch rates).²¹ For catcher processor cooperative, the single vessel fishing in 2007 reduced its halibut mortality to less than 9 pounds of halibut per metric ton of primary rockfish catch, while the two participating vessels in 2008 had a halibut mortality of 10.5 percent. The catcher vessel sector reduced its halibut mortality to slightly more than 4 pounds of halibut per ton of primary rockfish species catch in 2007, while the halibut mortality in 2008 for this sector was roughly 8 pounds per metric ton of primary rockfish.²²

This drastic reduction in halibut mortality (particularly in the catcher vessel sector) likely arises from several factors. First, vessels have exclusive allocations, allowing them to move from areas of high halibut catch without risking loss of catch in the fishery. Second, exclusive allocations also increase the incentive for participants to communicate with each other concerning catch rates, improving information concerning areas of high halibut incidental catch in the fleet and preventing repeated high halibut mortality among vessels exploring fishing grounds. Third, several vessels have begun employing new pelagic gear that limits bottom contact and halibut incidental catch. These gear changes are apparent when comparing the percentage of catch using pelagic trawl gear and non-pelagic gear in the first two years of the program with catch by those gear types in the preceding years (see Table 2-17). In the second year of the program over 40 percent of primary rockfish catch was with pelagic trawl, in comparison to less than 25 percent in 2006 and 6 percent or less in the preceding years. In the second year of the program, nearly 85 percent of the catcher vessel fleet used pelagic gear for some of its catch, in comparison to slightly more than half of that fleet in 2006 and less than 20 percent in the preceding years. While this increase is substantial, only one vessel in the catcher vessel fleet used pelagic gear exclusively. In the catcher processor sector, two of the four active vessels used pelagic gear in the first year of the program, in comparison to no pelagic trawl gear prior to implementation of the program. Catch data by gear type cannot be revealed for the catcher processor sector because of confidentiality protections.

Participants in the program report that a primary motivation for these changes in gear types is constraining halibut allocations, which could jeopardize cooperative catches in the event that halibut bycatch exceeds allocations. The incentive for halibut mortality reductions is increased by the rollover of saved halibut mortality to other fisheries late in the year, allowing the trawl sector as a whole (including vessels that did not qualify for the pilot program) to benefit from these halibut mortality reductions. In the three years of the program, the reallocation of halibut PSC from the rockfish pilot program to the GOA trawl fisheries allowed the trawl GOA groundfish fisheries to remain open until December 31. In the five years previous to implementation of the rockfish pilot program, the trawl GOA groundfish fisheries were closed to directed fishing prior to the end of the season so as not to exceed the halibut PSC limit (see Figure 2-4). Participants report that they were able to make additional harvests of flatfish as a result of these rollovers.

²¹ In assessing the change in catch rate in the catcher processor limited fishery access, it should be borne in mind that (although not fishing as a cooperative) the vessels fishing in that fishery did not compete for the allocations of pelagic shelf rockfish, reducing the pressure to race for fish.

²² These calculations include all halibut mortality of vessels fishing allocations under the program, including mortality in trips targeting Pacific cod and sablefish.

Table 2-16. Halibut mortality of vessels in the Central Gulf rockfish pilot program (2007 and 2008)

Year	Fishery	Vessels	Halibut PSC mortality (pounds)**	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish catch	Allocation including transfer of halibut PSC mortality (pounds)	Unused allocation (pounds)
2007	Catcher processor limited access	3	26,312.8	2,063.3	12.8	NA	NA
	Catcher processor cooperative*	1	16,623.3	1,933.1	8.6	77,760.7	61,137.3
	Catcher vessel cooperative	25	32,710.1	7,746.0	4.2	309,816.8	277,106.7
	Total	29	75,646.3	11,742.4	6.4	387,577***	338,244+
2008	Catcher processor limited access	4	47,624.4	2,892.1	16.5	NA	NA
	Catcher processor cooperative*	2	19,332.0	1,836.4	10.5	44,092.0	24,760.0
	Catcher vessel cooperative	23	60,622.0	7,446.7	8.1	331,906.9	271,284.9
	Total	29	127,578.4	12,175.2	10.5	375,998.9***	296,044.9+

Source: NMFS Catch Accounting Data

*Data are not confidential because of disclosure in cooperative reports.

** Includes all halibut mortality under the primary program (i.e., excludes entry level fishery).

*** Includes allocation to catcher processor cooperative that did not fish. No allocation is made to the limited access fishery.

+ Includes all allocations and only catches by vessels subject to those allocations.

Table 2-17. Catch by gear by sector in the Central Gulf of Alaska rockfish fishery (2003-2008)

Year	Catcher processors		Catcher vessels					
	Non-pelagic trawl	Pelagic trawl	Non-pelagic trawl			Pelagic trawl		
	Number of vessels	Number of vessels	Number of vessels	Catch of primary rockfish species (in metric tons)	Percentage of catch of primary rockfish species	Number of vessels	Catch of primary rockfish species (in metric tons)	Percentage of catch of primary rockfish species
2003	5	0	31	9,396.6	99.0	1	95.6	1.0
2004	6	0	28	7,875.0	100.0	0	0.0	0.0
2005	6	0	24	6,702.4	94.0	4	429.2	6.0
2006	4	0	23	5,153.2	76.4	13	1,590.0	23.6
2007	4	2	24	4,813.0	62.1	19	2,933.0	37.9
2008	6	1	26	4,230.2	56.8	22	3,216.5	43.2

Source: NMFS Catch Accounting.

Figure 2.4 Season duration of the trawl Central Gulf of Alaska groundfish fisheries from October 1 to December 31, 2000 to 2009*

Year	October				November				December				
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
2000	[Closed]												
2001	[Closed]												
2002	[Closed]												
2003	[Closed]												
2004	[Closed]												
2005	[Closed]												
2006	[Closed]												
2007	[Open]												
2008	[Open]												
2009	[Open]												

Source: NOAA Fisheries status reports and groundfish closure summaries

* Gaps are approximate closure periods

Catch of groundfish late in the year has fluctuated both before and after implementation of the rockfish pilot program. Table 2-18 below shows season length, vessel count, total catch, and halibut PSC by target for trawl vessels during the October 1 to December 31 period from 2000 to 2009. As seen in the table, in the two years preceding the program, no harvest of groundfish occurred, as all fisheries were closed because no halibut PSC was available. In earlier years, during halibut PSC constrained, relatively short seasons halibut PSC was primarily used in the shallow-water flatfish, Pacific cod, and arrowtooth flounder fisheries. Smaller amounts of halibut PSC were caught in the rex sole and flathead sole fisheries. In years since the rockfish pilot program, seasons have extended substantially, with halibut PSC primarily caught in the shallow-water flatfish fishery, while a smaller amount of halibut PSC was caught in the Pacific cod and arrowtooth flounder fisheries. Based on estimated halibut usage in the different targets and aggregate species ex vessel price estimates, the late season rollover can be estimated to have generated between approximately \$1.4 million and \$2.8 million in ex vessel gross revenues. The rollover

(128 metric tons in 2007, 135 metric tons in 2008, and 139 metric tons in 2009) has clearly supported additional fishing activity, but the benefit derived from the rollover depends on target preferences and opportunities, which have varied year-to-year.

Table 2-18. Vessel count, total catch, and halibut PSC by target for trawl vessels in central and western GOA during the 5th season (Oct 1 – Dec 31) from 2000 - 2009

Species Complex	Target		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shallow-water	Shallow-water flatfish	Vessel Count	16	9	26	2	0	0	7	7	7	24
		Target catch	1,711	183	3,518	*	0	0	1,776	3,204	5,773	5,970
		Halibut PSC	82	9	213	*	0	0	210	208	238	138
	Pacific cod	Vessel Count	1	53	9	3	0	0	3	6	9	6
		Target catch	*	10,166	170	*	0	0	*	710	2,170	392
		Halibut PSC	*	437	6	*	0	0	*	15	56	7
	Flathead sole	Vessel Count	2	4	2	2	0	0	1	0	2	5
		Target catch	*	194	*	*	0	0	0	0	*	1,320
		Halibut PSC	*	4	*	*	0	0	0	0	*	13
Deep-water	Rex sole	Vessel Count	4	1	2	1	0	0	1	1	0	3
		Target catch	1,353	*	*	*	0	0	*	*	0	*
		Halibut PSC	38	*	*	*	0	0	*	*	0	*
	Arrowtooth	Vessel Count	2	1	8	13	0	0	7	6	8	8
		Target catch	*	*	2,702	6,700	0	0	2,095	1,808	2,025	1,098
		Halibut PSC	*	*	70	186	0	0	122	38	45	12
	Deep-water flatfish	Vessel Count	2	0	0	0	0	0	0	0	0	0
		Target catch	*	0	0	0	0	0	0	0	0	0
		Halibut PSC	*	0	0	0	0	0	0	0	0	0
	Rockfish	Vessel Count	0	0	0	1	0	0	3	7	5	4
		Target catch	0	0	0	*	0	0	*	973	1,392	458
		Halibut PSC	0	0	0	*	0	0	*	9	23	1
Days open during 5th season**			92	20	16	14	0	0	7	82	82	92

Source: Target catch was from Blend data/Catch Accounting, while halibut PSC was from NMFS PSC data

* Withheld for confidentiality

** All closures during the 5th season were to prevent exceeding halibut PSC limit

Catch of shortraker rockfish and rougheye rockfish under the pilot program

In its motion defining the pilot program, the Council specifically requested staff to examine catch of shortraker rockfish and rougheye rockfish under the program’s allocations. During development of the program, the Council was in the process of separating management of the two species in the Gulf of Alaska to allow for more precise TAC management. In 2005, NMFS managed the two species under separate TACs for the first time. Prior to that year, the species were managed under a single TAC. Although TACs of the two species are separated, in most fisheries they remain subject to an “aggregate rockfish” MRA that limits retained catch to 5 percent or 15 percent of catch of species for which directed fishing is permitted. Under this rule, ‘aggregate rockfish’ catch includes catch of all *Sebastes* and *Sebastes* excluding black rockfish and blue rockfish. In part, to avoid possible overharvest of shortraker and rougheye rockfish, the Council elected to use more precise and limiting management in the rockfish pilot program. Catcher processor cooperatives are limited by a constraining allocation with no discards permitted.²³ Catcher processors in the limited access fishery and all catcher vessels are limited by a 2 percent MRA applicable to shortraker and rougheye in the aggregate. This more species specific, reduced MRA is intended to limit any potential incentive to ‘top off’ on these two species.

Allowable catches of shortraker and rougheye by a catcher processor in the program differs with the catcher processor’s choice of whether to enter a cooperative or fish in the limited access fishery (see

²³ The allocations of shortraker and rougheye to the catcher processor sector are based on specific percentages of the TAC selected by the Council determined after considering historic catches by catcher processors in the rockfish fishery (i.e., 30.03 percent of the Central Gulf shortraker TAC and 58.87 percent of the Central Gulf rougheye TAC). Each catcher processor cooperative receives a percentage of each of those allocations equal to its percentage of the sector’s primary rockfish species quota shares.

Table 2-19 and Table 2-20). Generally, catcher processors are permitted to retain more shortraker rockfish and rougheye rockfish, if they join cooperatives. So, maximum retained catch by the sector would be permitted, if all catcher processors chose to join cooperatives. Yet, since discards are permitted by participants in the limited access, it is possible that total catches of shortraker rockfish and rougheye rockfish could be greater if all catcher processors chose to join the limited access than fish in cooperatives, if participants in the limited access have substantial discards. In addition, since the MRA applies to aggregate catches of shortraker and rougheye, it is possible that catches of shortraker (the species of greater biological concern) could be greater in the limited access fishery. Catcher vessels in the program are subject to an aggregate MRA that limits only retained catch and does not discern the distribution of catch by species. To ensure that catch is constrained, the Council included a provision in the program that would require shortraker to be put on PSC status for catcher vessels in the program in the event that their catch exceeds 9.72 percent of the Central Gulf TAC for the species.

Table 2-19. Maximum permitted catches and actual catch of shortraker and rougheye rockfish in 2007

shtrkrngheye 2007		Catcher processor	Catcher vessels	Total
Maximum permitted catches under various co-op membership scenarios	Maximum sector shortraker allocation	106*	NA	
	Maximum sector rougheye allocation	360*	NA	
	Maximum sector catch of MRA shortraker and rougheye - aggregate	192**	204	
	Maximum retained catch of shortraker and rougheye			669
Maximum permitted catches under first year co-op memberships	Allocation of shortraker to cooperatives	60		
	Allocation of rougheye to cooperatives	203		
	Maximum MRA catch of shortraker and rougheye - aggregate	41	204	
	Maximum retained catch of shortraker and rougheye			508
Catches in the first year	Total catch of shortraker by cooperatives	44	9	
	Total catch of rougheye by cooperatives	11	10	
	Total catch of shortraker and rougheye by limited access	32		
	Total catch of shortraker and rougheye			106

Sources: NMFS Catch Accounting data and cooperative reports

Notes: MRA amounts assume that allocations of primary species are harvested in their entirety. MRAs limit only retained catch, so maximum catch under an MRA excludes potential discards. Total catch amounts include discards and retained catch.

* Maximum allocation to cooperatives, if all catcher processors join a cooperative.

** Maximum possible MRA catch, if all catcher processors join the limited access fishery.

Table 2-20. Maximum permitted catches and actual catch of shortraker and rougheye rockfish in 2008

shtrkrngheye 2008		Catcher processor	Catcher vessels	Total
Maximum permitted catches under various co-op membership scenarios	Maximum sector shortraker allocation	95.0*	NA	
	Maximum sector rougheye allocation	491.0*	NA	
	Maximum sector catch of MRA shortraker and rougheye - aggregate	123.8**	132.5	
	Maximum retained catch of shortraker and rougheye			718.5
Maximum permitted catches under second year co-op memberships	Allocation of shortraker to cooperatives	48.0		
	Allocation of rougheye to cooperatives	251.0		
	Maximum MRA catch of shortraker and rougheye - aggregate	57.8	132.5	
	Maximum retained catch of shortraker and rougheye			489.3
Catches in the second year	Total catch of shortraker by cooperatives	28.7	32.0	
	Total catch of rougheye by cooperatives	6.9	15.0	
	Total catch of shortraker and rougheye by limited access	54.4		
	Total catch of shortraker and rougheye			106.2

Source: NMFS Catch Accounting data

Notes: MRA amounts assume that allocations of primary species are harvested in their entirety. MRAs limit only retained catch, so maximum

* Maximum allocation to cooperatives, if all catcher processors join a cooperative.

** Maximum possible MRA catch, if all catcher processors join the limited access fishery.

In the first year of the program, catcher processors participated in both cooperatives and the limited access fishery. The choice of some catcher processors to participate in the limited access fishery reduced the permitted retained catch of the two species by over 150 metric tons. Yet, some catcher processors are reported to have been reluctant to join cooperatives because of the potential that the constraining shortraker and rougheye allocations would limit their ability to harvest primary species. Notwithstanding this fear, during the first year of the program, total catch of shortraker and rougheye in the limited access

were approximately 10 metric tons less than the amount that could be retained under the MRA and were substantially less than would have been permitted had these catcher processors elected to participate in cooperatives. Catcher vessels in the program harvested less than 10 percent of the maximum amount permitted by its MRA.

Catches of both species under the program’s system of allocations and MRAs were less than historical catches in the rockfish fishery (see Table 2-21). In addition, catches in the first two years of the rockfish pilot program were a relatively smaller portion of the total allowable catch, although the distribution of that catch between the two sectors has varied across years (please see Section 3.4.4 for further details on the shortraker and rougheye rockfish fishery during the first two years of the rockfish pilot program).

Table 2-21. Total allowable catches and total catches of shortraker rockfish and rougheye rockfish in the Central Gulf rockfish fisheries (2005-2008)

Year	Species	Total allowable catch	Catcher processor sector		Catcher vessel sector		Total	
			Catch (in metric tons)	Percent of the total allowable catch	Catch (in metric tons)	Percent of the total allowable catch	Catch (in metric tons)	Percent of the total allowable catch
2005	Shortraker rockfish	324	127	39	19	6	146	45
	Rougheye rockfish	557	48	9	9	2	57	10
2006	Shortraker rockfish	353	145	41	14	4	159	45
	Rougheye rockfish	608	5	1	30	5	35	6
2007	Shortraker rockfish	353	63	18	4	1	67	19
	Rougheye rockfish	611	19	3	6	1	25	4
2008	Shortraker rockfish	315	57	18	32	10	89	28
	Rougheye rockfish	834	33	4	15	2	49	6

Source: NMFS Catch Accounting

Also, total catches of shortraker rockfish and rougheye rockfish in all fisheries relative to their TACs do not indicate that they overharvests (see Table 2-22).

Table 2-22. Catches and total allowable catches of shortraker rockfish and rougheye rockfish in all Central Gulf fisheries (2005 -2008)

Year	Shortraker rockfish			Rougheye rockfish		
	Catch (in metric tons)	Total allowable catch (in metric tons)	Percent of total allowable catch harvested	Catch (in metric tons)	Total allowable catch (in metric tons)	Percent of total allowable catch harvested
2005	223	324	68.8	122	557	21.9
2006	303	353	85.8	134	608	22.0
2007	158	353	44.8	178	611	29.1
2008	244	315	77.5	190	834	22.8

Source: NMFS Catch reports (2005-2008).

Note: Prior to 2005, shortraker rockfish and rougheye rockfish were managed using an aggregate total allowable catch

2.3.4 Captains and Crew in the Rockfish Fisheries

LLP Management

Under LLP management, trawl catcher vessels in the CGOA rockfish fisheries were typically operated by a captain and two to four crewmembers. Since the fisheries had a very short duration, rockfish captains and crew often worked on the same vessel in other fisheries throughout the year. A limited number of crew, however, worked on other vessels in other fisheries, including fixed gear fisheries for crab or halibut. Captains and crew were typically compensated using a share system, under which they received a

portion of the revenues generated by the vessel during the season. Crew shares were typically on the order of 5 to 10 percent of gross ex vessel revenues after fuel, food, observer coverage, freight and cargo insurance, fiber (in the case of catcher processors), and trip specific expenses are deducted. Captain's shares are typically one and one-half times the average crew share. Both captain and crew earn relatively larger shares on vessels with fewer crew. Total crew shares (including the captain's share) are on the order of 30 to 40 percent of gross revenues, depending on circumstances and deductions in determining the revenue basis on which shares are calculated.

In addition to fishing crews of similar size to those found on trawl catcher vessels, trawl catcher processors employ processing crews. The sizes of processing crews varied with the size of the vessel. The largest vessels had crews in excess of 50 during the LLP years. Small vessels carried crews of fewer than 30 persons. Some deck crew also worked in the processing plant. As with catcher vessels, catcher processor crews worked in several other fisheries in addition to the rockfish fisheries, as the CGOA rockfish fisheries was of relatively short duration. Most crews remained with the vessel on which they fished CGOA rockfish throughout the remainder of the year. Rockfish catcher processor crews were compensated based on vessel revenues. During LLP management years, deck crew on processing vessels earned a share of between 1.5 percent to 3 percent, while the captains earned between 5 and 10 percent. Processing crew earned between 0.5 percent and 2 percent, while the factory foreman earned approximately 1.5 to 3 percent. Some crewmembers (such as cooks) may have been paid a daily wage (or receive a daily minimum) in some instances. Shares likely differed with the expenses that were deducted in determining the revenue basis on which shares were calculated. In some cases, long term crews could have been provided additional benefits, such as health insurance. Total crew shares on catcher processors could have been slightly lower than on catcher vessels, as they were based on processed product revenues, and were on the order of 25 to 35 percent of the basis revenues.

Pilot Program

Little information is available concerning the effects of the rockfish pilot program on captains and crew. The unchanged distribution of catch across vessels suggests that captain and crew fishing activity has changed little in the first two years of the program. This consistency in distribution also suggests that leasing of quota and royalties may have little effect on crew in the fisheries. The leasing of catcher processor quota to catcher vessel cooperatives likely had a distributive effect on revenues between crews in the different sectors, with some royalty removed prior to payment of crews. On the catcher processor side, the vessels that made these transfers likely were deployed elsewhere, mitigating the effect of the transfer on their crews. On the catcher vessel side, these transfers likely had the predictable effect of increasing the total payments to crew harvesting the additional allocation, but at a decreased share basis from fishing quota owned by the vessel. Although only anecdotal information is available concerning payments to captains and crew, no vessel owners or crew have reported changes in crew payment structures or crew share percentages; however, royalties are believed to be charged on leases of annual allocations. Since more licenses received allocations in the fishery than have historically participated on an annual basis, the leasing has not reduced fleet size in either sector. In addition, vessels in the program participate in several other fisheries, with Central Gulf rockfish occupying only a brief portion of their annual fishing. Consequently, any consolidation under the program is unlikely to result in the removal of vessels from all fisheries, but only redirect efforts within the seasons and fisheries. In turn, any effect on crews is likely to be minimal.

Crews also are affected by the slowing of fishing under the program. With secure allocations, vessels have slowed the rate of fishing, no longer needing to race for a share of the TAC. Although this may mean more time on the grounds for crews, they likely benefit from less rigorous fishing practices.

2.3.5 The Processing Sector

LLP Management

Since relatively few processors participate in the Central Gulf rockfish fishery, confidentiality constraints limit information that may be conveyed concerning the distribution of processing in the fishery. In the years prior to implementation of the program, few processors that did not qualify for the program participated in the fishery (see Table 2-23). Since only qualified processors are permitted to receive deliveries under the rockfish pilot program, only the five qualified processors participated in the fishery in the first two years of the pilot program.²⁴

Table 2-23. Number of plants receiving deliveries in the Central Gulf rockfish fishery (2003-2008)

Year	Number of plants receiving deliveries	
	Qualified	Unqualified
2003	4	2
2004	5	1
2005	5	1
2006	5	1
2007	5	NA
2008	5	NA

Source: NMFS Catch Accounting data (2003-2008).

Table 2-24 below shows processing of all species by qualifying processors from 1996 to 2006. The data in the table are from the Stat of Alaska Commercial Operators Annual Reports. Since these data are not reported on a management area basis, all of the production numbers could include amounts from management areas other than the Gulf of Alaska.

²⁴ Only processors that received in excess of 250 metric tons of aggregate Pacific ocean perch, northern rockfish, and pelagic shelf rockfish deliveries per year, for 4 years, from 1996 to 2000, are eligible to participate in the main program.

Table 2-24. Production and first wholesale revenues by species of qualifying processors using 1996 to 2006 years

Year	Targeted Rockfish			Other Groundfish			Halibut		
	Number of processors	Pounds of product	First wholesale revenue (\$)	Number of processors	Pounds of product	First wholesale revenue (\$)	Number of processors	Pounds of product	First wholesale revenue (\$)
1996	4	1,700,241	863,330	6	71,950,988	87,644,756	6	6,771,955	20,094,340
1997	6	2,408,299	2,008,478	6	53,550,907	65,337,375	5	10,224,289	26,378,322
1998	7	3,773,336	4,269,394	7	64,849,412	74,660,290	6	9,316,268	16,898,045
1999	6	10,862,045	2,215,397	6	84,006,927	78,338,039	5	8,134,356	21,789,759
2000	6	3,886,889	3,100,420	7	51,148,430	75,186,758	7	6,836,103	19,727,110
2001	7	3,539,946	3,244,904	7	50,871,084	66,263,352	6	8,523,077	20,885,344
2002	6	4,302,314	4,445,649	6	41,074,756	56,230,290	6	7,004,323	19,958,656
2003	7	4,574,609	5,240,801	7	46,737,904	51,820,653	6	7,259,541	25,553,812
2004	6	6,481,804	4,439,186	7	62,347,292	63,250,298	5	7,396,292	26,466,414
2005	6	6,814,587	5,402,990	7	70,684,431	80,650,689	6	7,004,527	27,239,873
2006	6	9,174,570	9,719,876	8	80,391,817	85,964,384	7	4,897,508	22,498,157

Year	Shellfish			Salmon			Other		
	Number of processors	Pounds of product	First wholesale revenue (\$)	Number of processors	Pounds of product	First wholesale revenue (\$)	Number of processors	Pounds of product	First wholesale revenue (\$)
1996	3	1,145,705	4,786,565	4	32,690,236	58,973,677	6	5,223,250	10,541,078
1997	6	958,404	4,226,391	6	19,859,540	33,518,066	6	7,112,010	11,838,073
1998	5	1,072,652	3,013,736	7	42,018,056	56,789,788	6	5,193,809	9,699,837
1999	5	975,841	5,963,100	7	42,795,885	63,243,458	6	3,400,676	8,185,042
2000	4	1,798,524	8,435,297	6	36,673,437	52,748,610	7	3,443,608	9,089,733
2001	6	1,346,522	7,837,302	5	47,375,151	52,624,620	7	4,354,348	8,812,336
2002	6	1,815,535	9,513,549	5	34,202,181	38,677,646	6	3,403,835	7,944,447
2003	6	1,371,552	8,467,019	6	44,997,724	59,808,976	7	5,992,945	12,363,680
2004	6	1,476,743	9,278,190	7	55,985,180	69,343,424	7	8,767,877	14,363,921
2005	7	2,636,198	10,592,961	7	67,847,482	84,929,134	7	8,302,303	12,108,817
2006	8	3,284,323	10,787,916	6	61,646,649	79,878,969	8	5,622,241	11,231,797

Source: COAR data

The table shows that rockfish production is a relatively small portion of the production by qualified processing plants. The first wholesale revenues for rockfish show that qualifying processors receive substantially less for target rockfish products than for other species.

Pilot Program

Under the pilot program, each eligible harvester is permitted to join a single cooperative in association with the processor to which the harvester delivered the most pounds of the three primary rockfish species in aggregate during the years 1996 to 2000 dropping one year chosen by the processor, which would be dropped for all harvester deliveries to that processor. Harvesters with no deliveries to a qualified processor are permitted to join a cooperative in association with any one of the qualified processors. By requiring cooperative/processor associations for cooperative formation, but not prescribing the terms of that association, the program rules provide processors with leverage to define the terms of that association. Although not explicitly provided for in the program rules, it is contemplated that some delivery commitments would be provided for in the agreement defining that association.

In the first two years of the program, the distribution of cooperative landings suggests that cooperative/processor associations had a great influence on delivery patterns (see Table 2-25). Whether this influence arose from obligations in cooperative agreements or other bases (such as long-term relationships) is not known. Despite the strong relationship between deliveries of a cooperative and its associated processor, almost one-fifth of deliveries of primary rockfish catch were made to a processor other than the cooperative's associated processor. Some portion of these deliveries is known to have been made to the processor associated with the catcher processor cooperative that transferred its allocation to catcher vessel cooperatives, who distributed that transfer among several catcher vessel cooperatives (including its associated cooperative). Yet, the tonnage of deliveries to processors other than a cooperative's associated cooperative exceeds the tonnage of the transfer to the catcher vessel sector by

catcher processor cooperatives and transfers among catcher vessel cooperatives, suggesting that shore-based processors allowed their associated cooperatives some latitude to make deliveries to other processors.

Table 2-25. Deliveries of allocated species by catcher vessel cooperatives (2007 and 2008)

Year	Species	Deliveries to associated processors		Deliveries to processors other than the associated processor			
		Number of deliveries	Landings (in metric tons)	Number of deliveries	Number of processors receiving deliveries	Number of cooperatives making deliveries	Landings (in metric tons)
2007	Pacific Ocean Perch	92	3,531.1	15	3	3	1048.5*
	Northern Rockfish	83	1,856.3	13	1	3	
	Pelagic Shelf Rockfish	93	1,310.1	13	1	3	
	Pacific Cod	88	276.7	11	2	3	**
	Sablefish	58	423.6	10	2	3	**
	Shortraker Rockfish	30	8.6	2	1	2	**
	Rougheye Rockfish	39	8.8	6	2	2	**
Thornyhead Rockfish	45	45.1	7	2	2	**	
2008	Pacific Ocean Perch	90	3,933.9	15	2	3	996.4*
	Northern Rockfish	77	1,190.4	13	2	3	
	Pelagic Shelf Rockfish	84	1,308.9	14	2	3	
	Pacific Cod	87	582.2	16	2	3	**
	Sablefish	66	347.2	12	2	3	**
	Shortraker Rockfish	37	13.2	6	2	3	**
	Rougheye Rockfish	40	12.2	7	2	3	**
Thornyhead Rockfish	56	51.2	11	2	3	**	

Source: Catch accounting data and cooperative reports

Note: Each of the five eligible processors received deliveries from its associated cooperative.

Deliveries are not unique across species.

Week ending dates are used to determine delivery counts.

* Includes all primary species

** Withheld for confidentiality

2.3.6 Ex Vessel Pricing and Harvester/processor Relationships

LLP Management

Under LLP management, ex vessel prices were negotiated informally by the rockfish fleet in the preseason. Fishermen often contact processors in the preseason to inquire about pricing for the season. In addition, the fleet that delivered to a processor often met with the processor to discuss delivery scheduling among fleet members. A processor typically offered a common price to all of its fleet members. Fisherman often communicated with each other concerning processor price offers, but most perceived that little negotiating leverage existed. Usually the fishermen remained with their primary processor throughout the season. Harvesters typically delivered on a rotation, with fishing trips of less than 72 hours, to maintain product quality. Fishermen typically did not receive payment for low quality fish that couldn't be marketed except as meal. At times fishermen moved to another processor for a delivery midseason. These movements were typically made to avoid loss of quality because of a long wait to offload, and at times were facilitated by the processors.

Occasionally, post season bonuses were paid by processors in response to good market prices for products or in response to prices of competing processors. Processors in the rockfish fisheries were reported to maintain relatively stable fleets, with most fishermen delivering to their rockfish processor throughout the year in other fisheries as well. When fishermen do move between processors, they typically moved all of their deliveries, not just rockfish deliveries.

Secondary species (particularly Pacific cod and sablefish) were an important part of pricing in the rockfish fisheries. Fishermen typically inquired about the price of these species in the preseason. Prices of Pacific cod were typically based on the directed season price from earlier in the year, with a possible downward adjustment for the absence of milt and roe and the lower quality observed in the summer months. Sablefish prices were based on prices in the IFQ fishery, with some downward adjustment for lower quality in the trawl fishery.

Fishermen typically separated Pacific cod and sablefish from rockfish and store them in iced totes. Pacific cod were usually bled. Sablefish were usually bled and sometimes were headed and gutted. Both species brought a substantially higher price than the target rockfish, so fishermen gave extra attention to their care. Shortraker, roughey, and thornyhead rockfish also brought a premium price, but were caught in substantially lower quantities than Pacific cod and sablefish.

Table 2-26 shows the landings, ex vessel revenues, and average ex vessel price from 1996 to 2006 in the CGOA rockfish fisheries for vessels that had rockfish landing in the directed rockfish season for that year.

Table 2-26. Landings, ex vessel revenues, and average ex vessel prices by catcher vessels that had a rockfish landing in the directed Central Gulf of Alaska rockfish fisheries for that year (1996-2006)

Year	Pacific ocean perch			Northern Rockfish			Pelagic shelf rockfish		
	Pounds landed	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)	Pounds landed	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)	Pounds landed	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)
1996	4,881,002	254,165	0.052	1,963,834	92,300	0.047	752,032	41,362	0.055
1997	5,117,299	260,410	0.051	1,673,321	88,686	0.053	479,846	24,599	0.051
1998	5,714,437	371,506	0.065	4,159,221	236,512	0.057	1,494,307	83,750	0.056
1999	5,563,317	425,259	0.076	4,379,444	294,588	0.067	3,015,512	203,621	0.068
2000	9,644,730	647,566	0.067	4,181,252	243,073	0.058	5,083,907	304,494	0.060
2001	8,701,024	413,355	0.048	3,088,720	144,943	0.047	2,885,042	143,925	0.050
2002	9,883,807	473,912	0.048	4,970,464	240,395	0.048	2,897,029	151,850	0.052
2003	11,274,234	628,468	0.056	6,827,373	368,945	0.054	3,344,935	177,002	0.053
2004	10,976,457	633,843	0.058	4,941,583	279,240	0.057	2,928,348	175,265	0.060
2005	9,750,971	978,408	0.100	4,063,192	399,627	0.098	2600739	262549	0.101
2006	9,145,460	1,421,049	0.155	3,834,231	573,047	0.149	2,098,432	312,718	0.149

Source: CV data from ADF&G Fish Tickets

As the table shows, trawl ex vessel prices ranged from roughly 5 cents per pound to over 15 cents per pound during this period. Prices were at their highest in 2005 and 2006. No particular relationship appeared to exist across species, as the prices varied relative to each other across the years.

Table 2-27 shows landings, ex vessel gross revenues, and average ex vessel price for secondary species harvested by trawl catcher vessels that had a rockfish landing in the directed CGOA rockfish fishery for that year from 1996 to 2006.

Table 2-27. Landings, ex vessel revenues, and average ex-vessel prices for catch of secondary species by catcher vessels that had a rockfish landing in the directed Central Gulf of Alaska rockfish fisheries for that year (1996-2006)

Year	Pacific cod			Sablefish			Shortraker/rougheye			Thornyhead		
	Pounds landed	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)	Pounds landed	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)	Pounds landed	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)	Pounds landed	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)
1996	5,840	987	0.17	1,079,583	1,855,572	1.72	143,630	14,900	0.10	111,888	96,656	0.86
1997	244,225	44,898	0.18	527,435	941,110	1.78	28,728	4,113	0.14	70,959	36,131	0.51
1998	950,947	137,652	0.14	622,190	677,683	1.09	87,127	10,344	0.12	191,835	66,724	0.35
1999	1,550,248	436,938	0.28	732,283	1,090,268	1.49	42,528	3,425	0.08	62,792	27,221	0.43
2000	2,290,283	711,477	0.31	1,032,160	1,570,170	1.52	101,426	17,442	0.17	143,956	44,651	0.31
2001	1,990,787	532,608	0.27	776,770	1,058,725	1.36	123,758	11,471	0.09	79,681	28,330	0.36
2002	2,670,933	563,163	0.21	803,475	1,123,793	1.40	49,573	4,770	0.10	74,778	16,441	0.22
2003	3,244,817	948,894	0.29	1,190,246	1,830,446	1.54	63,956	10,127	0.16	132,889	42,987	0.32
2004	2,933,285	739,688	0.25	1,159,395	1,537,609	1.33	82,829	8,582	0.10	51,130	15,281	0.30
2005	1,755,174	479,242	0.27	971,438	1,380,528	1.42	44,048	12,818	0.29	58,159	17,595	0.30
2006	596,365	215,568	0.36	825,644	1,400,923	1.70	78,329	16,976	0.22	78,870	26,545	0.34

Source: CV data from ADF&G Fish Tickets

As the table shows, vessels in the rockfish fishery historically received substantially higher prices for landings of secondary species than targeted rockfish. Revenues in the fishery from catch of sablefish exceeded revenues from all target rockfish combined. Revenues in the fishery from Pacific cod exceeded revenues from northern rockfish and pelagic rockfish combined. Catcher vessels had substantially less revenue from catch of non-target rockfish, although the average ex vessel price for thornyheads exceeded the ex vessel price for Pacific cod.

Limited information during this period was available concerning vertical integration in the fishery. In addition, confidentiality limitations prevent any specific description of the few vertically integrated processors during this period. Because of these limitations, a qualitative discussion of the impacts of vertical integration is provided in the analysis of alternatives. Vertical integration likely had minor effects on the LLP managed fishery. Vertically integrated processors likely had a slight advantage arising from certain deliveries from their own vessels and through added information concerning fishing costs and operations. This information likely provided only a minimal negotiating advantage in the LLP managed fishery because of the concentrated season.

Pilot Program

In the first two years of the program, prices of primary rockfish species increased very slightly (see Table 2-28 and Table 2-29). Northern rockfish and pelagic shelf rockfish increased during the 2008 year, while Pacific ocean perch remained stable. Pacific cod and sablefish both continued their upward trend. Available price information for Pacific cod and sablefish, however, include substantial landings from other target fisheries, so price increases for these species should not be attributed to the change in management to the pilot program.

Table 2-28. Landings, ex vessel revenues, and average ex vessel price for primary species allocated in the Central Gulf rockfish program (2003-2008)

Species	Year	Landings (metric tons)	Ex vessel revenue (\$)	Average ex vessel price (\$/lb)
Pacific Ocean Perch	2003	3,467	452,856	0.059
	2004	3,822	504,100	0.060
	2005	4,458	992,138	0.101
	2006	4,560	1,565,561	0.156
	2007	5,095	1,838,308	0.164
	2008	4,864	1,722,904	0.161
	Total	26,266	7,075,868	0.12
Northern Rockfish	2003	2,372	303,345	0.058
	2004	1,431	193,007	0.061
	2005	1,860	408,745	0.100
	2006	1,739	578,442	0.151
	2007	2,202	754,367	0.155
	2008	1,414	561,635	0.180
	Total	11,017	2,799,541	0.12
Pelagic Rockfish	2003	681	81,518	0.054
	2004	1,032	142,226	0.062
	2005	1,113	253,382	0.103
	2006	967	320,619	0.150
	2007	1,610	555,860	0.157
	2008	1,221	491,891	0.183
	Total	6,624	1,845,496	0.13

Source: COAR DATA

* Withheld for confidentiality

Note: Landings include catch from outside the CGOA rockfish season

Table 2-29. Landings, ex vessel revenues, and average ex vessel price for secondary species allocated in the Central Gulf rockfish program (2003-2008)

Species	Year	Landings (metric tons)	Ex vessel revenue (\$)	Average ex vessel price (\$/lb)
Pacific Cod	2003	10,287	6,841,770	0.302
	2004	10,413	5,925,269	0.258
	2005	8,338	5,169,178	0.281
	2006	6,001	4,969,460	0.376
	2007	9,232	9,787,392	0.481
	2008	11,231	12,826,641	0.518
	Total	55,501	45,519,710	0.37
Sablefish	2003	265	1,459,604	2.499
	2004	405	2,172,641	2.432
	2005	352	1,895,982	2.441
	2006	378	2,602,253	3.119
	2007	322	1,926,553	2.712
	2008	253	1,746,452	3.133
	Total	1,976	11,803,485	2.71
Shorthead	2003	66	23,652	0.164
	2004	16	9,728	0.277
	2005	23	17,040	0.337
	2006	71	33,789	0.217
	2007	*	*	*
	2008	*	*	*
	Total	311	146,790	0.21
Rougheye	2003	58	17,337	0.135
	2004	20	6,220	0.144
	2005	28	11,664	0.190
	2006	60	30,615	0.233
	2007	50	26,397	0.239
	2008	*	*	*
	Total	*	*	*
Thornyheads	2003	48	62,510	0.587
	2004	33	32,866	0.456
	2005	33	30,090	0.418
	2006	32	32,487	0.458
	2007	32	41,224	0.581
	2008	38	52,136	0.629
	Total	216	251,312	0.53

Source: COAR DATA

* Withheld for confidentiality

Note: Landings include catch from outside the CGOA rockfish season

2.3.7 Product Markets

Several different products are made from rockfish in the fishery. Production differs somewhat across the two sectors (inshore and offshore). To provide a better understanding of these differences, the information in this section is separated by sector.

Table 2-30 shows production quantities, first wholesale revenues, and average prices from 2003 to 2008 from Commercial Operators Annual Reports. These data are aggregated across all management areas, not allowing the separation of products from the Central Gulf of Alaska directed rockfish fishery.

Table 2-30. Production of primary rockfish species by shore-based processors participating in the rockfish pilot program (2003-2008)

Species	Year	Average ex vessel price (\$/lb)	Fillet				Head and gut				Whole			
			Number of plants	Pounds of product	First wholesale revenues (\$)	Average first wholesale price (\$/lb)	Number of plants	Pounds of product	First wholesale revenues (\$)	Average first wholesale price (\$/lb)	Number of plants	Pounds of product	First wholesale revenues (\$)	Average first wholesale price (\$/lb)
Pacific Ocean Perch	2003	0.059	4	1,219,301	2,100,621	1.723	1	*	*	*	5	79,656	27,509	0.345
	2004	0.060	4	578,400	1,056,615	1.827	4	1,073,522	506,117	0.471	6	1,384,308	479,170	0.346
	2005	0.101	3	310,843	595,379	1.915	4	1,837,395	1,274,507	0.694	3	1,680,760	930,851	0.554
	2006	0.156	3	167,035	336,392	2.014	6	2,994,570	3,487,625	1.165	6	2,562,583	1,920,230	0.749
	2007	0.164	5	608,835	1,313,727	2.160	8	2,388,448	1,746,082	0.731	2	*	*	*
	2008	0.161	4	54,750	201,625	3.680	6	2,982,198	2,326,350	0.780	6	1,220,228	767,689	0.629
Northern Rockfish	2003	0.058	4	488,540	677,447	1.387	1	*	*	*	4	111,955	41,830	0.374
	2004	0.061	4	187,545	355,764	1.897	3	215,249	105,707	0.491	5	777,321	287,913	0.370
	2005	0.100	3	77,174	101,501	1.315	4	517,926	363,096	0.701	3	911,870	517,007	0.567
	2006	0.151	5	126,624	482,468	3.810	5	1,170,715	1,188,492	1.015	4	888,319	589,720	0.664
	2007	0.155	6	156,894	362,976	2.310	5	1,392,006	982,448	0.706	1	*	*	*
	2008	0.180	3	46,115	71,193	1.540	6	1,004,908	758,129	0.754	6	191,261	109,305	0.571
Pelagic Shelf Rockfish	2003	0.054	3	338,662	639,828	1.889	2	*	*	*	5	99,918	43,523	0.436
	2004	0.062	4	237,332	416,309	1.754	2	*	*	*	8	589,008	211,468	0.359
	2005	0.103	4	266,168	567,563	2.132	3	209,441	121,584	0.581	6	192,968	138,738	0.719
	2006	0.150	4	275,923	953,419	3.455	3	283,794	281,419	0.992	4	578,110	383,807	0.664
	2007	0.157	6	143,389	323,553	2.260	1	*	*	*	4	1,000,644	1,649,313	1.648
	2008	0.183	1	*	*	*	5	469,088	578,908	1.234	5	424,269	215,932	0.509

Source: COAR DATA
* Withheld for confidentiality

The data show that most production of rockfish is whole fish and headed and gutted fish. These products generate substantially less revenue than fillets. Accepting that whole and head and gut products have substantially higher recovery rates, the return per pound of raw fish from fillet production is substantially higher than for whole and head and gut products.²⁵ Production and first wholesale product prices of rockfish products by processors that participate in the rockfish pilot program have fluctuated over the years leading up to implementation of the pilot program. A few considerations should be kept in mind when reviewing this table. First, combining whole and head & gut products conceals price differences in those products, which may be as small as a few cents and as large as \$0.50 per pound of finished product depending on the transaction. Given the aggregation and these product price differences, changes in prices for the head & gut and whole products reflect a composition of changes in prices for these products and changes in production (with prices increasing with production of head & gut products). In addition, the difference in 2006 prices from prices in other years suggest that data from that year should be questioned and may be unreliable.

Prices appear to have risen in the years leading up to the implementation of the program. Aside from the 2006 prices, prices of primary rockfish appear to be rising steadily. No particular pattern appears to exist between identified product types over the years. In the first year of the program, no surimi was produced from rockfish by the participating processors. In addition, two of the participating processor produced some fresh fillets. Although these practices suggest that some processors are attempting to generate additional revenues through higher valued products, the extent of this activity cannot be revealed because of confidentiality protections. Overall, processing under the pilot program seems to favor a continuing trend of increasing value of production from the rockfish fishery.

²⁵ Recovery rates are generally approximately 25 percent for fillets, 20 percent for surimi, and 55 percent for head and gut products.

Table 2-31 shows production of secondary species products by rockfish qualified processors. The production of secondary species is important to inshore processors that receive targeted rockfish. As the table shows, inshore processors generate substantial revenues from Pacific cod and sablefish, greater than the primary rockfish species combined in years shown.

Table 2-31. Production, first wholesale revenues, and average product prices of secondary species by inshore processors that received targeted rockfish from the Central Gulf of Alaska (2003-2008)

Species	Year	Number of plants	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)
Pacific Cod	2003	7	15,366,330	22,566,807	1.4686
	2004	7	18,219,487	24,400,043	1.3392
	2005	7	14,344,719	24,512,043	1.7088
	2006	7	13,775,224	29,247,757	2.1232
	2007	7	16,573,094	37,758,571	2.2783
	2008	5	10,810,930	27,213,056	2.5172
Rougheye	2003	5	58,402	64,308	1.1011
	2004	6	23,191	23,667	1.0205
	2005	5	52,912	52,924	1.0002
	2006	6	90,937	127,097	1.3976
	2007	5	39,265	42,169	1.0740
	2008	3	*	*	*
Sablefish	2003	7	2,317,032	9,742,646	4.2048
	2004	7	2,519,482	9,448,189	3.7501
	2005	6	1,946,761	7,743,714	3.9777
	2006	7	2,063,992	9,317,536	4.5143
	2007	7	2,709,999	12,644,539	4.6659
	2008	4	1,290,333	7,388,058	5.7257
Shorthead	2003	4	44,026	82,844	1.8817
	2004	4	14,213	19,073	1.3419
	2005	5	36,302	41,487	1.1428
	2006	5	85,599	147,642	1.7248
	2007	3	*	*	*
	2008	2	*	*	*
Thornyheads	2003	7	91,105	105,606	1.1592
	2004	7	81,456	111,039	1.3632
	2005	7	59,500	89,431	1.5030
	2006	7	67,141	182,642	2.7203
	2007	7	79,201	130,372	1.6461
	2008	5	50,787	121,772	2.3977

Source: COAR data

* Withheld for confidentiality

Table 2-32 shows product, product revenues, and average produce prices for the catcher processor sector in the CGOA rockfish fisheries. The table shows that, for all species, most production is eastern cut head and gut. Although prices of the species vary relative to one another, in most years Pacific ocean perch brought the highest prices, while pelagic shelf rockfish sole for a higher prices than northern rockfish. Prices also varied year to year, with prices at their highest in the two years leading up to the implementation of rockfish pilot program, followed by a slight decline in prices after implementation of the pilot program. No information concerning whole/head and gut could be released because few vessels processed that product.

Table 2-32. Target rockfish products, product weights, product revenues, and average product prices of the catcher processor sector in the Central Gulf of Alaska Rockfish fishery (2003-2008)

Species	Year	Eastern Cut				Western Cut				Whole and Head & Gut			
		Number of vessels	Product weight (mt)	Product revenue (\$)	Average product price (\$)	Number of vessels	Product weight (mt)	Product revenue (\$)	Average product price (\$)	Number of vessels	Product weight (mt)	Product revenue (\$)	Average product price (\$)
Pacific Ocean Perch	2003	7	1,188	1,543,740	0.5893								
	2004	6	1,501	2,449,018	0.7402								
	2005	8	1,743	4,365,343	1.1362								
	2006	6	1,727	4,750,761	1.2478								
	2007	5	1,423	2,685,598	0.8561								
	2008	7	1,487	3,230,495	0.9857								
Northern Rockfish	2003	5	821	560,965	0.3098					1	*	*	*
	2004	6	579	678,608	0.5317					1	*	*	*
	2005	6	951	1,847,454	0.8815								
	2006	5	1,035	2,400,770	1.0523								
	2007	3	434	736,719	0.7707								
	2008	5	360	545,987	0.6888								
Pelagic Shelf Rockfish	2003	6	454	432,705	0.4327								
	2004	7	383	519,340	0.6152								
	2005	6	287	643,243	1.0153								
	2006	4	401	981,009	1.1084								
	2007	4	425	751,589	0.8019								
	2008	6	658	1,340,366	0.9237								

Source: WPR
* Withheld for confidentiality

The production of secondary species is important to rockfish catcher processors participants. Table 2-33 provides production weight, product revenues, and average product prices for secondary species. As the table shows, catcher processors generate substantial revenues from sablefish, greater than from northern rockfish and pelagic shelf rockfish combined in years shown. Shortraker/roughey rockfish revenues also exceed those from pelagic shelf rockfish during the years shown. In addition, prices for each of the allocated secondary species exceed those of all of the target CGOA rockfish. Although not shown in the table most production of secondary species is head and gut fish.

Table 2-33. Production of secondary species by catcher processors in the rockfish pilot program (2003-2008)

Species	Year	Vessles	Product weight (mt)	Product revenues (\$)	Average product price (\$)
Pacific Cod	2003	4	69	171,679	1.1310
	2004	6	48	122,285	1.1515
	2005	5	40	104,357	1.1925
	2006	5	44	165,599	1.6921
	2007	3	34	135,388	1.7982
	2008	5	29	119,924	1.8722
Sablefish	2003	5	175	1,365,677	3.5355
	2004	7	165	1,240,550	3.4159
	2005	6	151	1,255,576	3.7804
	2006	5	106	950,834	4.0816
	2007	3	80	755,592	4.2892
	2008	6	78	884,437	5.1607
Shortraker/Rougheye	2003	5	186	526,318	1.2836
	2004	7	86	298,767	1.5704
	2005	6	77	291,218	1.7155
	2006	5	32	121,916	1.7116
	2007	3	33	82,902	1.1532
	2008	6	31	119,566	1.7499
Thornyheads	2003	5	300	966,374	1.4606
	2004	7	84	410,504	2.2167
	2005	6	119	404,064	1.5458
	2006	5	75	300,953	1.8132
	2007	3	46	181,839	1.8007
	2008	6	50	172,421	1.5733

Source: WPR

2.3.8 Rockfish Pilot Program Sideboards

There are a suite of GOA sideboard limits for catcher processors and catcher vessels operating in the Central GOA rockfish pilot program. There are two broad categories of sideboards – those that establish catch limits, and those that prohibit directed fishing. Catch limits are divided into limits on harvest in other GOA rockfish fisheries and limits on the amount of halibut mortality that can be used in GOA fisheries. The rockfish sideboard limits are in effect only during the month of July. The sideboards are designed to restrict fishing during the historical season for the fishery, but allow eligible rockfish harvesters to participate in fisheries before and after the historical rockfish season. Sideboards would apply to State waters in the “parallel” fishery.

General sideboard provisions

Catcher processors and catcher vessel sectors have sideboard limits for West Yakutat pelagic shelf rockfish and POP and Western GOA pelagic shelf rockfish, POP, and northern rockfish. The sideboard limits are based on each sector’s historic catch of target species in GOA fisheries during July. The calculation of GOA rockfish sideboard limits is based on the sector’s retained catch as a percentage of total retained catch in a fishery from July 1 to July 31 in each year from 1996 to 2002. There are separate sideboard ratios for each rockfish sideboard fishery and for each sector. Sideboard limits for the catcher vessel sector are applied at the sector level. For the catcher processor sector, sideboard limits are applied at the rockfish cooperative level. Each catcher processor rockfish cooperative is assigned a sideboard limit as a percent of the general sideboard ratio for each fishery for the CP sector. The general sideboard ratio for each fishery is presented in Table 2-34 along with 2009 sideboard limit. Table 2-35 provides a

summary of the sideboard activity for the catcher processors from 2007 to 2009 for Western GOA and West Yakutat rockfish species. There is no sideboard activity to report for the catcher vessel sector given that NOAA Fisheries has routinely closed these sideboard fisheries to directed fishing due to insufficient sideboard limits.

Table 2-34. 2009 rockfish program harvest limits by sector for West Yakutat and Western GOA rockfish species

Management Area	Fishery	C/P sector (% of TAC)	CV sector (% of TAC)	2009 TAC (mt)	2009 C/P limit (mt)	2009 CV limit (mt)
West Yakutat	Pelagic Shelf rockfish	72.4	1.7	247	179	4
	Pacific ocean perch	76	2.9	1,105	840	32
Western GOA	Pelagic Shelf rockfish	63.3	0	986	624	0
	Pacific ocean perch	61.1	0	3,704	2,263	0
	Northern rockfish	78.9	0	2,047	1,615	0

Table 2-35. Catcher processor sideboard activity for West Yakutat and Western GOA rockfish species

Management Area	Fishery	2007			2008			2009		
		Number of vessels	Catch (mt)	Percent of sideboard limit	Number of vessels	Catch (mt)	Percent of sideboard limit	Number of vessels	Catch (mt)	Percent of sideboard limit
West Yakutat	Pelagic Shelf rockfish	1	*	*	1	*	*	1	*	*
	Pacific ocean perch	1	*	*	1	*	*	1	*	*
Western GOA	Pelagic Shelf rockfish	4	489	53%	7	290	46%	8	531	103%
	Pacific ocean perch	4	2,579	99%	7	2,044	91%	8	1,801	79%
	Northern rockfish	4	996	88%	6	1,178	70%	8	1,438	89%

*Withheld for confidentiality
Source: NMFS Catch Accounting Data

Sectors are also limited in their catch by a second sideboard limit that is intended to constrain harvest from fisheries that are typically halibut constrained (Table 2-36) Sideboard limits are established for the catcher vessels and catcher processor sectors separately. NMFS administers the halibut PSC sideboard on the deep-water complex and the shallow-water complex.²⁶ The sideboards are set for Gulf-wide halibut usage, as halibut is currently managed on a Gulf-wide basis. If, in July, eligible vessels have caught the sideboard halibut amount within a complex, they would be precluded from participating in specific halibut sideboarded fisheries in the complex for the remainder of July. Table 2-37 provides a summary of the halibut PSC sideboard activity for both catcher processors and catcher vessels from 2007 to 2009 for shallow water and deep water complex fisheries.

Table 2-36. 2008 and 2009 rockfish program halibut mortality limits by sector

Sector	Shallow-water complex halibut PSC sideboard ratio	Deep-water complex halibut PSC sideboard ratio	Annual halibut mortality limit (mt)	Annual shallow-water complex halibut PSC sideboard limit (mt)	Annual deep-water complex halibut PSC sideboard limit (mt)
Catcher/Processor	0.54	3.99	2,000	11	80
Catcher vessel	6.32	1.08	2,000	126	22

²⁶ The deep-water complex includes sablefish, rockfish, deepwater flatfish, rex sole, and arrowtooth flounder. The shallow-water complex includes flathead sole, shallow water flatfish, pollock, and Pacific cod.

Table 2-37. Catcher processor and catcher vessel halibut PSC sideboard activity for shallow water and deep water complex fisheries

Sector	Halibut PSC fishery	2007			2008			2009		
		Number of vessels	Catch (mt)	Percent of sideboard limit	Number of vessels	Catch (mt)	Percent of sideboard limit	Number of vessels	Catch (mt)	Percent of sideboard limit
Catcher processors	Shallow water complex	0	0	n/a*	0	0	n/a*	0	0	n/a*
	Deep water complex	5	21.45	26.82%	10	30.24	37.80%	11	26.28	32.85%
Catcher vessels	Shallow water complex	9	32.06	25.44%	11	45.84	36.38%	4	9.19	7.29%
	Deep water complex	0	0	n/a*	0	0	n/a*	0	0	n/a*

Source: NMFS Catch Accounting Data

*Closed to directed fishing due to insufficient sideboard limit

Sideboard provisions for catcher processor cooperatives

In addition to the general sideboard limits noted above, all vessels in a rockfish cooperative must maintain an adequate monitoring plan while participating in the CGOA rockfish fishery or any directed sideboard fishery to be exempt from GOA groundfish prohibitions. If cooperative participants fail to maintain a monitoring plan, then cooperative participants would be prohibited from participating in GOA directed groundfish fisheries (IFQ sablefish fishery and CGOA rockfish fisheries) from July 1 through July 14 or until 90% of the cooperative's rockfish quota has been harvested.

Sideboard provisions for catcher processors limited access

In addition to the general sideboard provisions noted above, participants that elect to fish in the limited access fishery that have in excess of 5% of the sector's qualified catch of CGOA POP are subject to additional limits from July 1 until 90% of the CGOA POP that is allocated to the limited access fishery for the CP sector has been harvested. During that time period, CPs that are in the limited access may not participate in GOA groundfish fisheries except CGOA rockfish and sablefish ITQ.

Sideboard provisions for catcher processors opt-out

In addition to the general sideboard limits noted above, qualified participants that choose to opt-out of the rockfish pilot program would be prevented from participating in any directed fishery that the license holder did not participate in during the first week of July in at least two of the seven qualifying years. These seven qualifying periods are:

- June 30, 1996 through July 6, 1996
- June 29, 1997 through July 5, 1997
- June 28, 1998 through July 4, 1998
- July 4, 1999 through July 10, 1999
- July 8, 2000 through July 15, 2000
- July 1, 2001 through July 7, 2001, and
- June 30, 2002 through July 6, 2002.

Participation in area 650 during the qualifying period will count toward area 640 qualification. This provision is intended to prevent participants with multiple licenses and substantial history from opting out of the program with one license and entering other fisheries in which the license holder has no history.

Sideboard provisions for catcher vessels

In addition to the general sideboard provisions noted above, any qualified catcher vessel may not participate in directed fishing in BSAI (and adjacent State waters) during the month of July for Alaska plaice, arrowtooth flounder, flathead sole, other flatfish, POP, rock sole, and yellowfin sole.

Summary of sideboard provisions

Table 2-38 provides a detailed one page summary of the rockfish pilot program sideboard limits for each sector. Management of sideboard limits are similar to other sideboard programs in that once the sideboard limits are reached, directed fishing is closed.

Table 2-38. Summary of Rockfish Pilot Program sideboard limits in each sector

July Catch Limit	CV Sector	C/P Cooperatives	C/P Limited Access	C/P "Opt-out"
Catch limits: Western GOA POP, Pelagic Shelf, and Northern Rockfish West Yakutat POP, Pelagic Shelf, and Northern Rockfish	A collective CV limit for each species in each region Fisheries closed due to low sideboard limit	Cooperative specific limit for each species in each region	A collective limit for all non-cooperative C/Ps for each species in each region	
BSAI Pacific cod	CV Sector limit	N/A	N/A	N/A
Halibut mortality limits: GOA (1) Shallow-water limit, & (2) Deep-water limit	(1) shallow-water flatfish closed in the GOA when limit reached (2) deep-water flatfish closed due to low sideboard limit	(1) shallow-water flatfish closed in GOA when limit reached (2) deep-water flatfish closed due to low sideboard limit	(1) shallow-water flatfish closed in GOA when limit reached (2) deep-water flatfish closed due to low sideboard limit	
Prohibited fishing: BSAI groundfish (except pollock and IFQ sablefish)	July 1 - 31 prohibited directed fishing for most flatfish and rockfish	N/A	From July 1- until C/Ps harvest 90% of the CGOA POP (Only for C/Ps with more than 5% of the total C/P POP history)	N/A
GOA groundfish (except pollock and IFQ sablefish)	N/A	N/A ** (Assuming monitoring requirements met)		July 1 - July 14 - unless past activity

2.3.9 Community and Social Conditions

Historically, Kodiak has been the base for operations in the shore-based sector of the Central GOA rockfish fisheries. Almost all processing in the fisheries took place in Kodiak leading up to implementation of the rockfish pilot program. Kodiak is a large community by Alaska standards and is the seventh largest community in the state in terms of population.²⁷ Accompanying this size is a relatively diversified economy compared to other fishing communities in the southwestern part of the state. In terms of direct employment in the fishery being the overriding factor in residency decisions, the population of Kodiak could be viewed as less directly tied to the fishing economy than, for example, is

²⁷ The six largest communities in Alaska, in order, are Anchorage, Juneau, Fairbanks, Sitka, Ketchikan, and Kenai. There are two different basic types of local governance in these communities: Anchorage, Juneau, and Sitka are unified Home Rule Municipalities (i.e., unified city/boroughs), while Fairbanks, Ketchikan, and Kenai, like Kodiak, are Home Rule Cities (Kodiak Chamber of Commerce 2004).

the case for Unalaska, Akutan, or King Cove. Much of the economic diversity seen in Kodiak, however, links back to commercial fisheries in one way or another, with commercial fishing underpinning much of the apparent diversity, generating secondary and indirect employment, and otherwise driving a wide range of related activities. For example, there is a considerable U.S. Coast Guard presence in the community. While not a direct fisheries activity, the base would not exist in Kodiak if it were not driven by commercial fishing-related demands.

Table 2-39 lists detailed information on total volume and value of fish landings for Kodiak for 2006 by species or species group. Clearly, the value of landings in Kodiak are dominated by salmon (30 percent), and Pacific cod (19 percent), pollock (13 percent) halibut (12 percent), which together accounted for 75 percent of the total value of all species landed. Sablefish accounted for about 8 percent of the total, while all species of crab combined accounted for a little over 6 percent of the total, and flatfish accounted for about 4 percent of the total. The remaining species or species complex, including rockfish, accounted for more than 2 percent of the total but, as shown, several groundfish species were relatively high-volume species locally, but accounted for a relatively small proportion of the total value landed, due to relatively low values per pound.

Table 2-39. Volume and value of fish landed at Port of Kodiak, by species, 2006

Species	Volume Landed (pounds) ¹	% of Total Volume	Ex-vessel Value (dollars)	% of Total Value
salmon, Chinook	210,592	0.06%	\$197,956	0.19%
salmon, sockeye	8,146,700	2.14%	\$6,843,228	6.44%
salmon, coho	4,338,634	1.14%	\$2,863,498	2.70%
salmon, pink	117,392,708	30.82%	\$18,782,833	17.69%
salmon, chum	9,102,850	2.39%	\$3,003,941	2.83%
halibut, Pacific ²	3,454,834	0.91%	\$13,085,725	12.32%
herring, Pacific	5,624,729	1.48%	\$618,720	0.58%
cod, Pacific (gray)	50,039,197	13.14%	\$20,516,071	19.32%
pollock, walleye	101,523,425	26.65%	\$14,213,280	13.39%
arrowtooth flounder	30,710,932	8.06%	\$2,149,765	2.02%
black rockfish	214,151	0.06%	\$85,660	0.08%
octopus	209,709	0.06%	\$132,117	0.12%
perch, Pacific ocean	10,496,787	2.76%	\$1,679,486	1.58%
squid	3,375,890	0.89%	\$236,312	0.22%
sablefish (black cod)	2,467,618	0.65%	\$8,834,073	8.32%
skates	3,099,190	0.81%	\$688,156	0.65%
Rockfish ³	6,878,056	1.81%	\$1,124,548	1.06%
flatfish ⁴	20,421,644	5.36%	\$4,281,385	4.03%
crab ⁵	3,215,170	0.84%	\$6,851,290	6.45%
Total	380,922,816	100.00%	\$106,188,044	100.00%

¹ Represents pounds of product landed at the Port of Kodiak, including harvests from outside of the Kodiak management area (from Fish Ticket data).

² Halibut pounds from NMFS website: <http://www.fakr.noaa.gov/ram/ifqreports.htm> and includes all landings in Kodiak regardless of where fish were harvested.

³ Includes greenstripe, northern, thorneyhead, yelloweye, quillback, tiger, rosethorn, rougheye, shortraker, redbanded, dusky, yellowtail, sharpchin, harlequin, and blackgill rockfish.

⁴ Includes dover sole, rex sole, butter sole, English sole, starry flounder, petrale sole, sand sole, Alaska plaice, and Greenland turbot.

⁵ Includes Dungeness, red king, bairdi, and opilio crab.

Source: Adapted from Kodiak Chamber of Commerce, 2004 (from Alaska Department of Fish and Game).

The Kodiak fleet is primarily composed of multigear and multispecies boats. 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 shoreplant 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, as noted in the processor discussion below. Most of the boats that deliver to Kodiak processors are multipurpose 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. 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. Among plants that run pollock, there is a bimodal distribution of trawl fishing power. The larger plants typically have 8 to 10 trawlers working with them, whereas the smaller plants typically have 4 or fewer trawlers in their pollock fleet. 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 (when openings occur). There is a small fleet that fishes for Dungeness crab as well.

Some information concerning these impacts can be gleaned from examining the residence of participants in the fisheries. Participation by residence estimates can be generated for each of the primary participating sectors, catcher vessels, catcher processors, and processors. In each case, care should be taken in evaluating the importance of the estimates, as the information available to estimate participation by residence will not fully reflect the distribution of regional and local impacts. For example, a vessel owner may not reside in the community that is used as a registered mailing address. In addition, participants in all sectors likely purchase inputs and hire crew from outside of their communities of residence. In addition, impacts of similar magnitudes will have differing importance with the size of the local and regional economy. Small communities could be greatly affected by impacts that are likely to go unnoticed in large cities.

Participants in the CGOA rockfish fisheries are from several different communities. CFEC vessel license files were used to estimate the participation by residency. Table 2-40 below shows catcher vessel landings by residency during the years 1996 to 2006. The table shows that Kodiak residents dominate the catcher vessel sector in the fishery. Substantial catches are made by residents of Washington and states other than Washington and Alaska.

As one of the largest ports of Alaska, vessels home ported in Kodiak participate in many of the State’s largest fisheries. Nearly 550 fishing permit holders and over 190 owners of federally permitted vessels resided in Kodiak as of 2008. In excess of 98,000 metric tons of groundfish were delivered into Kodiak in 2008. Of these groundfish landings, targeted CGO rockfish catch typically averaged approximately 6,600 metric tons on an annual basis from 1996 to 2006. Similarly, fewer than 50 of the over 450 Kodiak-based catcher vessels participated in the CGOA rockfish fisheries. In general, one may conclude that the CGOA rockfish fisheries are of relatively minor importance to the Kodiak-based fleet.

Table 2-40. Central Gulf of Alaska Rockfish Landings of Catcher Vessels by Place of Residence (1996-2006)

Year	Community	Pacific ocean perch		Northern rockfish		Pelagic shelf rockfish	
		Number of participants	Catch (mt)	Number of participants	Catch (mt)	Number of participants	Catch (mt)
1996	Kodiak	12	797.3	12	244.9	12	118.0
	Other Alaska						
	Washington	7	566.6	7	310.2	8	77.7
	Other State	9	859.6	8	336.8	8	146.8
1997	Kodiak	12	941.0	7	303.6	10	75.0
	Other Alaska						
	Washington	7	622.1	5	69.3	6	34.6
	Other State	8	761.0	7	386.1	8	108.1
1998	Kodiak	10	998.8**	10	605.7**	10	226.2**
	Other Alaska	1	*	1	*	1	*
	Washington	10	744.0	10	418.2	10	154.5
	Other State	10	849.3	10	862.7	10	297.1
1999	Kodiak	11	910.6**	11	795.9**	12	464.0**
	Other Alaska	1	*	1	*	1	*
	Washington	9	781.6	10	488.9	10	364.0
	Other State	10	831.2	10	701.7	10	539.9
2000	Kodiak	13	2110.2**	13	697.4**	13	996.4**
	Other Alaska	1	*	1	*	1	*
	Washington	7	885.7	7	369.9	7	524.2
	Other State	10	1,378.9	10	829.4	10	785.4
2001	Kodiak	12	1404.3**	12	588**	12	403.1**
	Other Alaska	1	*	1	*	1	*
	Washington	7	529.6	6	161.2	7	231.9
	Other State	13	2,012.9	12	651.8	14	673.6
2002	Kodiak	13	2057.3**	12	964.6**	13	558**
	Other Alaska	1	*	1	*	1	*
	Washington	7	710.6	6	245.5	7	240.9
	Other State	12	1,715.3	11	1,044.5	12	515.1
2003	Kodiak	13	2435**	11	1035.5**	11	581.3**
	Other Alaska	1	*	1	*	1	*
	Washington	6	719.3	5	438.9	6	252.6
	Other State	12	1,960.1	12	1,622.5	13	683.4
2004	Kodiak	12	2241.3**	10	876.1**	12	636.5**
	Other Alaska	1	*	1	*	1	*
	Washington	8	1,168.5	6	329.0	8	153.3
	Other State	11	1,569.0	10	1,036.4	10	538.5
2005	Kodiak	9	1987.5**	9	675.3**	9	459.1**
	Other Alaska	1	*	1	*	1	*
	Washington	7	1,000.7	6	400.3	7	312.4
	Other State	9	1,434.8	9	767.5	9	408.2
2006	Kodiak	10	1,578.8	8	522.7	10	207.3
	Other Alaska						
	Washington	7	1,088.9	7	599.6	7	304.3
	Other State	8	1,480.7	8	616.9	12	440.4

Source: CFEC

* Withheld for confidentiality

** Includes values for cells immediately below with data suppressed for confidentiality

Table 2-41 shows total landings by Kodiak-based vessels from 1995 to 2008. Table 2-42 shows total ex vessel gross revenues of Kodiak-based vessels from 1995 to 2008. Comparing the total catch and ex vessel revenues with catch and revenue from the rockfish fisheries, it is apparent that rockfish harvests are

a relatively small portion of the total fishing activity in Kodiak. Notwithstanding this apparently small contribution to overall catch of Kodiak catcher vessels, some participants report that the fishery is important to their operations. These participants suggest that the marginal income from the fishery is important to their overall returns. As such, the fishery could also be of some importance to the trawl catcher vessel contribution to the Kodiak economy to the extent that it is important to the operations of these Kodiak groundfish vessels.

Table 2-41. Landings by Kodiak vessel owners (in metric tons) (1995-2008)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Groundfish (fixed gear)	14,907	15,348	16,521	15,033	17,785	14,173	10,293	12,045	12,273	15,307	14,648	16,007	14,571	
Groundfish (Trawl)	58,778	59,685	55,673	53,626	49,592	46,912	45,056	44,130	44,886	47,407	45,847	45,082	43,717	
Halibut and Sablefish	4,070	4,667	5,984	5,906	6,164	6,036	6,038	5,711	5,587	5,571	5,260	4,972	4,844	1,027
Herring	4,626	5,519	6,521	5,919	4,337	3,628	3,820	4,121	3,619	4,285	5,409	5,330	4,524	8,640
Crab and Other Shellfish	5,353	5,625	9,228	17,160	13,770	3,410	3,059	3,111	3,029	2,717	3,097	2,920	3,177	5,984
Salmon	37,395	10,259	11,626	23,087	17,666	14,285	22,232	19,180	16,192	20,568	25,464	26,458	22,513	10,771
Total	125,129	101,104	105,552	120,731	109,314	88,445	90,497	88,298	85,586	95,854	99,726	100,770	93,346	26,422

Source: Fish ticket data

Table 2-42. Ex vessel gross revenue of Kodiak vessels (in \$1,000) (1995-2008)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Groundfish (fixed gear)	7,475	6,751	7,872	6,739	11,774	11,101	6,282	6,465	8,078	9,339	10,108	14,410	15,988	
Groundfish (Trawl)	14,519	13,790	14,992	10,208	13,929	13,182	11,189	10,421	11,100	11,202	13,449	14,024	14,142	
Halibut and Sablefish	17,794	21,912	27,861	16,859	27,443	32,264	26,113	27,369	33,766	33,470	31,974	38,196	41,268	6,403
Herring	5,139	6,599	2,127	2,129	2,144	1,192	1,503	1,329	1,152	1,563	2,166	1,056	1,526	3,566
Crab and Other Shellfish	29,137	23,736	24,953	29,868	41,366	19,400	17,239	19,866	20,075	18,333	18,552	12,240	18,279	31,651
Salmon	24,281	12,873	9,385	14,953	16,848	11,560	10,528	6,350	7,790	9,458	11,817	15,009	15,041	12,022
Total	98,346	85,661	87,191	80,756	113,504	88,699	72,854	71,801	81,960	83,365	88,066	94,936	106,244	53,641

Source: Fish ticket data

Table 2-43 shows first wholesale revenues of Kodiak processors by species from 1995 to 2008. Revenues from CGOA rockfish species are less than 5 percent of the annual first wholesale revenues of Kodiak processors. Additional revenues are realized through the processing of secondary species harvested in the rockfish fisheries, which add substantially to the revenues of the rockfish fisheries. Processing of catch from the CGOA rockfish fishery is a relatively small portion of processing in the Kodiak (less than 15 percent of total first wholesale revenues when secondary species revenues are included), the fishery does contribute to the overall stability of processing in the community. Prior to implementation of the rockfish pilot program in 2007, the role of the fishery was relatively minor, as the fishery was prosecuted for a very short time in the first few weeks of July. The timing of the rockfish fishery conflicted with the pink salmon fishery. Most of the rockfish processors also participated in the salmon fisheries and struggled to meet processing demands arising from the rockfish fisheries and salmon fisheries. These conflicting seasons were challenging for processors that wished to compete in both fisheries as they attempted to simultaneously maintain space and crews for both fisheries.

Table 2-43. First wholesale revenues of Kodiak processors by species (in dollars) (1995-2008)

Species	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Halibut and Sablefish	22,534,581	28,599,072	38,441,173	23,860,232	28,866,143	27,739,523	28,616,318	27,446,192	36,668,853	38,866,827	40,032,729	36,359,124	53,206,713	50,856,898
Herring	*	*	*	*	*	*	1,853,842	1,404,470	1,949,958	4,280,851	3,896,177	1,824,505	2,011,010	3,189,873
King and Tanner Crab	4,319,361	3,247,326	1,821,944	1,547,476	4,561,219	7,494,551	6,807,231	8,127,264	7,017,851	7,933,187	8,903,039	9,517,672	8,106,729	12,162,422
Other	15,445,273	23,507,376	17,990,934	10,497,012	7,559,822	11,861,139	6,203,485	9,040,910	8,689,755	7,695,883	12,379,790	17,369,994	24,967,802	31,162,869
Pollock and Pacific Cod	57,676,104	74,447,330	52,606,288	62,626,309	73,412,002	65,668,095	61,323,482	48,575,665	45,590,668	62,930,625	73,463,569	72,674,768	75,212,858	87,415,130
Salmon	96,396,201	56,820,206	49,208,829	70,522,442	61,990,607	60,272,913	60,539,810	34,569,861	43,148,424	43,771,152	57,308,997	60,445,594	70,109,452	58,239,415
Targeted Rockfish	28,963	962,729	2,008,478	4,053,122	2,215,397	3,100,475	3,245,692	4,445,649	5,241,932	4,460,907	5,407,450	9,720,564	6,708,945	4,233,388
Total	197,274,975	188,163,413	162,745,675	173,292,574	178,699,585	176,217,861	168,589,860	133,610,011	148,307,441	169,939,432	201,391,752	207,912,221	240,323,507	247,259,995

Source: COAR data

* Withheld for confidentiality

Kodiak's shoreplants have played a significant role in the history of community, influencing its economic and demographic patterns over the years. Even among the eight major contemporary processing plants there is a considerable amount of diversity in the size, volume, and species processed. It is this diversification that best characterizes Kodiak's ability to weather the ebbs and flows of an industry dependent upon changes in the viability of the resource being harvested, the market itself, and past/future regulatory shifts. Locally based processors vary in product output and specialization, ranging from large

quantity canning of salmon, processed at several different locations within Kodiak, to fresh and fresh-frozen products, as well as niche markets servicing the sports-fishing industry.

While the presence of local processing has been a constant in the community, individual operations have substantially different histories and have undergone a variety of changes in recent years. For example, among the large plants processing groundfish and salmon in the community, the facility now operated by Trident Seafoods centers around a converted World War II “Liberty Ship” that was reportedly brought to the community by previous owners (Alaska Packers) in the wake of the devastating 1964 earthquake to become the first plant up and running after that disaster. (This facility apparently later operated under the names All Alaskan and Tyson Seafoods before being acquired by its present owner.) Ocean Beauty, on the other hand, operates in a facility originally built in 1911, which was the oldest and largest seafood production facility in Kodiak when it was purchased in the 1960s. In 1967, B&B Fisheries opened its doors, which became Western Alaska Fisheries in the early 1970s, and is still in existence today. Ownership type also varies widely. For example, International Seafoods of Alaska (ISA) is a wholly owned subsidiary of True World Group, Inc., which is in turn owned by the Unification Church. In contrast, Alaska Fresh Seafoods (AFS), a smaller plant, has been in operation since 1978 and is owned, in part, by Kodiak and other Alaska fishermen.

All plants feature busy and slow periods during the year, but these peaks and valleys differ at least slightly for each processor, based upon the dependence of processor to fishery or the relationship between fleet and processor. This seasonal pattern has also changed with changes in the fisheries. For example, earlier (2004) interviews with processing plant personnel pointed out how the role of halibut has changed in terms of local processing since the implementation of the halibut IFQ management program, with three-quarters or more of all halibut going to market as a fresh product, as opposed to perhaps one-quarter before IFQs. This has not only changed the role of halibut in individual operations, it has also resulted in a different pattern of landings, with the economics of the fresh market favoring road-connected ports over Kodiak for at least some harvest areas. More recently, BSAI crab rationalization has shifted the periods when BSAI crab is run at the local processors.

With regard to the workforce among Kodiak processors, the large majority of plant workers in Kodiak are drawn from the local labor pool. While some workers still come to the community specifically for processing work opportunities, in the past 20 years, the importation of short-term workers by the processing companies themselves has become less and less common. As of 2008, among all major Kodiak plants, only Trident reports bringing workers into the community on a 6-month contract basis and providing them bunkhouse quarters, similar to the pattern seen in the years before the development of a large local workforce. In the not-too-distant past, Ocean Beauty and Western Alaska Fisheries both utilized bunkhouse facilities during peak seasons, but neither continues to do so. (Alaska Pacific Seafoods [APS] has retained a small bunkhouse, but this is used only as transitional housing for workers new to the community; ISA has a bunkhouse but rents out spaces to workers as a more-or-less traditional landlord rather than providing living quarters as part of a room-and-board living arrangement; Western Alaska Fisheries will rent housing on a temporary basis for transient student workers during peak seasons but otherwise does not provide housing for its workers.) This high reliance on the processing workers from a local labor pool differentiates Kodiak from other major processing communities in the southwestern part of the state, such as Unalaska, Akutan, King Cove, and Sand Point. Major processors in each of these communities still retain a relatively transient labor force approach to staffing processing plants. In January 2005, however, in a departure from the local pattern, Western did hire seasonal workers from outside the community for the early peak cod season but did not offer housing as part of the employment agreement. This ended up causing considerable concern in the community as, according to local newspaper accounts, about 80 people hired through Alaska Job Service in Anchorage arrived in the community prior to the start of the season without having made housing arrangements (despite knowing that they needed to do so) and without sufficient resources to care for themselves prior to earning their

first processing paycheck. This, in turn, proved to be a challenge for local service providers, as the unprepared workers utilized local shelters for immediate food and housing needs. While this may have been an isolated incident, it illustrates the continually changing nature of attempting to meet peak processing demands over time.

Since the program establishes a cooperative system with strong cooperative associations with historic processors and a limited access fishery that requires deliveries to processors meeting historic processing qualifications, deliveries in the main program have continued to be made to Kodiak processors. In addition, only Kodiak processors have participated in the entry level fishery by providing markets for entry level catcher vessels. As a result, all deliveries in the fishery have continued to be made to Kodiak under the pilot program. So, the community effects arising from implementation of the program have arisen from the changes in the Kodiak based activity.

Under the program, landings from the rockfish fishery are distributed over a substantially longer period of time than under the previous limited access management. This redistribution not only allows greater stability in landings from the Central Gulf rockfish fishery (limiting queuing by vessels), but has also allowed processors to coordinate rockfish landings with landings from other fisheries. Reducing these conflicts may benefit processing workers by limiting times they are without work, but may cost those workers some overtime pay. The slower pace of the rockfish fishery and the redistribution of landings may also benefit the community by having vessels and crews in Kodiak for longer periods of time during the year. Vessels making deliveries have less pressure to return quickly to the grounds to obtain a share of the available catch in the fisheries, so some likely remain in town for longer periods during which they use local services. The extent of this effect on the use of local services is not known.

In addition to benefits from the redistribution of landings over time, the community benefited from additional landings that were received as a result of the transfer of catcher processor quota to the catcher vessel sector. This increased both vessel activity based in Kodiak and deliveries to Kodiak shore plants.

For more details on the community of Kodiak, a complete community profile of the community is provided in Appendix A.

2.4 Analysis of the Alternatives

This section analyzes each of the alternatives, comparing the alternatives to each other and to the baseline condition in the fishery. Assessing the effects of the alternatives involves some degree of speculation. In general, the effects arise from the actions of individual participants in the fisheries under the incentives created by the different alternatives. Predictability of these individual actions and their effects is constrained by the novelty of the programs under consideration. While the experience under the pilot program sheds some light on potential individual responses, the differences between the alternatives under consideration here and the pilot program are substantial and should not be disregarded. In addition, unpredictable factors, such as conditions in different fisheries and of the different stocks and condition of the overall economy, could influence the responses of participants under the alternatives.

To examine the impacts of the alternatives, the analysis begins by looking at the allocations of primary rockfish species, secondary species, and halibut PSC to the different sectors. Several allocation options are under consideration, which directly affect the recipients of those allocations. The analysis of allocations includes an analysis of the proposed individual, vessel, cooperative, and processor caps. That section is followed by an analysis of the effects of the entry level fishery, which is prosecuted separately and analyzed separately from the main rockfish program to simplify, and provide a more coherent, analysis. Following these sections, the analysis considers the practices and participation in fishing and

processing that are likely to arise under the various management systems proposed by the alternatives. These differences in fishing and processing practices, together with the management changes, drive environmental, economic, and socioeconomic impacts.

2.4.1 Allocations

Under the status quo, no allocations are made to or within the defined sectors (i.e., catcher vessels and catcher processors). Under the program alternatives, the Council has adopted for analysis a variety of elements and options for defining allocations under the program. These include provisions defining allocations to sectors, general eligibility and qualified catch histories for license holders, general eligibility and qualifying processing histories for processors, eligibility and allocations for harvesting and processing participants in the trawl entry level fishery of the pilot program.²⁸ In all cases, the allocations would include primary rockfish species (Pacific ocean perch, northern rockfish, and pelagic shelf rockfish), secondary species (which may include shortraker rockfish, roughey rockfish, thornyhead rockfish, Pacific cod, and sablefish), and halibut PSC. This section analyzes the proposed allocations and the distributions of TACs between and within the sectors that would arise under those allocations.

In addition to the program allocations, the Council's alternatives include an Incidental Catch Allowance (ICA) that would be available to support incidental catch of rockfish in other directed fisheries and allocations to entry level fisheries. Those allocations are made prior to the allocation to the program and are discussed first in this section.

Incidental Catch Allowance

To ensure that other fisheries are not affected by the rockfish program, an ICA will be implemented to support rockfish incidental catch in other groundfish fisheries. In other directed groundfish fisheries, harvest of CGOA rockfish is limited by MRA (§679.20(e) and Table 10 to Part 679). The ICA would be set based on historic incidental harvest of CGOA rockfish in other directed fisheries in recent years. NOAA Fisheries will likely set the ICA liberally (i.e., relatively high) to ensure that incidental catch of CGOA rockfish does not result in a closure of other directed fisheries. Doing so would be consistent with existing fishing practices, since CGOA rockfish incidental catch has not historically resulted in closures of other directed groundfish fisheries.

Table 2-44 shows the annual total catch of Pacific ocean perch, pelagic shelf rockfish, and northern rockfish in the CGOA by trawl gear in the non-rockfish target.²⁹ Catch of all three rockfish species have fluctuated greatly during this time period. For example, the lowest incidental catch of pelagic shelf rockfish was in 2003, when only 41 metric tons were harvested, while in 2007, 225 metric tons was caught incidentally. With implementation of the rockfish pilot program in 2007, NOAA Fisheries set aside an ICA for the three primary rockfish species. Table 2-44 shows the rockfish ICAs for 2007, 2008, and 2009. As seen from the table, on many occasions, incidental catch exceeded the ICAs. Most recently, the incidental catch of Pacific ocean perch in 2009 was 407 metric tons, far exceeding the 200 metric ton

²⁸ LLP licenses do not have catch directly attributed therefore it is necessary to view the vessels that held a particular license at the time of the landing. LLP Transfer views were created to help track vessel association timelines for each LLP license and to determine which vessel historically possessed the license during a requested fishing time. Once the LLP Transfer view was established the landings are then attributed to the appropriate license based on the vessel that held the LLP at the time of the landing. The LLP endorsements of Central Gulf and Trawl were used in the CGOA Rockfish document with landings assigned as appropriate. In order to avoid duplication any vessel with multiple licenses in a given timeframe had the landings divided by the number of qualified licenses. Landings prior to 1/1/2000, the beginning of the LLP program, were credited to the original vessel.

²⁹ Since non-trawl catch of rockfish is very limited, incidental catch of rockfish by trawl gear in directed fisheries for other groundfish is adequate for determining the ICA.

ICA. In this case, the trawl catcher processor sector targeting rex sole accounted for 90 percent of the incidental catch of CGOA Pacific ocean perch. Combined with the directed catch of CGOA Pacific ocean perch, the total catch for the CGOA species is expected to exceed the ABC. Taking into account the variability of incidental catch and the increased ability of rockfish and Amendment 80 qualified catcher processors to top off, NOAA Fisheries will likely increase the ICAs for some of the rockfish species in the rockfish program. These increased allowances should be adequate to support incidental catch of rockfish in directed fisheries for other groundfish. Using these ICAs, the agency would manage harvest of CGOA rockfish in other groundfish fisheries using MRAs. If catch rates indicated that an allocation was not adequate to support incidental catch through the year, NOAA Fisheries would employ its usual management measure of putting a species on prohibited species status to deter incidental catch and prevent bycatch from resulting in a premature closure of other directed fisheries.

Table 2-44 Incidental catch and ICAs of Pacific ocean perch, pelagic shelf rockfish, and northern rockfish in CGOA trawl non-rockfish directed groundfish fisheries (2003-2009)

Species	2003	2004	2005	2006	2007		2008		2009		Average
	Incidental catch	ICA	Incidental catch	ICA	Incidental catch	ICA					
Pacific ocean perch	568	192	205	363	168	330	243	200	407	200	382
Pelagic shelf rockfish	41	42	44	171	225	100	86	100	76	100	126
Northern rockfish	53	116	33	201	208	120	178	100	51	100	152

Source: NMFS Catch Accounting data

Entry level allocation

Under the proposed action, there are three entry level fishery alternatives. The first is the no action alternative, under which management would revert to the LLP, which would allow any holder of an LLP license to enter a vessel in the rockfish fishery. The second alternative is the current entry level management structure under the rockfish pilot program. This entry level TAC is divided equally with half available to trawl gear participants and half available to fixed gear participants. The third entry level alternative would provide for only a fixed gear level fishery, with a TAC that fluctuates based on recent catches from that fishery.

2 Entry-level Set Aside (EL – all)

A percentage of CGOA POP, northern rockfish and pelagic shelf rockfish for catcher vessels not eligible to participate in the program.

2.1 Trawl and fixed gear entry level fisheries (EL – 2)

The annual set aside will be 5 percent of each of these target rockfish species.

Set-asides shall be apportioned at 50% for trawl gear and 50% for fixed gear.

The trawl sector's allocation by weight (based on the aggregate TAC for Pacific Ocean perch, Northern and pelagic shelf rockfish) shall first be Pacific Ocean perch.

Unharvested allocations to either sector shall be available to both sectors at the end of the third quarter.

The entry level fishery will be managed as a limited entry fishery.

Start dates for the entry level fishery should be January 1 for fixed gear and approximately May 1 for trawl gear.

2.1.2 Halibut PSC Limit Allocation

Prosecution of the entry level fishery will be supported by general allowance of halibut PSC to the gear type and the general allocations of secondary species.

Trawl halibut PSC options

- Option 1: If sufficient halibut PSC is not available at the start of the trawl gear fishery (May 1), the start date will be on the next release of halibut PSC.
- Option 2: If sufficient halibut PSC is not available at the start of the trawl gear fishery (May 1), halibut usage will be deducted against the following quarter's halibut PSC allowance.

Vessels that can participate in the entry level fishery are those vessels that did not qualify for the CGOA rockfish cooperative program. Before the beginning of each fishing year an application must be filed with NMFS by the interested vessel that includes a statement from a non-qualified processor confirming an available market.

Entry level fixed gear sector are exempt from VMS requirements.

2.2 Fixed gear only entry level fishery (EL-3)

The annual set aside will be;

- 1 – 10 mt of the POP TAC
- 1 - 10 mt of the northern rockfish TAC
- 10 - 30 mt of the pelagic shelf rockfish TAC.

If the entry-level fishery harvests 90% or more of their allocation of a species, the set-aside would increase by the amount of the initial allocation the following year:

- 1 - 10 mt POP
- 1 - 10 mt Northern rockfish
- 10 - 30 mt pelagic shelf rockfish

This increase would be capped at a maximum of:

POP

- d. 1%
- e. 3%
- f. 5%

Northern Rockfish

- d. 2%
- e. 3%
- f. 5%

Pelagic Shelf Rockfish

- a. 2.5%
- b. 3%
- c. 5%

The entry level fishery will be managed as a limited entry fishery.

Start date for the entry level fishery should be January 1.

Prosecution of the entry level fishery will be supported by general allowance of halibut PSC to the gear type and the general allocations of secondary species.

Any vessel or gear type exempt from CGOA LLP requirements or any holder of a CGOA fixed gear LLP may enter a vessel in the entry level fishery.

Entry level fixed gear sector are exempt from VMS requirements.

Entry level trawl/fixed gear fisheries – EL-2

Under Alternative 2, 5 percent of each of the target rockfish species is set aside for the entry level fisheries (approximately 700 metric tons at the current TACs). This set aside is divided between the trawl and fixed gear sectors such that each receives an equal allocation of the aggregated TACs of target rockfish species available to the entry level fisheries. Because of operational differences, the trawl sector would receive its portion of the aggregate TACs first from the entry level TAC of Pacific ocean perch. If the entry level Pacific ocean perch TAC is less than the total allocation to the trawl sector, the sector receives proportional shares of the entry level northern rockfish and pelagic shelf rockfish TACs, such that aggregate entry level TAC is divided equally between the two gear types.

The trawl allocation would be available for harvest by all applicants for the entry level program. Although the number of participants in this sector cannot be predicted, 203 LLP licenses are endorsed to use trawl gear in the CGOA. After removing the 43 to 53 qualified licenses, the number of potential licenses eligible to participate in the entry level fishery ranges from 150 to 160. Despite the large number of persons eligible for the fishery, the trawl fishery could draw few applicants as the allocation is relatively small and few potential participants have experience in the fishery.

The trawl fishery is scheduled to open on the 1st of May. There are two options that address insufficient halibut PSC on the opening of the entry level trawl fishery. Under the first option, if halibut PSC are unavailable on the opening, the opening would be delayed until the next release of halibut PSC. Under the second option, if sufficient halibut PSC is not available, the fishery would open with halibut usage being deducted from the following quarter's halibut PSC allowance. This second provision might provide participants in the entry level fishery with an opportunity to move fishing to earlier in the spring (as is intended by the May 1st opening) should halibut be unavailable at that time. This early opening might help entry level participants maintain operations in non-rockfish fisheries, which they may have participated in prior to the program. Whether allowing this continued participation in other fisheries should be considered, if the entry level trawl fishery is maintained. The Council should consider that entry level participants do receive a benefit from the fishery and modifying the timing of their harvests to ensure their participation in other fisheries may impose a burden on the remaining participants in those fisheries.

Given the potential for relatively small allocations to the fishery (approximately 350 tons of Pacific ocean perch), the ability of NOAA Fisheries to effectively manage the trawl portion of the entry level fishery could be limited, if a substantial number of applicants for the entry level trawl fishery are receive. For example, in the first year of the pilot program, only two trawl vessels participated in the entry level trawl fishery. Even with only two participants, the relatively small allocation to the fishery posed a management challenge. Since trawl vessels can harvest on the order of 100 metric tons in a day, timing a closure to avoid overharvests is very difficult. If several vessels enter the fishery, it is likely that managers would have to close the fishery or use short openings of 24 hours or less. **Management of the small allocation to trawl vessels in the entry level fishery is likely to be problematic under this alternative. If the Council wishes to proceed with an alternative for a trawl entry level fishery, alternative management approaches might be beneficial and provide greater entry opportunities.**

The fixed gear allocation would be available for harvest by any fixed gear vessel eligible to target Central Gulf of Alaska rockfish (because of its assigned license or an exemption from the license requirement) that applies for the fishery. Any catches with fixed gear (including incidental catches and catches from State waters when the federal fishery is open) would be counted against the entry level allocation (as has happened for the pilot program's entry level fishery). The allocation to the sector would remain at 2.5 percent of the total target rockfish, which would be the remainder of the allocation of total entry level allocation (i.e., 5 percent of each species) after the allocation to the trawl entry level fishery. By

prioritizing the Pacific ocean perch allocation to the trawl fishery, the program should allocate more pelagic shelf rockfish and northern rockfish to the fixed gear fishery. Those species are believed to be easier to target with fixed gear than Pacific ocean perch.

Historically, non-trawl vessels have very minimal participation in the CGOA target rockfish fisheries. Despite the CGOA rockfish fisheries opening on January 1st, the fixed gear harvests never exceeded 30 metric tons of all target species combined during the 1996 to 2008 period. During each of the first three years of the rockfish pilot program, a single vessel registered for the fixed gear entry level fishery. This vessel only had harvests from the entry level allocation in 2007. In the 2009 fishery, the allocations to the entry level fishery were 120 metric tons of Pacific ocean perch, 115 metric tons of northern rockfish, and 157 metric tons of pelagic shelf rockfish. These allocations greatly exceed historic harvests of with fixed gear. To avoid leaving this allocation unharvested, any TAC remaining is available for harvest by trawl entry level fishery participants after the 3rd quarter (beginning on October 1st). Under the pilot program, the effectiveness of this provision has been inconsistent, as in some years, the trawl entry level vessels have elected not to target rockfish after the 3rd quarter. Consequently, it is possible that continuing this management of the fishery could leave a substantial portion of the allocation to the fixed gear entry level fishery (possibly in excess of 350 metric tons) unharvested.

Fixed gear only fishery – EL-3

Under Alternative 3, only fixed gear sector would receive an entry level allocation of the primary rockfish species. The starting entry level set aside under this alternative would be between 1 and 10 metric tons of Pacific ocean perch, between 1 and 10 metric tons of northern rockfish, and between 10 and 30 metric tons of pelagic shelf rockfish.

Limiting the entry level fishery to fixed gear vessels would resolve complications associated with the entry level trawl fishery. As noted in Alternative 2, the relatively small allocation to a trawl limited access fishery is difficult to manage. Not including trawl participants in the entry level fishery eliminates the potential for that trawl effort to result in the TAC being exceeded. Reducing the initial set aside for the fixed gear CGOA rockfish could also reduce stranded CGOA rockfish TAC. Allowing the set aside to increase with increases in catches by the fixed gear sector would also allow for entry (and growth in the sector) as is contemplated by the set aside, while limiting the potential for a large share of the TAC to be stranded, should the fixed gear sector continue to harvest only small amounts of rockfish.

While the range of proposed set asides for each of the primary rockfish species under this alternative (particularly when compared to Alternative 2) are reflective of the historical catches of the fixed gear participants, **allocations less than 5 metric tons for Pacific ocean perch and northern rockfish could be very difficult to manage. Consequently, if the Council wishes to support an entry level fishery for these species, it should make allocations of 5 million metric tons or more. Otherwise, NOAA Fisheries is unlikely to open the fisheries.**

This alternative also includes provision for the increase of the fixed gear entry level allocation as harvests increase. As defined in the option, if the fixed gear entry level participants harvest 90 percent or more of their allocation of a rockfish species in a year, the set-aside of that species would be increased by the amount of its initial allocation. Allocation increases would be capped at a maximum of between 1 percent and 5 percent of Pacific ocean perch TAC (or between 100 metric tons and 500 metric tons of Pacific ocean perch, at current TAC levels), between 2 percent and 5 percent of northern rockfish TAC (or between approximately 50 metric tons and 115 metric tons of northern rockfish, at current TAC levels), and between 2.5 and 5 percent of pelagic shelf rockfish TAC (or between approximately 70 metric tons and 160 metric tons of pelagic shelf rockfish, at current TAC levels). The use of a relatively small starting fixed gear allocation (more reflective of historic catches) and a mechanism for increasing the allocations

with growth in the sector could help prevent stranding a portion of the TAC, which would occur, if the allocation to the fixed gear sector was disproportionate to their catches. Selecting an appropriate cap for growth of the fixed gear entry level fishery requires a balancing of the interests of participants in the primary program with the interest of allowing for expansion of the entry level fishery.

The Council should consider that a relative small initial allocation would establish a relatively small incremental increase for the sector. A small initial allocation paired with a relatively large cap would allow opportunity for expansion of the sector, but that growth would be contained by the magnitude of the increase. As a consequence, growth to the cap could only occur over a period of many years. Whether this system of small increases with a relatively large cap should be considered a functional measure depends on whether the Council believes that the fixed gear sector has potential for fast growth (which would outpace the growth in the allocation) and whether the Council believes that containing the rate of growth might be appropriate. Recent effort in the sector suggests that the sector has limited capacity for growth, in the absence of a substantial change in effort or catching power.

Prosecution of the entry level fishery under this alternative will be supported by the general allowance of halibut PSC to fixed gear. Catch of all other species would be governed by existing rules to control bycatch (i.e., MRAs, and bycatch status management). Unlike Alternative 2, participants in this fixed gear only entry level fishery would not need to register for the fishery. This may improve entry into these fisheries by removing an application deadline that prevents unanticipated midseason entry. Any vessel or gear type exempt from CGOA LLP requirements or any holder of a CGOA fixed gear LLP may enter a vessel in the fishery. The entry level fishery would be prosecuted as a competitive limited access fishery opening on January 1st each year. Although the limited access fishery will be managed similarly to other competitive fisheries in the Gulf of Alaska, a race for fish that dissipates rents is not likely (at least initially).

Program allocations

Primary rockfish species allocations to each sector would be based on the aggregate allocations to its sector members. These allocations within a sector are based on retained catch (excluding landings processed into meal) of vessels using an eligible license in the sector during the qualifying years. Different years could be used for each species by each license for determining the allocation to maximize the allocation attributable to that license. There are four different year combinations:

- 1996-2002 with each license dropping its 2 lowest years,
- 1998-2006 with each license dropping its 2 lowest years,
- 1998-2006 with each license dropping its 4 lowest years, and
- 2000-2006 with each license dropping its 2 lowest years.

Permanent LLP licenses used by a vessel to make a targeted landing of CGOA rockfish during the applicable qualifying period are eligible for the program. All in-season rockfish harvests made using an eligible LLP license would be counted toward that license's allocation. Under an option, a permanent license that was not used in the fishery could be eligible for the program, if the vessel to which that permanent license is assigned had targeted rockfish landings using an interim license that was later withdrawn, provided the permanent license has been continuously assigned to the vessels since December 31, 2003. The history of the rockfish targeting vessel would then be assigned to the permanent license eligible under this provision.

3 Program eligibility (CP – all and CV – all)

The eligibility for entry into the cooperative program is one targeted landing of POP, Northern rockfish or PSR caught in CGOA during the qualifying period using a CGOA trawl LLP license.

Option: In addition, the following participants would be eligible to enter the program:

those persons whose vessel had one targeted landing of POP, northern rockfish or PSR caught in CGOA during the qualifying period with interim trawl CGOA license that was later determined to be an invalid trawl CGOA endorsement, but who acquired a valid CGOA trawl license prior to December 31, 2003, which has been continuously assigned to the vessel with the target landing since acquired until the date of final Council action.

4 Qualified catch (CP – all and CV – all)

4.1 Basis for the allocation to the LLP license holder is the catch history of the vessel on which the LLP license is based and shall be on a fishery-by-fishery basis. The underlying principle of this program is one history per license. In cases where the fishing privileges (i.e., moratorium qualification or LLP license) of an LLP qualifying vessel have been transferred, the allocation of harvest shares to the LLP shall be based on the aggregate catch histories of (1) the vessel on which LLP license was based up to the date of transfer, and (2) the vessel owned or controlled by the LLP license holder and identified by the license holder as having been operated under the fishing privileges of the LLP qualifying vessel after the date of transfer. (Only one catch history per LLP license.)

Option: For licenses qualified based on catch of a vessel using an interim license, the basis for the allocation will be the catch history of such vessel, notwithstanding the invalidity of the interim Central Gulf trawl LLP endorsement under which the vessel operated during the qualifying period. History allocated under this provision shall be assigned to the LLP license.

4.2 Catch history will be the history during the following qualifying period:

- 1) 1996-2002 (drop two) Alt. 2
- 2) 1998-2006 (drop two or four)
- 3) 2000-2006 (drop two)

4.3 Qualified target species history is allocated based on retained catch (excluding meal) during the rockfish target fishery. Different years may be used (or dropped) for determining the history of each of the three rockfish species

7 Sector allocations (CP – all and CV – all)

7.1 Target rockfish species

Catch history is determined by the sector's qualified catch in pounds as a proportion of the total qualified catch in pounds.

Sector allocations of target rockfish species are based on individual qualified vessel histories applying any applicable drop year provision at the vessel level.

Full retention of the target rockfish species required

7.2 Secondary species

Secondary species history is allocated based on retained catch of the species while targeting rockfish over retained catch in all fisheries.

7.2.1 Except as provided below, history will be allocated to each sector for the following secondary species:

sablefish,
shortraker rockfish
rougheye rockfish,
thornyhead rockfish, and
Pacific cod.

7.2.3 Except as otherwise provided below, secondary species allocations will be based on: The sector's average annual percentage of retained catch of the secondary species by the rockfish target

fisheries during the qualifying period. For each qualifying year calculate the sector's retained catch of the species in the target rockfish fisheries divided by the retained catch of all CGOA fisheries. Sum these percentages and divided by the number of qualifying years. The calculated average annual percentage is multiplied by the secondary species TAC for that fishery year and allocated to each sector in the cooperative program.

7.2.5 Exceptions:

Shortraker and rougheye

For shortraker and rougheye:

For the CP sector:

a shortraker allocation of the TAC will be:

Option 1a: 30.03 percent

Option 1b: 50 percent

To be managed as a hard cap, and a rougheye allocation of 58.87% of the TAC, to be managed as a hard cap.

Option 2: shortraker and rougheye will be managed with a combined MRA of 2%.

For the CV sector, shortraker and rougheye should be managed with a combined MRA of 2 percent. If harvest of shortraker by the CV sector reaches 9.72% of the shortraker TAC, then shortraker should go on PSC status for that sector.

Sablefish and Pacific cod

For the catcher processor sector, Pacific cod history will be managed by MRA of 4 percent.

Option 1: No directed fishing for secondary species Pacific cod and sablefish

Option 2: Manage Pacific cod and sablefish under a modified MRA.

Participants must retain all allocated secondary species and stop fishing when cap is reached.

7.3 Prohibited species (halibut mortality)

Option 1: Allocation to the rockfish cooperative program will be based on historic average usage, calculated by dividing the total number of metric tons of halibut mortality in the CGOA rockfish target fisheries during the qualifying years by the number of years. This allocation will be divided between sectors based on the relative amount of target rockfish species allocated to each sector (e.g., the sector's share of total qualified catch).

Option 2: Allocation to the rockfish cooperative program will be based on historic average usage in the first three years of the rockfish pilot program, calculated by dividing the total number of metric tons of halibut mortality in the CGOA rockfish target fisheries during those years by the number of years.

Option 3: Allocation to the rockfish cooperative program will be based on the historic average usage, calculated as:

- 3) 50 percent of the total number of metric tons of halibut mortality in the CGOA rockfish target fisheries during the qualifying years divided by the number of qualifying years plus
- 4) 50 percent of the total number of metric tons of halibut mortality in the first three years of the rockfish pilot program divided by three (i.e., the number of years).

Option for supplementing the last seasonal halibut apportionment for trawl gear

10, 25, 50, 75, or 100 percent of any allocation of halibut PSC that has not been utilized by November 15 or after the declaration to terminate fishing will be added to the last seasonal apportionment for trawl gear during the current fishing year. The remaining portion of any allocation will remain unavailable for use.

Primary rockfish allocations

Table 2-45 shows the allocations to the trawl catcher processor sector and the trawl catcher vessel sector for the 4 different year qualification combinations. Overall, more recent qualifying year combinations results in higher allocations for the trawl catcher vessel sector. For example, the estimated allocation to

the trawl catcher vessel sector for Pacific ocean perch using 1996-2002 is 54 percent, while the estimated allocation using 2000-2006 is 62 percent. This change in the distribution between the sectors may be explained, in part, by the number of catcher processors participating in the fishery in recent years. Since 2000, no more than 11 catcher processors have participated in the fishery in any year.

Using the 1996 – 2002 (drop 2) qualifying years, the trawl catcher vessel sector would be allocated 64 percent of the northern rockfish fishery, 54 percent of the Pacific ocean perch fishery, and 48 percent of the pelagic shelf rockfish (in each case, after the allocation to the entry level fishery and the ICA). Applying these allocation percentages to the 2009 TAC yields an allocation of 1,414 metric tons for northern rockfish, 4,323 metric tons for Pacific ocean perch, and 1,571 for pelagic shelf rockfish. The trawl catcher processor sector would be allocated the remainder, 36 percent of the northern rockfish fishery, 54 percent of the Pacific ocean perch rockfish fishery, and 52 percent of the pelagic shelf rockfish fishery. Again, applying these percentages to the 2009 TAC for these rockfish species yields an allocation of 794 metric tons for northern rockfish, 3,723 metric tons for Pacific ocean perch, and 1,733 metric tons for pelagic shelf rockfish.

The qualifying year options 1998-2006 (drop 2) and 1998-2006 (drop 4) resulted in allocations that are almost identical to one another. As seen in Table 2-45, the difference in the allocations was roughly 1 percent or less depending on the species. Looking specifically at 1998-2006 (drop 2), the trawl catch vessel sector would be allocated 63 percent of the northern rockfish fishery, 60 percent of the Pacific ocean perch fishery, and 58 percent of the pelagic shelf rockfish fishery. For the trawl catcher processors, the allocations would be 37 percent for northern rockfish, 41 percent for Pacific ocean perch, and 42 percent for pelagic shelf rockfish. Applying the 2009 TAC to these allocations, the catcher vessels would be allocated 1,399 metric tons of northern rockfish, 4,791 metric tons of Pacific ocean perch, and 1,903 metric tons of pelagic shelf rockfish. Catcher processors would be allocated 809 metric tons of northern rockfish, 3,255 metric tons of Pacific ocean perch, and 1,401 metric tons of pelagic shelf rockfish.

Under the 2000-2006 (drop 2) qualifying year option, the trawl catcher vessel sector would be allocated 61 percent of the northern rockfish fishery, 62 percent of the Pacific ocean perch fishery, and 63 percent of the pelagic shelf rockfish fishery. Catcher processors would be allocated 39 percent of the northern rockfish fishery, 38 percent of the Pacific ocean perch fishery, and 38 percent of the pelagic shelf rockfish fishery.

Table 2-45. Sector participation, qualified landings, allocation percent, and estimated allocation based on 2009 TAC of Central Gulf of Alaska rockfish

Qualifying year	Species	Sector	License count	Total qualifying landings (mt)	Allocation percent	Allocation using 2009 TAC* (mt)
1996-2002 (drop 2)	All	CP	14	31,457	47.3	6,411
		CV	49	36,256	52.7	7,147
	Northern rockfish	CP	13	5,827	37.4	825
		CV	48	9,771	62.6	1,383
	Pacific ocean perch	CP	13	17,721	47.6	3,826
		CV	49	19,544	52.4	4,220
	Pelagic shelf rockfish	CP	14	7,909	53.3	1,760
		CV	48	6,941	46.7	1,544
1998-2006 (drop 2)	All	CP	13	41,635	41.2	5,592
		CV	53	60,329	58.8	7,966
	Northern rockfish	CP	13	9,958	38.0	839
		CV	52	16,263	62.0	1,369
	Pacific ocean perch	CP	13	23,393	41.4	3,331
		CV	53	33,113	58.6	4,715
	Pelagic shelf rockfish	CP	13	8,285	43.1	1,423
		CV	52	10,953	56.9	1,881
1998-2006 (drop 4)	All	CP	13	35,082	40.4	5,478
		CV	53	52,310	59.6	8,080
	Northern rockfish	CP	13	9,076	38.8	856
		CV	52	14,335	61.2	1,352
	Pacific ocean perch	CP	13	18,807	39.9	3,210
		CV	53	28,339	60.1	4,836
	Pelagic shelf rockfish	CP	13	7,199	42.8	1,413
		CV	52	9,637	57.2	1,891
2000-2006 (drop 2)	All	CP	12	30,368	38.7	5,249
		CV	44	47,714	61.3	8,309
	Northern rockfish	CP	12	8,254	40.0	883
		CV	43	12,387	60.0	1,325
	Pacific ocean perch	CP	11	16,786	38.7	3,110
		CV	43	26,637	61.3	4,936
	Pelagic shelf rockfish	CP	12	5,328	38.0	1,256
		CV	44	8,691	62.0	2,048

Source: Alaska Department of Fish and Game for CV data and WPR for CP data

* Note that a 100 mt ICA was deducted for northern rockfish, and pelagic shelf rockfish TAC, while 200 mt ICA was deducted from Pacific ocean perch TAC

** Used for determining sector allocations for secondary species and halibut PSC

After a sector's allocation is determined, allocations would be made to eligible LLP license holders within the sector. Table 2-46 shows the numbers of eligible LLP licenses in the trawl catcher vessel and trawl catcher processor sectors in the different rockfish fisheries and simple statistics concerning their allocations between sector members including allocations based on the 2009 TACs.

Table 2-46. Mean, median, and four largest allocations by Central Gulf of Alaska rockfish species

Qualifying Year	Species	Sector	License count	Mean allocation (%)	Median allocation (%)	Average of four largest allocations (%)	Allocation using 2009 CQ (mt)		
							Mean	Median	Average of four largest allocations
1996-2002 (drop 2)	Northern rockfish	CP	13	7.7	4.8	14.9	63	39	123
		CV	48	2.1	1.4	7.2	29	20	99
	Pacific ocean perch	CP	13	7.7	5.6	15.9	294	215	607
		CV	49	2.0	1.6	4.5	86	67	190
	Pelagic shelf rockfish	CP	14	7.1	4.2	17.4	126	75	307
		CV	48	2.1	1.7	6.6	32	26	102
1998-2006 (drop 2)	Northern rockfish	CP	13	7.7	1.1	18.6	65	9	156
		CV	52	1.9	1.5	7.6	26	21	104
	Pacific ocean perch	CP	13	7.7	3.6	20.4	256	120	679
		CV	53	1.9	1.7	4.9	89	79	230
	Pelagic shelf rockfish	CP	13	7.7	2.8	19.8	109	39	282
		CV	52	1.9	1.5	6.7	36	29	126
1998-2006 (drop 4)	Northern rockfish	CP	13	7.7	1.2	18.1	66	10	155
		CV	52	1.9	1.7	7.0	26	23	94
	Pacific ocean perch	CP	13	7.7	4.5	19.3	247	144	619
		CV	53	1.9	1.8	4.6	91	85	224
	Pelagic shelf rockfish	CP	13	7.7	3.2	19.2	109	45	271
		CV	52	1.9	1.6	6.2	36	31	117
2000-2006 (drop 2)	Northern rockfish	CP	12	8.3	5.2	19.1	74	46	169
		CV	43	2.3	2.2	7.8	31	30	104
	Pacific ocean perch	CP	11	9.1	5.3	21.3	283	164	662
		CV	43	2.3	2.1	4.9	115	106	242
	Pelagic shelf rockfish	CP	12	8.3	3.5	19.8	105	44	249
		CV	44	2.3	1.9	6.6	47	39	136

Source: Alaska Department of Fish and Game for CV data and WPR for CP data

* Note: Assumes no processor allocation of harvest shares

The distribution of catcher processor and catcher vessel allocations in the different rockfish fisheries for the qualifying year combinations are shown in Figure 1 through Figure 4, respectively. Allocations are aggregated into groups of four to maintain confidentiality, with vessel groupings made in descending order from the largest estimated allocation to the smallest allocation. The last and smallest groupings contains between 4 and 7 estimated allocations, since at least 4 persons' activities must be included under confidentiality rules. The estimated allocation shown for each 4-vessel group is the average allocation to members of that group. Allocations are shown as shares of the total allocation to the respective sector. Each legend shows the total number of vessels that would receive an allocation in each fishery. Because allocations are averages, it is possible, particularly in the groupings with the largest allocation, that the largest allocation to a single vessel is significantly different from the average of those four vessels.

Comparing the distributions of catcher processor allocations using the different qualifying year options, the most obvious difference is the increase in the size of the highest four allocations as more recent qualifying years are used. As seen in Figure 2-4, the four largest allocations using 1996-2002 option average between 15 and 17 percent of total allocation depending on the species. The four largest allocations using the 1998-2006 year combination (Figure 2-6 and Figure 2-7) average slightly less than 20 percent of the total allocation (depending on the species), while the four largest allocations using 2000-2006 (Figure 2-7) average approximately 20 percent of the total allocation. Looking at the smallest allocations, using the 1996-2002 option, approximately 5 participants in the sector would receive allocations that average approximately 2 percent of the sector's northern rockfish and Pacific ocean perch, while approximately 6 participants in the sector would receive allocations that also average 2 percent of the sector's pelagic shelf rockfish. Under the 1998-2006 options, 5 participants would receive allocations that average less 1 percent for each of the rockfish species. Finally, using 2000-2006, 4 participants would receive allocations less than 1 percent.

Figure 2-4. Allocations of catcher processors by Central Gulf of Alaska rockfish species, 1996-2002 (drop 2)

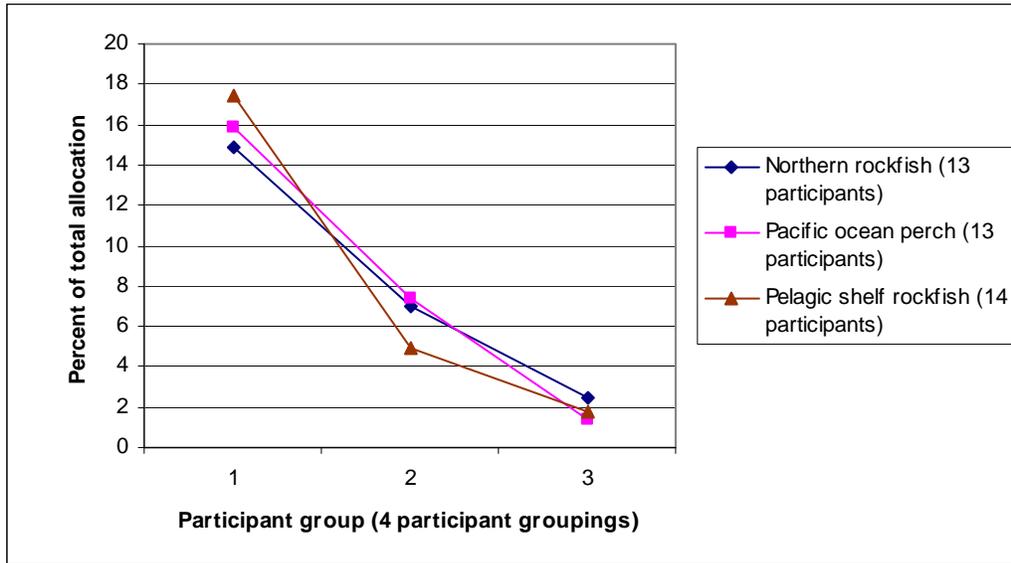


Figure 2-5. Allocations of catcher processors by Central Gulf of Alaska rockfish species, 1998-2006 (drop 2)

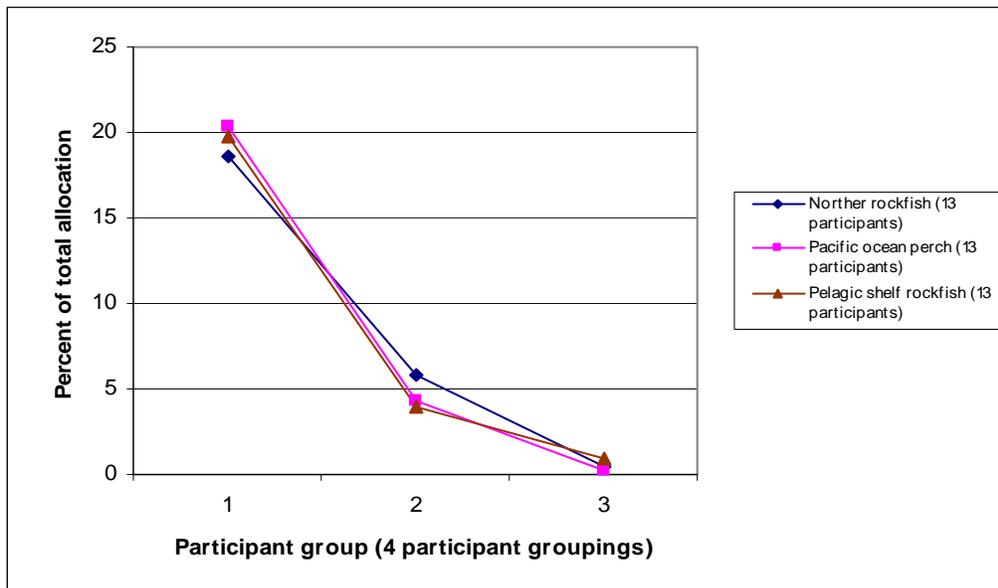


Figure 2-6. Allocations of catcher processors by Central Gulf of Alaska rockfish species, 1998-2006 (drop 4)

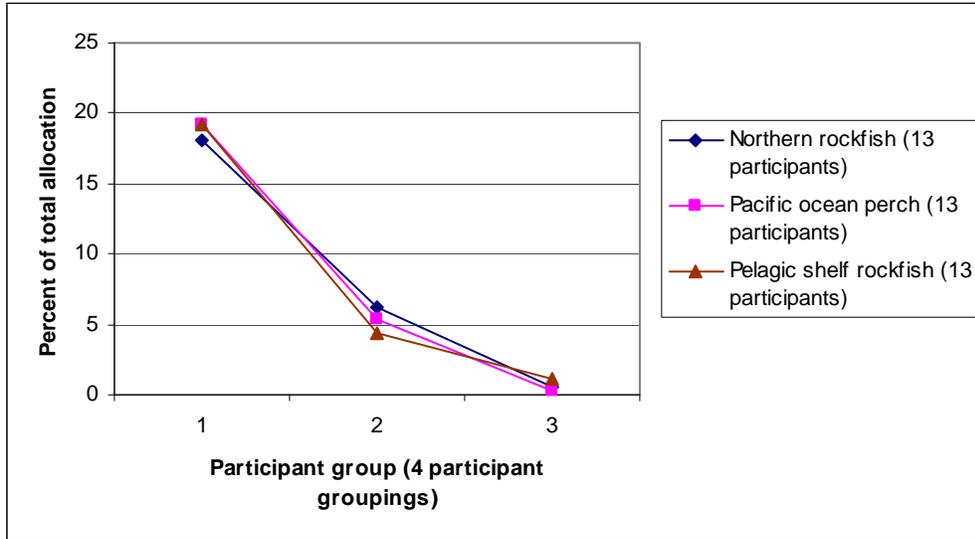
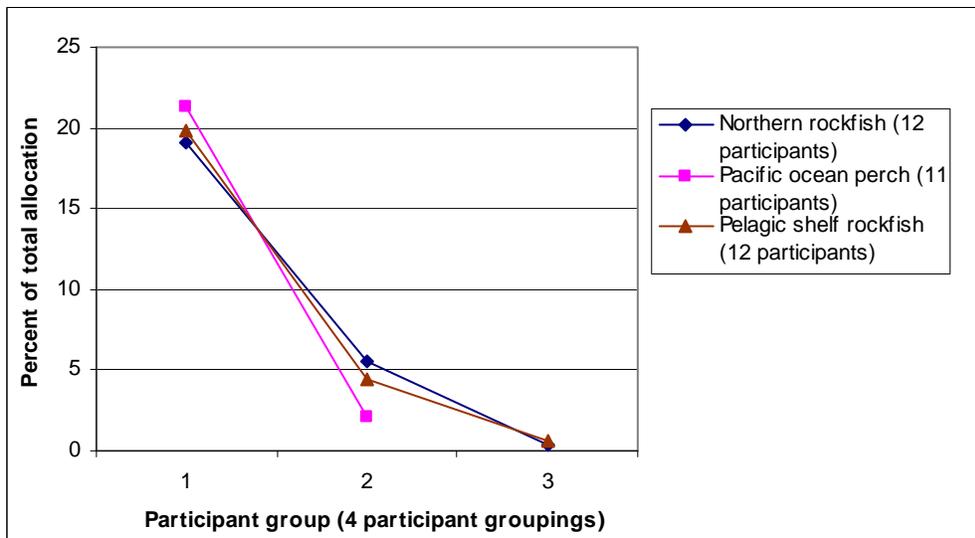


Figure 2-7. Allocations of catcher processors by Central Gulf of Alaska rockfish species, 2000-2006 (drop 2)



The distribution of catcher vessel share allocations in the different target fisheries are shown in Figure 2-8 through Figure 2-11. Unlike the allocation distribution of the catcher processors, allocations to catcher vessels are more evenly distributed across participants. The allocation distributions of the four different qualifying year combinations maintain a fairly consistent pattern. The four largest allocations for northern rockfish average between 7 and 8 percent for each of the different year combinations, slightly less than 5 percent for Pacific ocean perch, and between 6 and 7 percent for pelagic shelf rockfish. Looking at the smallest allocations, between 4 and 7 participants would receive average allocations of each rockfish species well below 1 percent under each of the 4 different year combinations.

Figure 2-8. Allocations of catcher vessels by Central Gulf of Alaska rockfish species, 1996-2002 (drop 2)

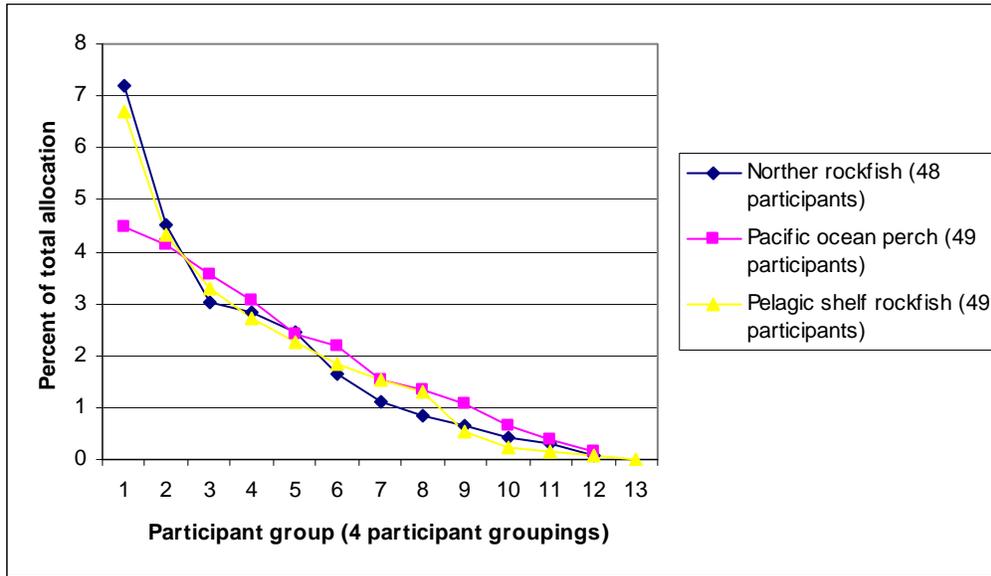


Figure 2-9. Allocations of catcher vessels by Central Gulf of Alaska rockfish species, 1998-2006 (drop 2)

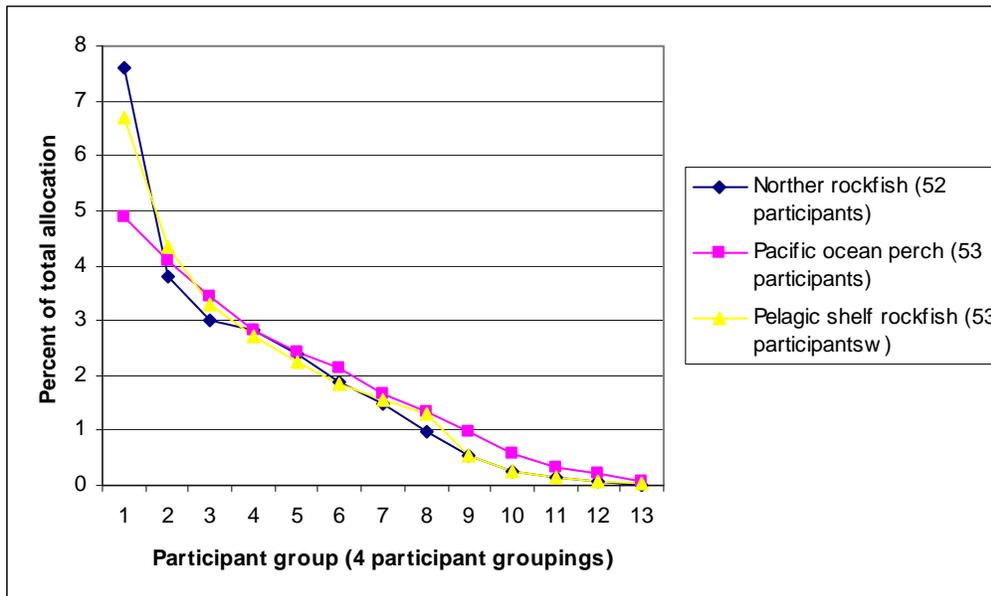


Figure 2-10. Allocations of catcher vessels by Central Gulf of Alaska rockfish species, 1998-2006 (drop 4)

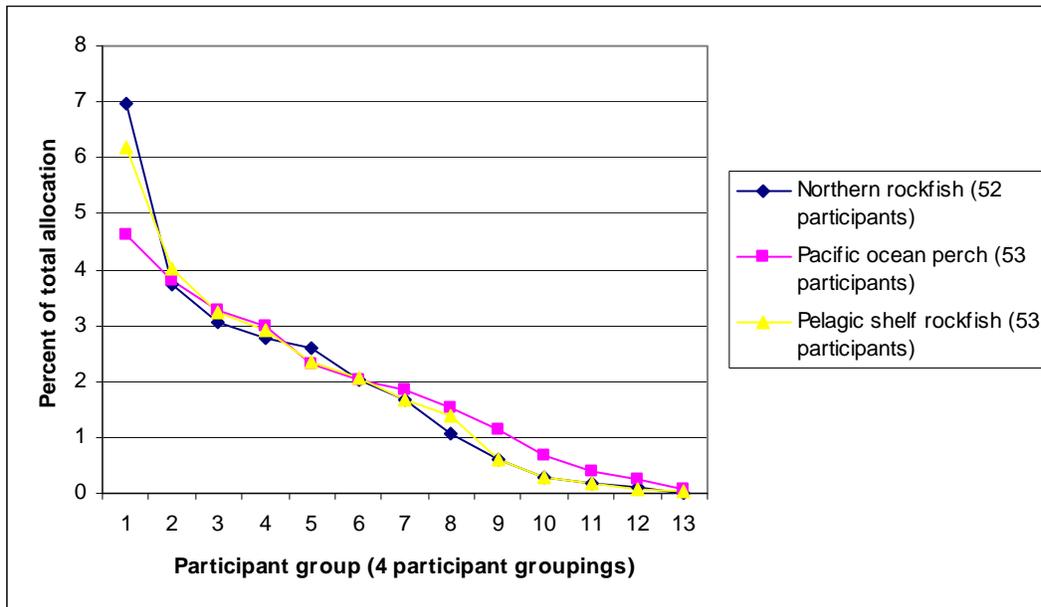
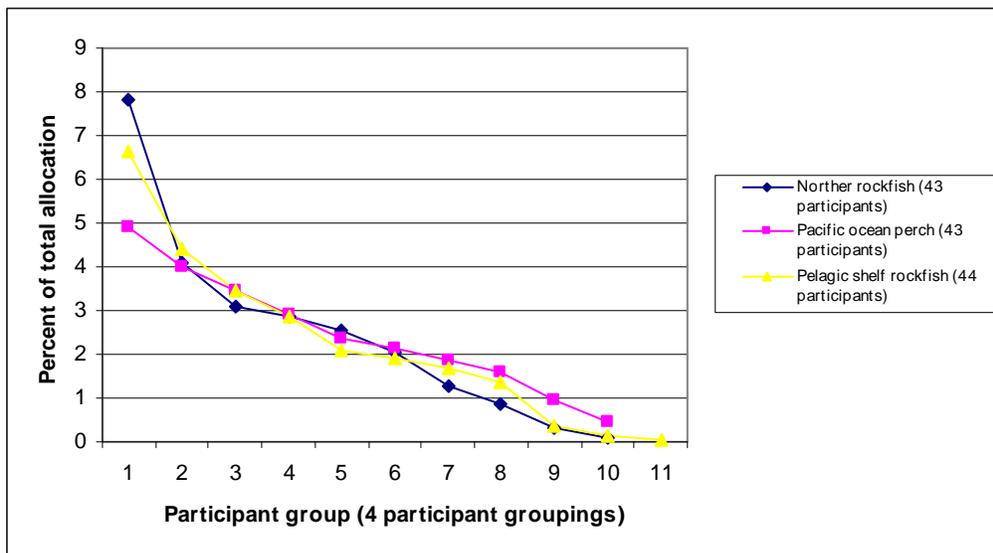


Figure 2-11. Allocations of catcher vessels by Central Gulf of Alaska rockfish species, 2000-2006 (drop 4)



The motion also includes an “interim license option” that would qualify a permanent license for the program provided that license was assigned to vessel by December 31, 2003 and that the vessel fished in the rockfish fishery with an interim license during the qualifying period. Using these criteria, three catcher vessel licenses and no catcher processor licenses appear to qualify for the provision based on the earliest qualifying period (1996 – 2002). This estimate is based on the number of vessels that have targeted rockfish catch in the qualifying period that did not receive a Central Gulf endorsed LLP, but have since assigned one to the vessel. One of the two vessels with interim license history participated in all seven qualifying years; another participated in six of the seven years, while the last participated in only one of the qualifying years. All three vessels also are estimated to qualify based on the 1998 – 2006 qualifying year options, with one vessel having participation in seven years, another having participation

in 4 years, and the last vessel participating in one qualifying year. Under the 2000 – 2006 qualifying year option, two vessels are estimated to qualify. One vessel participated in 5 of these years, while the other participated in two years. Since only three vessels appear to qualify for the provision, no information concerning catch amounts of these vessels can be released.

In administering this provision, the Council should consider whether its objective is simply to include these licenses in the program, or to qualify catch history of vessels that fished with interim licenses that were later replaced with permanent licenses. In some cases (particularly, if the Council selects recent qualifying years), it is possible that a license will qualify for the program after being assigned to a vessel with considerable catch history using an interim license. If the Council would like to use the provision to allow these license holders to receive credit for vessels that established histories using an interim license, the provision would need to be revised to allow the history of a vessel that fished with an interim license to be credited to a permanent license that qualifies for the program.

In considering this action, the Council should consider the effects of the action on the allocations of both primary rockfish and other species allocated under the program. The allocation of primary rockfish to the program is made after first deducting an incidental catch allowance to support rockfish catch in other fisheries and an entry level set aside to support that fishery. The creation of eligibility for additional licenses by this action would not affect those allocations. The portion of the rockfish TAC remaining after these deductions is divided between the two sectors that participate in the rockfish program (the catcher vessel sector and the catcher processor sector) and is then divided among cooperatives and the limited access fisheries. These sector cooperative and limited access allocations of the different primary rockfish species are all proportional allocations based on the respective primary rockfish species quota share holdings of participants in the sectors, cooperatives, and limited access fisheries. Consequently, the qualification of additional licenses and history for the program would have the effect of redistributing a portion of the primary rockfish allocations under the program to the sector, cooperative, or limited access fishery of the newly qualified participants. So, the effect of new qualification on the primary rockfish allocations would be to dilute the allocations to participants qualified under the general qualification provision based on the proportion of newly qualified history, but that redistribution would be in proportion to the qualified catches of these vessels. Similarly, allocations of secondary species would be proportionally redistributed, but only within the sector (as neither sector's allocation would be affected). The overall allocation of halibut to the program would be unaffected, but the distribution of that allocation between the sectors and within the sector of the licenses would be affected slightly by the additional primary rockfish qualifying history. In all cases, the effect is likely to be minor as it will be dissipated across participants in the sector.

Sector allocations of secondary species

In addition to the rockfish allocations, allocations would be made to the catcher processors sector and catcher vessel sector for secondary species that are typically harvested when harvesting rockfish. The allocations of secondary species would be based on catch of the secondary species while targeting rockfish. Specifically, the allocation would be a portion of the TAC equal to the average annual percentage of the total retained catch of the secondary species made by the sector. In other words, a sector would be allocated the average of its annual retained catch from the rockfish fishery divided by total retained catch from the CGOA during the qualifying years. The annual allocation to the sector would be this percentage times the annual TAC for that secondary species. Table 2-47 shows the portion of each secondary species TAC that would be allocated to the different sectors, assuming that all qualified participants join a cooperative (i.e., the maximum allocation to the sector). Comparison of target rockfish ex vessel and wholesale prices with ex vessel and wholesale prices for the secondary species show that these species typically sell for substantially higher prices than target rockfish. Under the LLP, participants

in the rockfish fisheries typically boosted revenues by intentionally catching secondary species (as permitted by MRAs).

Table 2-47. Secondary species allocation by sector

Qualifying Year	Species	Sector	Retained catch (mt)	Average percent	Allocation using 2009 CQ (mt)***
1996-2002	Pacific cod	CP	617	0.2	55
		CV	4,379	2.0	478
	Sablefish	CP	1,924	4.5	226
		CV	2,514	5.9	295
	Shortraker/rougheye	CP	2,574	44.5	511
		CV	261	4.4	50
Thornyhead rockfish**	CP	641	17.1	147	
	CV	322	8.2	70	
1998-2006	Pacific cod	CP	982	0.4	85
		CV	8,112	3.3	770
	Rougheye rockfish*	CP	2,391	37.3	311
		CV	285	7.0	58
	Sablefish	CP	2,231	4.0	199
		CV	3,659	6.4	323
	Shortraker rockfish*	CP	2,554	43.9	138
		CV	271	5.0	16
Thornyhead rockfish	CP	1,129	23.6	203	
	CV	385	7.8	67	
2000-2006	Pacific cod	CP	585	0.3	78
		CV	6,978	3.8	901
	Rougheye rockfish*	CP	1,700	34.7	289
		CV	226	7.8	65
	Sablefish	CP	1,575	3.5	176
		CV	3,050	6.8	341
	Shortraker rockfish*	CP	1,863	43.2	136
		CV	212	5.3	17
Thornyhead rockfish	CP	954	26.5	228	
	CV	280	7.8	67	

Source: ADF&G Fish Tickets for CV data and WPR for CP data

* Prior to 2005, shortraker and rougheye rockfish were managed in the Central Gulf under an aggregate TAC, as a result, in years prior to 2005 aggregate shortraker and rougheye catch were used in the catch calculation

** Prior to 1998, thornyhead rockfish were managed Gulfwide so 1996 and 1997 catch were omitted from this calculation

*** Assumes all qualified participants join a cooperative

Catcher processors allocations of Pacific cod are relatively small, ranging from a low of 0.2 using 1996-2002 years to high of 0.4 percent using 1998-2006 years, while allocations to the catcher vessels would be substantially larger ranging from 2 percent using 1996-2002 to 3.8 percent using 2000-2006. Given the historic low harvest of Pacific cod by catcher processors in the rockfish fishery, the Council when developing the pilot program, chose to manage the Pacific cod for the catcher processors under a revised MRA of 4 percent – a level substantially lower than the 20 percent Pacific cod MRA under the LLP. This lower MRA is intended to allow for reasonable Pacific cod retention by catcher processors, without constraining their harvests of primary rockfish allocations. The Council motion would extend this management for the catcher processor sector under all program alternatives.

Sablefish allocations to the catcher vessel sector range from 5.9 percent using 1996-2002 years to 6.8 percent using 2000-2006 years. For the catcher processor sector, allocations of sablefish would range from a low of 3.5 percent using 2000-2006 years to a high of 4.5 percent using 1996-2002 years. Under all of the options, the catcher processor sector would receive a larger allocation of thornyhead rockfish compared to the catcher vessel sector. The estimated catcher processor allocations range from a low of 17.1 percent using 1996-2002 years to a high of 26.5 percent using 2000-2006 years. For catcher vessel sector, the allocations range from a low of 7.8 percent using 1998-2006 years to a high of 8.2 percent using 1996-2002 years.

Alternative Pacific cod and Sablefish Management

Currently in the pilot program, the catcher vessel sector receives allocations of Pacific cod and sablefish; the catcher processor sector receives an allocation of sablefish, while its Pacific cod catch is managed under a reduced MRA of 4 percent. The sector allocations of Pacific cod and sablefish are based on the average annual percentage of total CGOA retained catch in the rockfish fishery during the qualifying years.

At the June 2009 Council meeting, the Council adopted for consideration, the two options that would modify management of Pacific cod and sablefish catches in the program. Under the first, no directed fishing of these species would be permitted. Under the second, both species would be managed under a modified MRA. The specific MRA level is not indicated in the option.

A prohibition on directed fishing is likely to decrease the value of any sablefish and Pacific cod harvested from the rockfish fishery. One of the benefits of exclusive allocations is that participants are able to pattern their fishing to receive the greatest benefit from these allocations. As a result, several times in the first two years of the program, catcher vessels took trips targeting Pacific cod and sablefish (see Table 2-48). By limiting their catch of rockfish in these trips, harvesters (particularly catcher vessels) are able to increase quality of catch and both reduce costs of traveling to the different grounds and sorting costs needed to limiting the extent of mixing of Pacific cod and sablefish with rockfish, the spines of which can damage more fragile fish. Over 75 percent of the Pacific cod and over 50 of the sablefish of the catcher vessel sector were caught during catcher vessel non-rockfish target trips. During these trips few rockfish were harvested.³⁰ Although the catch of sablefish and Pacific cod in this manner may be viewed by some as beyond the scope of the rockfish fishery, harvests of these species have remained at, or below, their historic levels in the rockfish fishery. In addition, these practices bring additional value to catch. It is unclear whether any benefit could come from a prohibition on targeting Pacific cod and sablefish in the absence of other changes, as prohibition of targeting would likely decrease quality of landings and drive up sorting and operating costs.

³⁰ Some primary rockfish are harvested during these trips that are non-rockfish targets, as MRAs for shorttraker and rougheye rockfish use only catch of primary rockfish as the basis for determining the MRA poundage.

Table 2-48. Catcher vessel trips and catch by trip target (2007 and 2008).

Target	Vessels with at least one trip in the target		Total trips in the target		Species caught in the target	Catch (in metric tons)		Percent of total catch of the species	
	2007	2008	2007	2008		2007	2008	2007	2008
Pacific cod	10	12	11	13	Pacific Ocean Perch	5.2	13.2	0.1	0.3
					Northern Rockfish	0.9	2.2	0.0	0.2
					Pelagic Shelf Rockfish	0.4	13.5	0.0	0.8
					Pacific Cod	207.1	429.9	74.7	75.7
					Sablefish	30.5	53.6	6.6	13.5
Rockfish	25	26	130	112	Pacific Ocean Perch	4,145.3	4,477.5	99.5	99.4
					Northern Rockfish	2,000.1	1,343.7	100.0	99.7
					Pelagic Shelf Rockfish	1,577.0	1,578.1	99.9	98.9
					Pacific Cod	54.5	137.3	19.6	24.2
					Sablefish	205.7	128.2	44.2	32.4
Sablefish	14	13	16	17	Pacific Ocean Perch	16.1	12.9	0.4	0.3
					Northern Rockfish	0.0	1.8	0.0	0.1
					Pelagic Shelf Rockfish	0.9	3.6	0.1	0.2
					Pacific Cod	15.7	0.7	5.7	0.1
					Sablefish	229.1	214.3	49.2	54.1

Source: NMFS Catch Accounting Data.

In addition to a possible prohibition on targeting Pacific cod and sablefish by vessels fishing rockfish program allocations, the Council included an option to manage these secondary species under a modified MRA (which in addition to affecting the manner and amount of harvests would also operate as an effective prohibition on targeting). Under MRA management, rockfish vessels exceeding the MRA at any point in a trip would be required to discard catches above the MRA. While MRA would limit directed fishing for these species, MRA management may have some undesirable effects. MRAs can contribute to discards. As currently applied in the Gulf, an MRA requires discards of each that exceed the prescribed level at any time. So, a vessel that catches an unexpected amount of an MRA species early in a trip may be forced to discard, even if the catch would be retainable at a later time in the trip. For valuable species, an MRA may induce a vessel to catch up to the maximum amount, knowing that overharvest of the MRA by be discarded without risk of penalty. These added discards are avoided under species allocations, since all catch counts against the allocation.

MRAs can also contribute to excessive harvests of a species. Since an MRA limits only retention, requiring vessels to discard above the retainable amount, they do not limit harvest of a species. For species of value that are fully utilized, establishing an MRA in a fishery prosecuted with exclusive allocations and an extended season could increase harvests relative to MRA harvests in a limited access race for fish. Persons able to harvest the MRA in conjunction with exclusive allocations may be under less time pressure to harvest the MRA species than persons fishing in a limited access race for fish, where harvest of the basis species could be constrained.

As written, the option does not include a modified MRA level. Under the LLP, the MRA for Pacific cod was 20 percent in rockfish fisheries, while the MRA for sablefish was 7 percent. The catcher processor sector and the catcher vessel limited access fishery operate under a reduced MRA of 4 percent for Pacific cod and both sectors' limited access fisheries operate under a reduced MRA of 3 percent for sablefish. Table 2-49 provides catch rates of Pacific cod and sablefish relative to the primary rockfish allocations for the catcher vessel and catcher processor sectors. These rates show catches of Pacific cod and sablefish relative to the cooperative rockfish allocations; or the effective retention rates of Pacific cod and sablefish relative to rockfish allocations, which would be considered basis species under an MRA.³¹ In the catcher vessel sector, Pacific cod catches have been substantially below the historic MRA (of 20 percent) and are

³¹ Catch and allocation amounts for the catcher processors sector does not include catch or allocation amounts from the limited access fishery.

below Pacific cod catch rates observed in the qualifying years (which averaged between 8.6 percent and 10.7 percent of rockfish catch). Sablefish catch rates under the program also appear to be slightly lower than qualifying year rates, which averaged between 5.5 percent and 6.2 percent of rockfish catches (see Table 2-50).

Table 2-49. Cooperative Catch and catch rate of Pacific cod and sablefish relative to primary rockfish allocations in the CGOA rockfish fisheries (2007 and 2008)

Year	Sector	Species	Catch* (in metric tons)	Allocation of primary rockfish**	Catch rate of secondary species relative to rockfish allocations including transfers
2007	Catcher vessel	Pacific Cod	271.9	8,436.4	3.2
	Catcher processor	Sablefish	453.8		5.4
2008	Catcher vessel	Pacific Cod	568.0	8,192.5	6.9
		Sablefish	396.1		4.8
	Catcher processor	Sablefish	66.7	1,986.0	3.4

Source: NMFS Catch Accounting data

* Catch and allocation amounts for the catcher processors sector does not include catch or allocation amounts from the limited access fishery.

** Allocations for the catcher vessels include transfers, while allocations for catcher processors exclude transfers.

Table 2-50. Retained catch and current retainable percentages for vessels targeting Central Gulf of Alaska rockfish for three qualifying periods

Qualifying Years	Sector	Target rockfish catch (metric tons)	Pacific cod				Shortraker/rougheye			
			Catch (metric tons)	Percent of target rockfish	Retainable percentage	Maximum retainable amount	Catch (metric tons)	Percent of target rockfish	Retainable percentage	Maximum retainable amount
1996-2002	CV	41,063.9	4,401.4	10.7	20.0	8,212.8	261.3	0.6	15.0	6,159.6
	CP	40,653.0	617.5	1.5	20.0	8,130.6	2,573.9	6.3	15.0	6,098.0
	Total	81,717.0	5,018.8	6.1	20.0	16,343.4	2,835.2	3.5	15.0	12,257.5
1998-2006	CV	66,882.1	8,157.0	10.0	20.0	13,376.4	305.1	0.4	15.0	10,032.3
	CP	51,334.7	982.3	1.2	20.0	10,266.9	2,573.6	3.1	15.0	7,700.2
	Total	118,216.7	9,139.3	11.2	20.0	23,643.3	2,878.7	3.5	15.0	17,732.5
2000-2006	CV	55,847.7	7,022.4	8.6	20.0	11,169.5	246.3	0.3	15.0	8,377.2
	CP	36,733.4	584.6	0.7	20.0	7,346.7	1,882.9	2.3	15.0	5,510.0
	Total	92,581.1	7,607.0	9.3	20.0	18,516.2	2,129.2	2.6	15.0	13,887.2

Qualifying Years	Sector	Thornyhead				Sablefish			
		Catch (metric tons)	Percent of target rockfish	Retainable percentage	Maximum retainable amount	Catch (metric tons)	Percent of target rockfish	Retainable percentage	Maximum retainable amount
1996-2002	CV	333.7	0.8	15.0	6,159.6	2,528.3	6.2	7.0	2,874.5
	CP	641.4	1.6	15.0	6,098.0	1,924.1	4.7	7.0	2,845.7
	Total	975.1	1.2	15.0	12,257.5	4,452.4	5.4	7.0	5,720.2
1998-2006	CV	396.4	0.6	15.0	10,032.3	3,680.3	5.5	7.0	4,681.7
	CP	1,128.8	2.2	15.0	7,700.2	2,231.2	4.3	7.0	3,593.4
	Total	1,525.2	1.3	15.0	17,732.5	5,911.5	5.0	7.0	8,275.2
2000-2006	CV	280.9	0.5	15.0	8,377.2	3,065.9	5.5	7.0	3,909.3
	CP	953.7	2.6	15.0	5,510.0	1,575.1	4.3	7.0	2,571.3
	Total	1,234.6	1.3	15.0	13,887.2	4,641.0	5.0	7.0	6,480.7

Source: CP data from WPR and CV data from ADF&G Fish Tickets

If the Council elects to use a modified MRA, it should consider several factors, beginning with its purpose for reverting to MRA management. A reduced MRA may be used to constrain targeting (or intentional incidental catch). The extent to which pilot program participants have used allocations to target Pacific cod and sablefish (rather than to support incidental catches) suggests that those species could be avoided, if the Council adopts management measures to create an incentive for avoidance. This reduced MRA would benefit other fisheries that harvest Pacific cod and sablefish, shifting catches from the rockfish fishery to other target fisheries, but could be argued to be unfair to participants in the rockfish fishery who have a long history of reliance on Pacific cod and sablefish catches to support their rockfish operations. Given the high value of Pacific cod and sablefish (relative to rockfish), a substantial reduction

in permitted retention of Pacific cod and sablefish would have a notable effect on the economics of the rockfish fishery.

In the current rockfish program, discards of allocated species are prohibited. Consequently, no discards of Pacific cod or sablefish by catcher vessels or sablefish by catcher processors are permitted. Under MRA management, discards of these species would be permitted and may be required, if the MRA is exceeded. This discard requirement applies at all times, so a vessel could be required to discard Pacific cod or sablefish, if a tow early in a trip yields a disproportionate amount of those species, regardless of whether the vessel has substantial basis species catches later in the trip.³² The potential of an MRA to contribute to discards, together with the increase in sorting costs to prevent mixing of Pacific cod and sablefish with rockfish in the hold, suggest that changing to MRA management or a prohibition on targeting may not be the best way to constrain harvests of Pacific cod and sablefish by the rockfish fishery.

Sector allocations of shortraker rockfish and rougheye rockfish

Three options are under consideration for managing shortraker rockfish in the catcher processor sector. Two of these options would manage shortraker as an allocated secondary species, with allocations of either 30.03 percent or 50 percent. The third option would combine shortraker rockfish and rougheye rockfish managing those species using a maximum retainable allowance percentage of 2 percent. Catcher vessel sector participants are subject to a 2 percent MRA applicable to aggregate retention of shortraker rockfish and rougheye rockfish. In addition, if the sector's harvest of shortraker rockfish reaches 9.72 percent of the TAC, that species would go on PSC status for the sector, under which any retention is prohibited.

Estimation of allocations of shortraker rockfish and rougheye rockfish under the options requires some interpretation as historical management of these species affects the information. Prior to 2005, shortraker rockfish and rougheye rockfish were managed based on an aggregate TAC, with relatively limited distinction of catch by species. So, for qualifying years prior to 2005, history is credited to both species based on aggregate catches of the two species. This results in the 1996-2002 qualifying year option allocation is the same for both species, while the 1998-2006 and 2000-2006 qualifying year options distinguish allocations of the two species based on catch differentials for the two in 2005 and 2006. Allocations for the catcher vessels are relatively small compared to the catcher processor sector ranging from 4.4 percent of both species using 1996-2002 qualifying years to a high of 7.8 percent for rougheye rockfish and 5.3 percent of shortraker rockfish using 2000-2006 qualifying years. For catcher processors, allocations ranged from a 34.7 for rougheye rockfish and 43.2 percent for shortraker rockfish using 2000-2006 qualifying years to a high of 44.5 percent based on aggregated catches in the 1996-2002 qualifying years.

Several factors should be considered in assessing the various allocation options. Both the process followed by the Council in the development of pilot program allocations and the performance of the fishery under those allocations shed light on these factors. During development of the original rockfish pilot program, the Council first considered allocation of shortraker rockfish and rougheye rockfish based solely on aggregate catches of the two species during the qualifying period. Each sector would then receive an allocation for each species by applying its share of the historic aggregate catch of the two species to each of the two species TACs. Based on that calculation, the catcher processor sector would receive approximately 60 percent each TAC, while the catcher vessel sector would have received approximately 6 percent of each TAC. Although the species were historically managed under an MRA,

³² If the Council elects to develop MRA management of these species, it could consider a provision that would apply an MRA only at the end of a trip (or week, in the case of catcher processors). Such an approach might be more suitable to an allocated fishery, in which the availability of basis catches to support MRA retention is more certain than in a limited access derby.

managers expressed concern that catches of shortraker exceeded rougheye catches, while shortraker stocks were less abundant. To address potential pressure on the shortraker stock, the Council also considered an option to credit only 75 percent of the catch history of the catcher processors sector in determining its allocation, effectively reducing the allocations to approximately 45 percent of the combined TACs. In considering this allocation, the Council expressed concern that the relatively high history based allocation of these species could leave the stocks vulnerable, if other catches increased in other fisheries under the MRAs.³³

In part, to avoid possible overharvests, the Council elected to use more precise and limiting management allocating catcher processors 30.03 percent of the Central Gulf shortraker TAC and 58.87 percent of the Central rougheye TAC. Each catcher processor cooperative receives a percentage of each of those allocations equal to its percentage of the sector's primary rockfish species quota shares. Sector members that choose to fish in the limited access fishery do not receive an allocation. Instead, limited access participants in the current rockfish pilot program are limited by a maximum retainable amount of combined shortraker rockfish and rougheye rockfish equal to 2 percent of catch of primary rockfish, the same MRA percentage applicable to catcher vessels in the current rockfish pilot program.

Under the pilot program rules, allowable catches of shortraker and rougheye by catcher processors in the program differs with catcher processor sector choices of whether to enter a cooperative or fish in the limited access fishery (see Table 2-51 and Table 2-52). Generally, catcher processors are permitted to retain more shortraker rockfish and rougheye rockfish, if they join cooperatives. So, maximum retained catch by the sector would be permitted, if all catcher processors chose to join cooperatives. Yet, since discards are permitted by participants in the limited access, it is possible that total catches of shortraker rockfish and rougheye rockfish could be greater if a large number of catcher processors chose to join the limited access, and participants in the limited access have substantial discards. Since all catcher vessels in the program are subject to an aggregate MRA that limits only retained catch and does not distinguish catch by species, no such difference in allowable retention arises in that sector.

In the first year of the rockfish pilot program, catcher processors participated in both cooperatives and the limited access fishery. The choice of some catcher processors to participate in the limited access fishery reduced the permitted retained catch of the two species by over 150 metric tons. Yet, some catcher processors are reported to have been reluctant to join cooperatives because of the potential that the constraining shortraker and rougheye rockfish allocations would limit their ability to harvest primary species. Included in the proposed action is an option to increase the allocation of shortraker to cooperatives from 30.03 percent to 50 percent or to manage shortraker and rougheye rockfish under a combined MRA of 2 percent for catcher processors fishing in a cooperative. This change in the management of shortraker and rougheye rockfish could eliminate any perceived constraint these species' allocations could have on the harvest of the primary species.

Notwithstanding the reluctance of some catcher processors to join a cooperative, during each of the first two years of the pilot program, total catch of shortraker and rougheye in the limited access was approximately 10 metric tons less than the amount that could be retained under the MRA—substantially less than would have been permitted had these catcher processors elected to participate in cooperatives. In the first year of the program catcher vessels harvested less than 10 percent of the maximum amount permitted by their MRA, but in the second year the sector's catches increase to almost one-third of the amount permitted by the MRA. Overall, catches of both species in the rockfish fisheries during the first two years of the pilot program were less than historical catches (see Table 2-53). In addition, catches in

³³ In most fisheries (other than the primary rockfish fisheries) the MRA of aggregate shortaker rockfish/rougheye rockfish is 7 percent.

the first two years of the program were a relatively smaller portion of the total allowable catch, although the distribution of that catch between the two sectors varied across years.

Table 2-51. Maximum permitted catches and actual catch of shortraker and rougheye rockfish in 2007

shtrkrngheye 2007		Catcher processor	Catcher vessels	Total
Maximum permitted catches under various co-op membership scenarios	Maximum sector shortraker allocation	106*	NA	
	Maximum sector rougheye allocation	360*	NA	
	Maximum sector catch of MRA shortraker and rougheye - aggregate	192**	204	
	Maximum retained catch of shortraker and rougheye			669
Maximum permitted catches under first year co-op memberships	Allocation of shortraker to cooperatives	60		
	Allocation of rougheye to cooperatives	203		
	Maximum MRA catch of shortraker and rougheye - aggregate	41	204	
	Maximum retained catch of shortraker and rougheye			508
Catches in the first year	Total catch of shortraker by cooperatives	44	9	
	Total catch of rougheye by cooperatives	11	10	
	Total catch of shortraker and rougheye by limited access	32		
	Total catch of shortraker and rougheye			106

Sources: NMFS Catch Accounting data and cooperative reports

Notes: MRA amounts assume that allocations of primary species are harvested in their entirety. MRAs limit only retained catch, so maximum catch under an MRA excludes potential discards. Total catch amounts include discards and retained catch.

* Maximum allocation to cooperatives, if all catcher processors join a cooperative.

** Maximum possible MRA catch, if all catcher processors join the limited access fishery.

Table 2-52. Maximum permitted catches and actual catch of shortraker and rougheye rockfish in 2008

shtrkrngheye 2008		Catcher processor	Catcher vessels	Total
Maximum permitted catches under various co-op membership scenarios	Maximum sector shortraker allocation	95.0*	NA	
	Maximum sector rougheye allocation	491.0*	NA	
	Maximum sector catch of MRA shortraker and rougheye - aggregate	123.8**	132.5	
	Maximum retained catch of shortraker and rougheye			718.5
Maximum permitted catches under second year co-op memberships	Allocation of shortraker to cooperatives	48.0		
	Allocation of rougheye to cooperatives	251.0		
	Maximum MRA catch of shortraker and rougheye - aggregate	61.9	132.5	
	Maximum retained catch of shortraker and rougheye			493.4
Catches in the second year	Total catch of shortraker by cooperatives	28.7	32.0	
	Total catch of rougheye by cooperatives	6.9	15.0	
	Total catch of shortraker and rougheye by limited access	54.4		
	Total catch of shortraker and rougheye			106.2

Source: NMFS Catch Accounting data

Notes: MRA amounts assume that allocations of primary species are harvested in their entirety. MRAs limit only retained catch, so maximum

* Maximum allocation to cooperatives, if all catcher processors join a cooperative.

** Maximum possible MRA catch, if all catcher processors join the limited access fishery.

During the first two years of the pilot program, rockfish fishery catches of shortraker rockfish were half of their historic levels (see Table 2-53, Table 2-54, and Table 2-55). While rockfish fishery catch of shortraker declined in 2007 and 2008, overall catches of shortraker rockfish in the Central Gulf was down in 2007, but then increased in 2008. In 2008, catch of shortraker outside the rockfish fishery was more than double the catch attributed to the rockfish fisheries. Prior to 2007, catch of shortraker in the rockfish fishery exceeded catches from other fisheries. Whether this increase in shortraker catches by vessels outside the rockfish fishery will persist is not known. Yet, the possible increasing shortraker catches of vessels outside the rockfish fishery should be considered in determining an appropriate allocation to program participants.

Table 2-53. Total allowable catches and total catches of shortraker rockfish and rougheye rockfish in the Central Gulf rockfish fisheries (2005-2008)

Year	Species	Total allowable catch	Catcher processor sector		Catcher vessel sector		Total	
			Catch (in metric tons)	Percent of the total allowable catch	Catch (in metric tons)	Percent of the total allowable catch	Catch (in metric tons)	Percent of the total allowable catch
2005	Shortraker rockfish	324	127	39	19	6	146	45
	Rougheye rockfish	557	48	9	9	2	57	10
2006	Shortraker rockfish	353	145	41	14	4	159	45
	Rougheye rockfish	608	5	1	30	5	35	6
2007	Shortraker rockfish	353	63	18	4	1	67	19
	Rougheye rockfish	611	19	3	6	1	25	4
2008	Shortraker rockfish	315	57	18	32	10	89	28
	Rougheye rockfish	834	33	4	15	2	49	6

Source: NMFS Catch Accounting.

Table 2-54. Catches and total allowable catches of shortraker rockfish and rougheye rockfish in all Central Gulf fisheries (2005-2008)

Year	Shortraker rockfish			Rougheye rockfish		
	Catch (in metric tons)	Total allowable catch (in metric tons)	Percent of total allowable catch harvested	Catch (in metric tons)	Total allowable catch (in metric tons)	Percent of total allowable catch harvested
2005	223	324	68.8	122	557	21.9
2006	303	353	85.8	134	608	22.0
2007	158	353	44.8	178	611	29.1
2008	244	315	77.5	190	834	22.8

Source: NMFS Catch reports (2005-2008).

Note: Prior to 2005, shortraker rockfish and rougheye rockfish were managed using an aggregate total allowable catch

Table 2-55. Catch of shortraker rockfish in all Central Gulf fisheries by gear and sector (2005-2008)

Year	Shortraker TAC	Catcher processor				Catcher vessels				Total	
		Rockfish program (mt)	Hook & line (mt)	Trawl-outside rockfish program (mt)	Total (mt)	Rockfish program (mt)	Hook & line* (mt)	Trawl-outside rockfish program (mt)	Total (mt)	Rockfish program (mt)	Outside rockfish program (mt)
2005	324	127	19	14	161	19	38	7	64	146	78
2006	353	145	8	18	171	14	97	51	163	159	175
2007	353	63	15	7	85	4	49	67	120	67	138
2008	315	57	25	8	91	32	84	38	154	89	155

Source: NMFS Catch Accounting

*Jig and pot catch totals were included with hook and line catch numbers to protect confidential data.

Under the first option for modifying management of shortraker, the maximum allocation to catcher processor cooperatives would be increased to 50 percent of the shortraker TAC. In the second year of the program, catches of shortraker by catcher vessels in the rockfish fishery were 10 percent of the TAC,³⁴ while catches outside of the program were nearly 50 percent of the shortraker TAC (see Table 2-55). Both catcher vessel rockfish fishery catches and catches outside of the rockfish fishery reached their highest percentage of the shortraker TAC since management of shortraker was separated from rougheye management in 2005.³⁵ At these catch levels, if catcher processors were to receive an increased

³⁴ This catch of shortraker rockfish effectively equals the maximum percent permitted by the sector prior to managers putting the species on PSC status for the catcher vessels sector (i.e., 9.72 percent).

³⁵ Prior to separation of management of the two species, aggregate harvests of shortraker and rougheye outside the rockfish fishery never exceeded 50 percent of the aggregate TAC.

allocation in the program and all vessels joined cooperatives, catches by program catcher vessels and non-rockfish fisheries would need to be constrained to prevent overharvest of the shortraker TAC. In all likelihood, managers would put shortraker on PSC status, if needed to limit total catch, to prevent any retention of shortraker in non-rockfish fisheries (and possibly in the catcher vessel sector of the rockfish fishery). In season managers regularly take such actions to manage catches, so such a limitation would not be extraordinary. Although these measures are believed to effectively protect stocks from overharvest, they also can result in discards of the species, an undesirable consequence, especially for a species of concern with a relatively high value, such as shortraker.

Under the second option for shortraker management, all participants in the catcher processor sector would be subject to an aggregate shortraker/rougheye MRA of 2 percent. The Vessels unable to limit their catches of shortraker rockfish and rougheye rockfish would benefit from the MRA option, as it would remove the risk of being shutdown for fully harvesting the allocation of shortraker (or rougheye), since the consequence of catch exceeding an MRA is a discard requirement. While this greater flexibility may be beneficial, the MRA option may have some undesirable effects. Allowable retention of shortraker and rougheye in the aggregate would be reduced from the level allowed by the current allocation³⁶; however, if vessels use the MRA to catch shortraker (and not rougheye), it is possible that shortraker catches could be increased beyond the current allocation amount. Regardless of the behavior of vessels subject to the MRA, if total catch of shortraker (including catches of vessels in other fisheries) approach the TAC, it is possible that shortraker could be put on PSC status preventing any retention.

Generally, MRAs can contribute to discards. As currently applied in the Gulf, an MRA requires discards of catch that exceed the prescribed level at any time. So, a vessel that catches an unexpected amount of an MRA species early in a trip may be forced to discard, even if the catch would be retainable at later time in the trip. For valuable species, an MRA may induce a vessel to catch up to the maximum amount, knowing that overharvest of the MRA may be discarded without risk of penalty. These added discards would be avoided under the current allocations, which counts all harvest against the allocation and does not allow discards.

MRAs can also contribute to excessive harvests of a species. Since an MRA limits only retention, requiring vessels to discard above the retainable amount, they do not limit total harvest of a species. For species of value that are fully utilized, establishing an MRA in a fishery prosecuted with exclusive allocations of basis species and an extended season could provide participants in the fishery with an advantage in the harvest of the MRA species. These persons may fish to the MRA, as they will not be subject to the time pressures that arise in a limited access race for fish.

Sector allocations of halibut PSC

Halibut PSC will also be allocated through a three step process. In the first stage, an allocation would be made to the rockfish program as a whole, based on historic average annual usage of halibut PSC by the rockfish fisheries. This allocation would then be divided between the sectors based on qualified rockfish catch. In the third stage, each sector's allocation is subdivided within the sector based on primary rockfish allocations within the sector. Table 2-56 shows the historic halibut PSC usage in the rockfish fishery during the different qualifying year combinations, while Table 2-57 shows the halibut allocation by sector during these same qualifying year combinations.

³⁶ In addition, it is possible that harvests could be limited below the level permitted by the MRA, if overall harvests of shortraker approached the TAC. In which case, shortraker would be put on PSC status, preventing any retention. Allocations of shortraker, such as those currently made to catcher processor cooperatives, are less likely to be constrained, as those allocations would be considered in determining whether to impose PSC status.

Total halibut usage in the rockfish fishery remained relatively stable across the qualifying years, but declined for the catcher processor sector while increasing for the catcher vessel sector in more recent years. During the later qualifying year periods, the increase in primary rockfish harvests by catcher vessels contributed to this increase in halibut usage, but halibut per metric ton of rockfish increased for the sector in the more recent qualifying years. Halibut usage averaged 112 metric tons for the catcher processor sector and 113 metric tons for the catcher vessel sector during the 1996 to 2002 period. During the 1998 to 2006 period, average halibut usage for the catcher processors was 92 metric tons, while average halibut usage for catcher vessel sector was 137 metric tons. For the 2000 to 2006 period, average halibut usage for the catcher processor sector was 73 metric tons, while average halibut usage for the catcher vessel sector during this period was 146 metric tons.

Table 2-56. Total and average halibut usage by sector during qualifying years

Qualifying Year	Sector	Total halibut usage	Average halibut usage
1996-2002	CP	787	112
	CV	792	113
1998-2006	CP	825	92
	CV	1,233	137
2000-2006	CP	510	73
	CV	1,021	146

Source: ADF&G Fish Tickets for CV data and WPR for CP data

Table 2-57. Estimated allocation of halibut by sector and qualifying year option

Sector	1996-2002	1998-2006 (drop 2 years)	1998-2006 (drop 2 years)	2000-2006
Catcher processor	106.4	94.2	92.4	84.7
Catcher vessel	118.6	134.4	136.3	134.1

Source: Catch accounting data and ADF&G Fish Tickets for CV data and WPR for CP data

In February 2010, the Council added two new options for calculating the halibut PSC allocation to the rockfish program. The first option would allocate halibut PSC to the program based on the average annual halibut usage during the first three years of the pilot program. The second option would allocate halibut PSC based on 50 percent of the average annual halibut usage during the first three years of pilot program and 50 percent of the average annual halibut usage during the qualifying years.

As shown in Table 2-58, allocations of halibut PSC using these two approaches would result in halibut allocations significantly below allocations based on historical usage prior to the implementation of the pilot program. Using halibut usage during the pilot program only, results in allocations of between approximately 16 metric tons and 20 metric tons to the catcher processor sector and between approximately 23 metric tons and 25 metric tons to the catch vessel sector.³⁷ Halibut allocations using the approach that equally weights qualifying year and pilot program years provides allocations of between approximately 50 metric tons and 60 metric tons to the catcher processor sector and between approximately 70 metric tons and 80 metric tons to the catch vessel sector. Comparing allocations based

³⁷ It should be noted that the 1) estimated halibut allocations include halibut usage from the pilot program limited access fishery, as that halibut usage supported harvest of a portion of the rockfish program allocations and 2) allocations differ under the qualifying year options with the differences in the distribution of qualifying rockfish history.

on pilot program halibut usage and allocations using halibut usage from pre-pilot program years (Table 2-57) shows significant differences.

Table 2-58. Allocation of halibut by sector based on pilot program usage and based equally on pilot program usage and qualifying year usage by sector and qualifying year option (Mark has file)

Sector	Allocations of halibut based on usage during pilot program years				Allocation of halibut PSC based equally on pilot program usage and			
	1996-2002	1998-2006 (drop 2 years)	1998-2006 (drop 4 years)	2000-2006	1996-2002	1998-2006 (drop 2 years)	1998-2006 (drop 4 years)	2000-2006
CP	20.3	17.7	17.4	16.6	62.0	54.9	53.8	49.9
CV	22.7	25.3	25.6	26.4	72.0	80.9	82.0	81.0

Source: Catch accounting data, ADF&G Fish Tickets for CV data and WPR for CP data

The difference in halibut usage between pre-pilot program years and pilot program years has a substantial effect on the halibut allocation. In the years leading up to the pilot program, vessels in the rockfish fishery averaged in excess of 20 pounds of halibut mortality for each metric ton of primary rockfish species. In comparison, during the first two years of the program, vessels fishing in cooperatives and the limited access fishery cut halibut mortality rates substantially, as a result of the incentives created by the program allocations and the rollover of unused halibut on the closing of the rockfish fishery.

Reducing the halibut allocations to the rockfish program to the rockfish program would reduce or possibly eliminate of the halibut PSC rollover to 5th season trawl fisheries. As shown in Table 2-18, this reduction or elimination of the halibut PSC rollover might affect those trawlers that have benefitted from the halibut PSC rollover during the 5th season in the shallow-water flatfish, rex sole, arrowtooth, flathead sole, and Pacific cod fisheries. It should be noted that the effect of the reduced allocation under these options on halibut PSC that would likely be negligible, as halibut that are not allocated to the pilot program would remain available for use deep-water species complex fisheries (including the deep-water flatfish, rex sole, and arrowtooth flounder) beginning in the 3rd season. As a consequence, no halibut PSC savings is likely to result from this provision.

On the other hand, it is possible that one or both of the sectors could utilize all of their halibut PSC allocation prior to harvesting their rockfish allocations, if their halibut allocation is based entirely on pilot program usage. For example, in 2008, both sectors halibut PSC usage exceeded their estimated halibut PSC allocation, calculated using only pilot program halibut usage. The likelihood of a sector exceeding their halibut PSC allocation diminishes using the option that evenly weights pre pilot program halibut PSC usage with pilot program halibut PSC usage. In addition, if an alternative that allows for a limited access fishery is selected (i.e., catcher processor alternative 3) and the limited access fishes from the 3rd season general trawl halibut PSC allowance, the reduction in halibut allocations to cooperatives could create a substantial disincentive for participation in cooperatives and increase halibut usage in the rockfish fisheries.

As with secondary species allocations, halibut PSC allocations are based on historic halibut catch in the rockfish target fishery. One consequence of specific allocations of halibut PSC is that vessels unable to maintain halibut PSC rates at or below historic rates would be required to stop fishing or acquire halibut PSC allowances from others vessels in the program that are able to reduce halibut PSC usage. The system of allocations in the pilot program vessels resulted in substantially lower halibut mortality rates in the rockfish fishery. These reductions in halibut usage should continue, but one of the primary incentives for conserving halibut in the rockfish program could be diminished or eliminated with an option to reduce any rollover of unused halibut to the last seasonal apportionment for trawl gear.

Currently, under the pilot program, the incentive for halibut mortality reductions is increased by the rollover of saved halibut mortality to other fisheries late in the year. Under options, this rollover could be reduced from 100 percent of the unused allocations to as low as 25 percent of the unused allocations. Any

reduction in the rollover from 100 percent would result in halibut savings in the amount of the portion of the program allowance remaining unharvested that is not rolled over. While it might seem that simply eliminating the rollover would result in the greatest halibut savings, it is likely that eliminating the rollover altogether (or reducing it too dramatically) would reduce (or even eliminate) the incentive for reducing halibut usage by rockfish vessels; however, a rollover of 100 percent is also likely not necessary to maintain the incentive for halibut usage reductions. Under the pilot program, rollovers were 128 metric tons in 2007, 135 metric tons in 2008, and 139 metric tons in 2009. These amounts were the unharvested portion of allocations of approximately 170 metric tons to the cooperatives. Reduction of the rollover to 25 percent of the excess would reduce the rollover to slightly more than 30 metric tons, while a reduction to 75 percent of the excess would reduce the rollover to slightly less than 100 metric tons. At the end of the year, in 2007 trawlers left approximately 55 metric tons of halibut PSC unused; in 2008, trawlers left approximately 44 metric tons of halibut were left unused; and in 2009 trawlers left approximately 182 metric tons of halibut unused. These suggest that the rollover was used in 2007 and 2008, but not in 2009. In addition, in two of the first three pilot program seasons, halibut usage in the 5th season exceeded the amount of the rollover, suggesting that the rollover worked to supplement halibut that would otherwise have been available. In the third season, the halibut used in the 5th season was approximately equal to the rollover. In the last year (2009), approximately 25 vessels participated in the late season fisheries, a substantially larger number of vessels than the approximately 10 vessels participating in the preceding years.

Reducing the supplemental rollover of halibut PSC to the 5th season allowance would likely reduce fishing opportunities for vessel participants and processors during that 5th season in some years. A substantial reduction in halibut PSC rollover could result in a return to season lengths similar to pre-pilot program years, when little or no halibut were available to support these late season fisheries (see Figure 2-4). Unlike other fishing seasons, the 5th season is usually a slow fishing period for trawlers operating in the GOA, so any reduction in fishing opportunities in the GOA during this period will likely negatively impact both participating trawl catcher vessels, trawl catcher processors, and shore plants processing this groundfish.

Most importantly, an excessive reduction in the percentage of remaining halibut rolled over could lead cooperatives to place less emphasis on halibut PSC reductions in their cooperative agreements. To date, those agreements (particularly in the catcher vessel sector) are believed to create substantial incentives for reducing halibut PSC. Moderate reductions in the percentage of unused halibut rolled over would likely have a negligible effect on these agreements. In addition, given the increasing fuel costs and the higher fuel consumption associated with using pelagic or semi-pelagic gear, a reduction in the supplemental rollover could result in some rockfish program vessels shifting back to bottom contact gear.

In sector allocations of secondary species and halibut PSC

After the sector allocation for secondary species and halibut PSC are determined, allocations of both secondary species and halibut PSC would be made to cooperatives based on the aggregate target rockfish histories of their members'. Since each license holder's catch history is likely to affect the leverage within the cooperative, these individual histories are relevant to assessing the effects of allocations. Table 2-59 shows the numbers of participants in the trawl catcher vessel and trawl catcher processor sectors and simple statistics of aggregated CGOA primary rockfish histories that would be used to determine allocations of secondary species and halibut PSC within each sector. Applying these allocation percentages using 2009 TAC, Table 2-60 shows the median allocation in metric tons for the secondary species and halibut PSC, while Table 2-61 shows the average of four largest allocations for secondary species and halibut PSC.

Table 2-59. Mean, median, and four largest allocations for Central Gulf aggregated rockfish species

Qualifying Year	Sector	License Count	Mean (%)	Median (%)	Average of four largest allocation (%)
1996-2002 (drop 2)	CP	14	7.1	5.6	15.1
	CV	49	2.0	1.8	5.3
1998--2006 (drop 2)	CP	13	7.7	3.2	19.7
	CV	53	1.9	1.7	5.8
1998-2006 (drop 4)	CP	13	7.7	3.7	18.7
	CV	53	1.9	1.7	5.8
2000-2006 (drop 2)	CP	12	8.3	4.3	20.0
	CV	44	2.3	2.2	5.8

Source: ADF&G Fish Tickets for CV data and WPR for CP data

Table 2-60. Median allocation using 2009 TAC for secondary species and halibut PSC

Sector	Qualifying Year	Median allocation using 2009 TAC (metric tons)						
		Pacific cod	Sablefish	Shorthead/rougheye*	Shorthead*	Rougheye*	Thornyhead	Halibut PSC
CP	1996-2002 (drop 2)	3.05	12.61	28.45	n/a	n/a	8.19	3.06
	1998--2006 (drop 2)	2.67	6.30	n/a	4.36	9.81	6.41	1.74
	1998-2006 (drop 4)	3.17	7.47	n/a	5.18	11.64	7.61	2.06
	2000-2006 (drop 2)	3.37	7.63	n/a	5.88	12.51	9.85	2.38
CV	1996-2002 (drop 2)	8.79	5.42	0.91	n/a	n/a	1.29	2.10
	1998--2006 (drop 2)	13.50	5.65	n/a	0.27	1.01	1.17	2.01
	1998-2006 (drop 4)	13.50	5.65	n/a	0.27	1.01	1.17	2.01
	2000-2006 (drop 2)	20.13	7.60	n/a	0.37	1.45	1.50	2.55

Source: ADF&G Fish Tickets for CV data and WPR for CP data

* Prior to 2005, shorthead and rougheye rockfish were managed in the Central Gulf under an aggregate TAC, as a result, in years prior to 2005 aggregate shorthead and rougheye catch were used in the catch calculation

Table 2-61. Average of four largest allocations using 2009 TAC for secondary species and halibut PSC

Sector	Qualifying Year	Average of four largest allocations using 2009 TAC (metric tons)						
		Pacific cod	Sablefish	Shorthead/rougheye*	Shorthead*	Rougheye*	Thornyhead	Halibut PSC
CP	1996-2002 (drop 2)	8.29	34.29	77.35	n/a	n/a	22.26	8.33
	1998--2006 (drop 2)	16.65	39.20	n/a	27.17	61.08	39.94	10.82
	1998-2006 (drop 4)	15.80	37.22	n/a	25.79	57.99	37.92	10.27
	2000-2006 (drop 2)	15.57	35.23	n/a	27.17	57.79	45.51	10.98
CV	1996-2002 (drop 2)	25.60	15.77	2.66	n/a	n/a	3.75	6.12
	1998--2006 (drop 2)	45.16	18.91	n/a	0.91	3.39	3.93	6.71
	1998-2006 (drop 4)	45.16	18.91	n/a	0.91	3.39	3.93	6.71
	2000-2006 (drop 2)	52.99	20.01	n/a	0.97	3.81	3.95	6.72

Source: ADF&G Fish Tickets for CV data and WPR for CP data

* Prior to 2005, shorthead and rougheye rockfish were managed in the Central Gulf under an aggregate TAC, as a result, in years prior to 2005 aggregate shorthead and rougheye catch were used in the catch calculation

The distributions of secondary species and halibut PSC for catcher processors and catcher vessels for each of the four different qualifying year options are shown in Figure 2-12 through Figure 2-15. Allocations are aggregated into groups of four to maintain confidentiality, with vessel groupings made in descending order from the largest estimated allocation to the smallest allocation. The last and smallest grouping contains between 4 and 7 estimated allocations, since at least 4 persons activities must be included under confidentiality rules. The estimated allocation shown for each 4-vessel group is the average allocation to

members of that group. Allocations are shown as shares of the secondary species and halibut PSC based on the participants proportion of the sectors aggregate rockfish history.

Under the 1996-2002 (drop 2) qualifying year option (Figure 2-12), the four largest catcher processor allocations would average slightly less than 16 percent of the total allocation of secondary species and halibut PSC to the sector, while the four largest catcher vessel allocations would average slightly under 6 percent of the catcher vessel sector's allocation. The figure shows the last 6 catcher processor participants would receive an average allocation of less than 2 percent each, while the 4 smallest catcher vessel allocations would average less than 1 percent.

The distribution of allocations under the 1998-2006 (drop 2) and the 1998-2006 (drop 4) qualifying year options, shown in Figure 2-13 and Figure 2-14, are generally within 1 percent of each other. Looking specifically at allocations using the 1998-2006 (drop 2) year option, the four largest catcher processor allocations would average slightly less than 20 percent of the sector's total allocation of secondary species and halibut PSC, while the four largest catcher vessel allocations would average slightly greater than 5 percent of that sector's allocation. On the lower end, the 4 smallest catcher processor allocations would average less than 2 percent of that sector's allocation, while the 5 smallest catcher vessel allocations average slight greater than one-tenth of one percent of that sector's allocation.

Looking at the final set of years, 2000-2006 (drop 2) shown in Figure 2-15, the four largest catcher processor allocations of secondary species and halibut PSC would average almost 20 percent of the sector's allocation, while the 4 largest catcher vessel allocations average slightly greater than 5 percent of the sector's total allocation. The smallest 4 catcher processor allocations would receive an average allocation of less than 2 percent of the sector's allocation, while the smallest 4 catcher vessel allocations would average slightly less than one-quarter of a percent.

Figure 2-12. Allocations of secondary species and halibut PSC for catcher processors and catcher vessels using 1996-2002 (drop 2) year combination

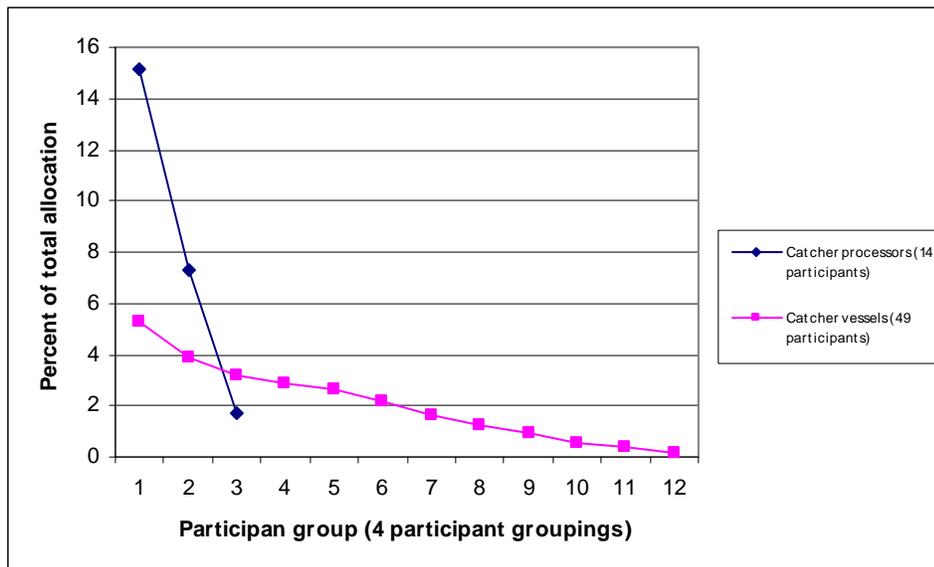


Figure 2-13. Allocations of secondary species and halibut PSC for catcher processors and catcher vessels using 1998-2006 (drop 2) year combination

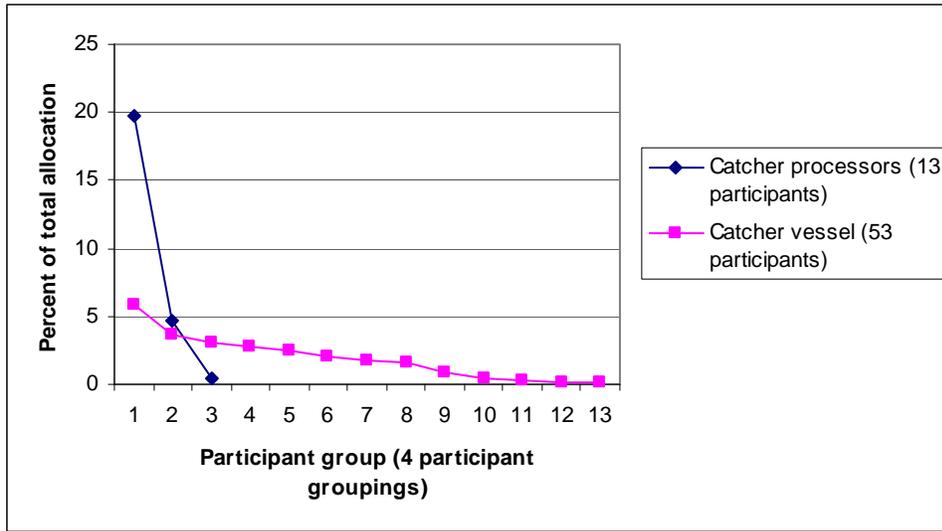


Figure 2-14. Allocations of secondary species and halibut PSC for catcher processors and catcher vessels using 1998-2006 (drop 4) year combination

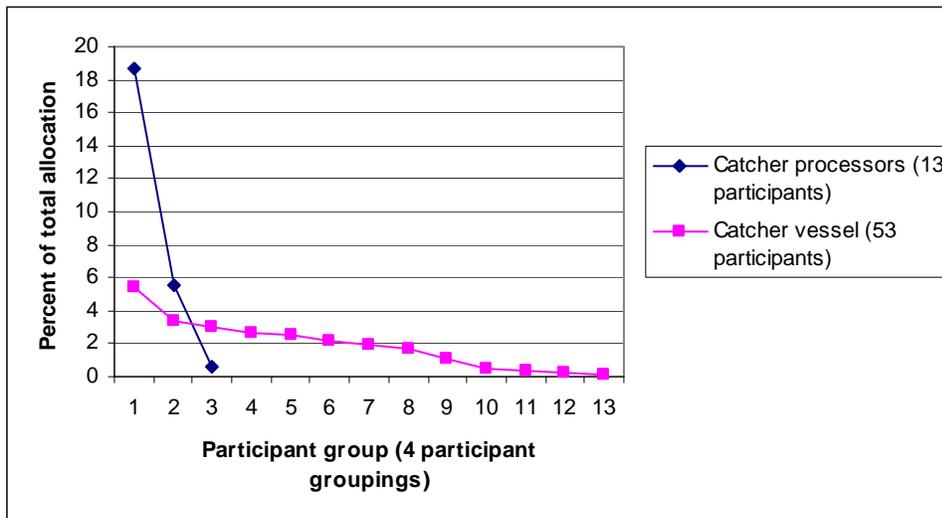
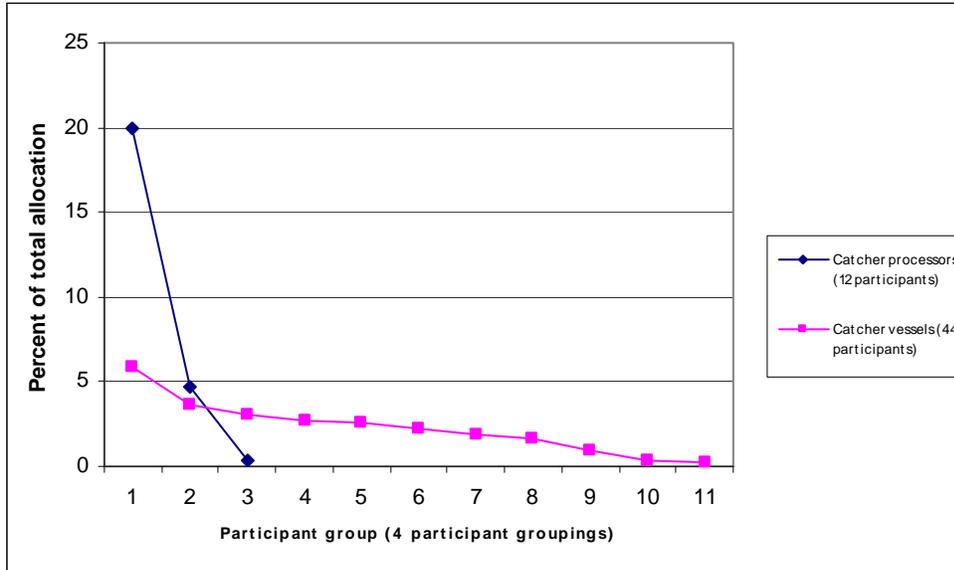


Figure 2-15. Allocations of secondary species and halibut PSC for catcher processors and catcher vessels using 2000-2006 (drop 2) year combination



Allocation of harvest shares to processors

Under one of the catcher vessel alternatives, the catcher vessel harvest share allocation would be divided between eligible harvest sector participants and eligible processing sector participants. The Council would select a fixed percentage of the catcher vessel harvest share pool for allocation to harvesters based on their qualifying harvest histories, with the remainder allocated to processors based on their qualifying processing histories. Under the alternative, allocations of target rockfish, secondary species and halibut PSC would be divided between the sectors at the prescribed percentages.

9.3 Option B - Processor allocation of harvest shares (CV – 3)

Allocation of the primary rockfish, secondary species, and halibut PSC to the CV sector shall be apportioned between harvesters (CV only) and shore based processors:

- Option 1: 90/10
- Option 2: 80/20
- Option 3: 70/30

Eligible processors will be allocated target rockfish, secondary species, and halibut PSC from the processor pool of harvest shares in proportion to its qualifying processing history. Annual allocations will be of the same species and subject to the same allocation and harvest rules governing catcher vessel allocations.

The processor portion of the harvest share pool would be allocated to eligible processors based on individual processing histories in CGOA target rockfish during qualifying years. Two options could be used to define general processor eligibility. Under each, a processor would need to have purchased at least 250 metric tons of primary rockfish species in at least 4 years during a specific period – either 1996-2000

or 2000-2006. Allocations to eligible processors would be based on their relative processing histories during a specified qualifying period – either 1996-2000 (drop 1) and 2000-2006 (drop 2).

9.4 Processor eligibility (CV-3 and 4)

An eligible processor is a processing facility that has purchased:

Option 1_- 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish harvest per year, for 4 years, from 1996 to 2000.

Option 2_- 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish per year, for 4 years, from 2000 to 2006.

Suboption: (entry level fishery processor): 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish harvested from 2007 to 2008.

Suboption: Add 2009

Processor qualifying years

Each eligible shore based processor is allocated processor catch history based on individual processor histories of CGOA target rockfish for the years:

Option 1 - 1996-2000 (drop 1 year)

Option 2 - 2000–2006 (drop 2 year)

Suboption 1: (entry level processors): 2007–2008 Suboption: Add 2009

Suboption 2: (entry level processors) Eligible entry level processors will be allocated target rockfish, secondary species, and halibut PSC from the processor pool of harvest shares that are derived from those trawl LLPs that received allocations based on participation in the entry level trawl fishery into the main program.

For alternatives with processor associations the drop year is selected by the processor and applied to all LLP licenses when determining those associations.

Table 2-62 shows the number of eligible rockfish processors along with average landings and the mean and median processor allocations of primary rockfish species for these two qualifying year options. The table also includes the 2009 mean and median allocations for the processors for each target rockfish species assuming the processors receive 10 percent, 20 percent and 30 percent of the harvest share pool.

Under the 1996-2000 (drop 1) option, 5 processors are eligible for an allocation, while under the 2000-2006 (drop 2) option 6 processors are eligible. Inclusion of an additional processor under the 2000-2006 (drop 2) option, in part, contributes to a lower median allocation under that option.

Table 2-63 shows the percent mean and median allocation and the 2009 allocation of secondary species and halibut PSC for eligible rockfish processors under the two different qualifying year options. Given the allocation of secondary species and halibut PSC is based on processing history of the primary rockfish species during the qualifying period, the allocation pattern of secondary species and halibut PSC is similar to target rockfish allocations. Using 1996-2000 (drop 1) qualifying period results in an allocation that is more evenly distributed across the five eligible processors, whereas 2002-2006 (drop 2) qualifying period again tends to favor the processors with more history resulting in larger allocations of secondary species and halibut PSC.

Table 2-62. Number of eligible shore based rockfish processors, average landings, mean and median allocations of primary rockfish species (as a percent and in metric tons based on 2009 catcher vessel allocations of primary rockfish species) by qualifying year option

Qualifying years	Species	Eligible processors	Average landings (mt)	Mean allocation (%)	Median allocation (%)	Allocation assuming processors receive 10% of the catcher vessel harvest share pool (in mt based on 2009 TAC)		Allocation assuming processors receive 20% of the catcher vessel harvest share pool (in mt based on 2009 TAC)		Allocation assuming processors receive 30% of the catcher vessel harvest share pool (in mt based on 2009 TAC)	
						Mean	Median	Mean	Median	Mean	Median
1996-2000 (drop 1)	Northern rockfish	5	1,237	20	23.5	25.5	30.0	51.1	60.0	76.6	90.0
	Pacific ocean perch		2,264		20.8	75.3	78.3	150.6	156.5	225.8	234.8
	Pelagic shelf rockfish		858		20.3	28.3	28.7	56.7	57.5	85.0	86.2
2000-2006 (drop 2)	Northern rockfish	6	1,975	17	13.9	21.7	17.8	43.4	35.6	65.1	53.4
	Pacific ocean perch		4,281		12.7	64.0	47.8	128.0	95.5	192.0	143.3
	Pelagic shelf rockfish		1,372		14.9	24.1	21.1	48.2	42.2	72.3	63.3

Source: ADF&G Fish Tickets

Table 2-63. Number of eligible shore based rockfish processors, mean and median secondary species and PSC allocations (as a percent and in metric tons based on 2009 catcher vessel allocations) by qualifying year option

Qualifying years	Species	Eligible processors	Mean allocation (%)	Median allocation (%)	Allocation assuming processors receive 10% of the catcher vessel harvest share pool (in mt based on 2009 TAC)		Allocation assuming processors receive 20% of the catcher vessel harvest share pool (in mt based on 2009 TAC)		Allocation assuming processors receive 30% of the catcher vessel harvest share pool (in mt based on 2009 TAC)	
					Mean	Median	Mean	Median	Mean	Median
1996-2000 (drop 1)	Pacific cod	5	20	21.0	9.8	10.3	19.6	20.6	29.5	30.9
	Sablefish				6.3	6.6	12.5	13.1	18.8	19.7
	Thornyhead rockfish				1.9	4.1	3.7	8.1	5.6	12.2
	Halibut				2.3	2.4	4.6	4.8	6.9	7.2
2000-2006 (drop 2)	Pacific cod	6	17	13.4	8.3	6.6	16.7	13.2	25.0	19.7
	Sablefish				5.3	4.2	10.6	8.4	16.0	12.6
	Thornyhead rockfish				1.6	2.6	3.2	5.2	4.7	7.8
	Halibut				2.0	1.5	3.9	3.1	5.9	4.6

Source: ADF&G Fish Tickets

Allocation of shares to harvesters (licenses) participating in the pilot program entry level fishery

Under the Council's motion, participants in the pilot program's entry level fishery could be included in the cooperative program. The motion provides that vessels that have registered for the entry level fishery in both 2007 and 2008 and have at least one landing during those years would qualify under this provision. Two vessels registered for the pilot program entry level trawl fishery and participated in at least one year. Each of these participating licenses would receive an allocation either based on its history in the entry level fishery or equal to some portion of the allocation to certain vessels that qualify for the program under the general qualifying criteria.

- 4.4 Entry level trawl qualification/allocation for the main program:
 - 1) Vessels / LLPs that do not qualify for Cooperative quota (CQ) for the CGOA rockfish cooperative program.
 - 2) The trawl LLP must have registered for the entry level fishery both in 2007 and 2008.
Option: add 2009
 - 3) The trawl LLP must have made a landing of fish in the entry level fishery with trawl gear in either 2007 or 2008.
Option: add 2009
- 4.5 The qualified entry level trawl LLP would receive an allocation of QS for the primary rockfish species equivalent to:
 - 4) Average of the lowest one-quarter to one-third of the qualified CV LLPs that actively fished in the RPP program in either 2007 or 2008.

- 5) Average of the lowest one-quarter to one-third of all qualified CV LLPs.
- 6) Actual catch history of the vessel/LLP in 2007 or 2008 (information would be withheld due to confidentiality restrictions unless the vessel(s) agrees to have the data released to the public).
- 7) Average of the qualified CV LLPs that actively fished in the RPP program in either 2007 or 2008
- 8) Average of all qualified CV LLPs

Option: Add 2009 to options calculated from catch history in the entry level fishery.

Note: secondary and halibut PSC allocations are calculated the same as the other qualified LLPs.

Each of these options requires some interpretation. Under the options based on allocations to qualified licenses, the distribution of the allocation among the three different primary rockfish species is not delineated. The most straightforward interpretation of the motion is to provide each of the qualified entry level vessels with an equal share of the pools of the different primary species (e.g., a one percent allocation would provide one percent of each of the primary species). Allocations of secondary species and halibut PSC would be based on these primary species allocations, as is done for all other program participants.

One or two vessels meet the ‘entry level’ qualifying criteria, depending on the general qualifying criteria selected, as only two vessels registered for the program in 2007 and both of these vessels registered in 2008 and 2009. If the general qualifying years include recent years (up to 2006), only one vessel qualifies as an entry level vessel, as the other vessel that participated in the entry level fishery meets the general qualification. Table 2-64 shows the characteristics of the ‘entry level’ allocations under options based on the allocations to eligible licenses. Those options would result in allocations to entry level vessels that range from approximately 0.2 percent of each primary species pool to approximately 2.3 percent of the pool.³⁸ These allocations would exceed the allocations of between 6 and 30 of the eligible licenses (or between approximately one-tenth and in excess of one-half of the eligible licenses), respectively.

Table 2-64. Allocations to entry level participants based on aggregate catch history of program participants (i.e., pilot program entry level participants receive allocations based on allocations to pilot program main program participants).

Qualifying years	Number of licenses qualifying for an allocation	Mean allocation		Mean allocation of active licenses		Average allocation of licenses in lowest third	
		Allocation as percent of total	Number of qualifying licenses with smaller allocation	Allocation as percent of total	Number of qualifying licenses with small allocations	Allocation as percent of total	Number of qualifying licenses with small allocations
1996 - 2002 (drop 2)	49	2.0	27	2.9	35	0.4	9
1998 - 2006 (drop 2)	53	1.9	29	2.9	41	0.2	8
1998 - 2006 (drop 4)	53	1.9	27	2.8	40	0.3	8
2000 - 2006 (drop 2)	44	2.3	22	2.9	34	0.6	10

³⁸ These allocation percentages would be in addition to the allocations to licenses meeting the basic qualifying criteria. To allocate exactly 100 percent of the TACs of the primary species, all allocations would need to be standardized.

Qualifying years	Average allocation of active licenses in lowest third		Average allocation of licenses in lowest quarter		Average allocation of active licenses in lowest quarter	
	Allocation as percent of total	Number of qualifying licenses with smaller allocation	Allocation as percent of total	Number of qualifying licenses with small allocations	Allocation as percent of total	Number of qualifying licenses with small allocations
1996 - 2002 (drop 2)	1.4	22	0.3	5	1.2	18
1998 - 2006 (drop 2)	1.4	21	0.2	6	1.2	19
1998 - 2006 (drop 4)	1.5	20	0.2	6	1.3	19
2000 - 2006 (drop 2)	1.5	12	0.4	8	1.3	11

The option to make allocations based on catches in the entry level fishery in 2007, 2008, or 2009 also requires interpretation. This could be interpreted as providing these entering licenses with the amount of their harvests in 2007, 2008, or 2009, or alternatively with an allocation based on catch histories based on those years (i.e., with a single year's history weighted against several years for other participants).

Although these allocations cannot be shown because of confidentiality limits, the approximate magnitude of the allocations can be determined. In both of these years, the entry level fishery received an allocation of 5 percent of the Pacific ocean perch available to the rockfish pilot program or 346 metric tons per year in 2007 and 2008 and 339 metric tons in 2009. No allocation of northern rockfish or pelagic shelf rockfish was made to the trawl entry level fishery. Crediting of catches from this allocation under the option is uncertain and again depends on interpretation. Perhaps most problematic is a pending enforcement investigation concerning all catches from the fishery in 2008. At the extreme, the investigation could result in all catches from the 2008 entry level fishery being determined to be illegal, which would prevent their consideration for determining allocations under the program.

If entry level participants receive an allocation equal to their 2007, 2008, and 2009 catches, with each vessel receiving its largest year's catch, the two eligible licenses could receive an allocation as large as 10 percent of the available Pacific ocean perch (assuming that each vessel harvested the entire entry level Pacific ocean perch allocation in at least one year).³⁹ The allocation would likely be smaller, as this catch distribution is unlikely, but could be as large as 4 percent of the Pacific ocean perch allocated to the program. Four percent of the Pacific ocean perch would be approximately 2.5 percent of the total primary rockfish allocation under the program (or approximately 5 percent of the catcher vessel allocation of primary species) based on the 2009 TACs (which would then be divided between the two licenses based on their relative catch histories). This allocation could be larger than all but the largest allocations to catcher vessels generally eligible under the program.

If the Council were to consider a single year's catch history of each of these licenses basing the allocation on the relative catch histories of the vessels in comparison to the catch histories of vessels that qualify under the general qualifying provision, the allocations would be reduced substantially, to an amount between one-half and three-fourths of a percent of the Pacific ocean perch allocation (or approximately one-third to one half of the aggregate primary rockfish species allocation based on the 2009 TAC).

Under any of these options, the Council will need to balance the equities of the allocations to these additional licenses that fail to meet the general qualifying criteria against the reduction in allocations to licenses that meet qualifying criteria. If the Council elects to extend the qualifying criteria to 2006, the one additional entry level license would have had no history in the rockfish fisheries for the seven years

³⁹ Small amounts of the other primary species could be allocated based on incidental catches by these 'entry level' licenses. These allocations would be necessary, as vessels cannot fish without unused allocations of all species.

preceding implementation of the pilot program. Making an allocation to this license that is larger than allocations to licenses that meet the qualifying criteria for the program could be viewed as inequitable by some licenses that met the qualifying criteria. As is typical in the development of share-based programs, the Council must balance the competing interests of vessels that have historic participation and those that have shown an interest in entering the fishery.

The Council could take one of a few different approaches to defining allocations to licenses participating in the pilot program entry level trawl fishery. One approach could be to use the information presented here (and any additional information that might be requested) to identify a specific allocation to licenses used in the pilot program trawl entry level fishery. Using this approach will add certainty to the allocations avoiding a potentially inequitable entry level allocation, if contingencies (such as the pending enforcement action) are resolved in a manner that is not expected. Alternatively, the Council could choose to work to more specifically define the options that are currently proposed. This latter approach could lead to a protracted process that would absorb considerable Council and staff time, without firmly resolving uncertainties.

Allocation of shares to processors participating in the pilot program entry level fishery

In the event that the Council elects to include processors in the allocation of harvest shares in the program, it has included an option that would make allocations to processors that participated in the entry level fishery.

9 Catcher vessel/shore based processor provisions (CV – all)

9.5 Processor eligibility (CV-3, 4, 5, and 6)

An eligible processor is a processing facility that has purchased:

Option 1_- 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish harvest per year, for 4 years, from 1996 to 2000.

Option 2_- 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish per year, for 4 years, from 2000 to 2006.

Suboption: (entry level fishery processor): 250 MT of aggregate Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish harvested from 2007 to 2008.

Suboption: add 2009

Processor qualifying years

Each eligible shore based processor is allocated processor catch history based on individual processor histories of CGOA target rockfish for the years:

Option 1 - 1996-2000 (drop 1 year)

Option 2 - 2000–2006 (drop 2 year)

Suboption 1: (entry level processors): 2007–2008

Suboption: add 2009

Suboption 2: (entry level processors) Eligible entry level processors will be allocated target rockfish, secondary species, and halibut PSC from the processor pool of harvest shares that are derived from those trawl LLPs that graduate from the entry level trawl fishery into the main program.

To be eligible to receive an allocation, a processor that participated in the entry level fishery would need to have received delivery of 250 metric tons of primary rockfish in 2007 and 2008 combined, or under the option in 2007, 2008, and 2009 combined.⁴⁰ In the first three years of the program, approximately 2,100

⁴⁰ The suboption is worded differently from the general processor qualification options in that it omits the requirement that the amount be received “per year”.

metric tons of rockfish were allocated to the two entry level fisheries (i.e., trawl and non-trawl). Although harvest amounts cannot be reported because of confidentiality limitations, it can be reported that in two of three years of the program, the trawl fishery closed on TAC. In the third year, two vessels participated in the fishery, coordinating catch to avoid an overage and allowing the fishery to remain open through the season. Catches cannot be reported, but typically, vessels using these arrangements are able to harvest a substantial portion of the TAC. The entry level fixed gear participants harvested less than 30 metric tons of primary rockfish species in any year historically. Its allocation comes available to entry level trawl participants on September 1st. In the first year of the program trawl vessels prosecuted these fall fisheries, with the northern rockfish fishery closing on TAC. In the second year, trawl vessels did not attempt to harvest the remaining portions of the fixed gear entry level allocations. In the third year, two trawl vessels prosecuted the fishery for the remaining portion of the fixed gear entry level set aside. Although confidentiality prevents reporting of amounts of catch, these circumstances suggest that in excess of 850 metric tons (and possibly as much as approximately 1,800 tons) of rockfish were harvested from the entry fishery in the first three years of the program. Since very little of these harvests were from the fixed gear fisheries, only processors receiving deliveries from the trawl fisheries could reach the eligibility threshold. Only two processors received deliveries from the trawl entry level fishery in the first three years of the program. Consequently, only one or two processors could qualify under this provision.

The Council advanced two options for defining the allocations to processors that participated in the pilot program entry level fishery. Under the first, processors would receive allocations based on their processing histories during 2007, 2008, and 2009. This provision could be implemented by crediting the former entry level processors with their histories in those years, effectively giving the processors zero processing history in other years. Yet, substantial uncertainty will exist concerning the effects of the provision. As noted earlier, a large portion of the entry level trawl harvests in 2008 may be subject to a possible enforcement action. The harvester in question asserts that the catch was not from the Central Gulf. These circumstances raise a question of whether the landings of that catch can or should be credited to the processor that received the landings. At the time of the landing, the receiving processor likely was unaware that the landings were from the entry level fishery. Notwithstanding this uncertainty, the allocation to entry level processors cannot be revealed because of confidentiality limits. Despite that confidentiality limits, it can be revealed that between 850 and 1,600 metric tons of rockfish were harvested from the entry level fisheries in 2007, 2008, and 2009 combined. Qualified pounds of processors meeting the general eligibility criteria are roughly between 34,000 metric tons and 48,000 metric tons (depending on the qualifying year option selected). If all of the entry level landings are by processors that eligible under the entry level processor provision, these processors would receive between slight less than 2 percent and slightly less than 5 percent of the processor allocation. Whether all landings are by processors eligible under the entry level provision cannot be revealed. In addition, this allocation could be divided between two processors, if two processors are found to meet the entry level eligibility requirement.

Under the second option, entry level processors would receive the processor portion of the harvest allocation made to entry level harvesters (i.e., 10 or 20 percent, as would be allocated to processors meeting the general eligibility criteria). Under this option, the allocation to processors from the pilot program entry level fishery would be wholly dependent on the allocation to entry level harvesters. The options for those allocations could result in each allocation being as small as less than one-quarter of one percent of the catcher vessel harvest share pool or as large as approximately five percent of the catcher vessel harvest share pool. With between one and three allocations to these entry level participants, the total allocation could be as small as one-quarter of one percent or as large as 15 percent of the catcher vessel pool. Entry level processors would receive between 10 and 30 percent of these allocations (or between less than one-tenth of one percent and 5 percent of the catcher vessel sector allocation). As noted in the discussion of allocations to pilot program entry level catcher vessels, the allocation under any of the

computational options is very uncertain because of the vagueness of the options and the potential enforcement action concerning catches from the entry level fishery.

The uncertainty of entry level allocations to processors could be resolved by the Council specifying those allocations. Using the information presented here (or information from future Council requests) the Council could choose an appropriate percentage allocation to processors eligible under the entry level provision. The most straightforward approach would be to simply make the allocation that would be equal to all eligible entry level processors. Such an allocation would avoid any uncertainty (and potential inequity) that might arise under a computed allocation (including any effect of the outcome of the potential enforcement action concerning harvests from the entry level fishery). Specifying an allocation for each eligible entry level processor would also provide each processor with a certain allocation that would not be dependent on (or affected by) the number of processors receiving entry level eligibility.

In developing an allocation, the Council should consider the allocations to processors that have general eligibility under the program and therefore have longer participation and greater historical dependence on the fishery, and the potential for a processor to increase its market share under the program structure adopted. The larger the allocation of harvest shares to processors, the more justified inclusion of entry level processors, as those allocations could indirectly limit processor entry opportunities. On the other hand, caps on processing would increase entry opportunities and may reduce the need to include entry level processors in the allocation.

The effects of these allocations depend, in part, on the rules governing their use and transfer. The Council has identified the following provisions concerning use and transfer of harvest shares allocated to processors:

Harvest shares held by processors will be divisible for transfer.

Harvest shares held by processors may be transferred to:

Option 1: Those processors, at the plant level, who where initially issued harvest shares

Option 2: Those processors who have processed at least 100-250 metric tons of rockfish delivered by catcher vessels within any two-year period during the new program

 Suboption 1: in the port of Kodiak

 Suboption 2: to a shoreside processing facility

Option 3: a holder of a Central GOA rockfish program eligible LLP

Since annual allocations yielded by harvest shares allocated to processors are allocated to and fished by cooperatives (under the same rules and in the same manner as those shares associated with an LLP license), provisions governing share transfers apply only to the long term harvest privilege (or quota shares), not annual allocations. The rules governing annual allocations are specified under the cooperative provisions.

The first provision permits a holder of quota shares originally allocated to a processor to divide those quota shares on transfer. Allowing divisibility should have little effect on the use of annual allocations in the prosecution of the fishery, since cooperatives oversee harvests and an LLP license that is qualified for the program is required to harvest any annual allocations. Divisibility of allocations could have a few effects on persons receiving these allocations initially and persons who wish to acquire shares in the fisheries. By making shares divisible, it is possible to divide allocation into smaller quantities. This division could help persons who wish to acquire an interest in the fishery, but who do not wish to make a large purchase for financial (or other reasons). On the other hand, to the extent sellers wish to obtain the

highest value for their sales, divisibility could have a minor price effect. A seller may be able to subdivide an allocation to extract higher prices for shares; however, if present, effect is likely to be very slight.

Three options defining persons eligible to acquire shares have been proposed. Under the first, processors who qualified for an allocation of harvest shares based on processing history would be permitted to acquire these harvest shares. Qualifying these processors to acquire shares would allow them to expand their interests in the fishery, consolidating additional portions of the processor allocation of harvest shares.

The second option would qualify processors that meet a processing threshold in any two year period under the program. The proposed threshold ranges from 100 metric tons to 250 metric tons in any two year period. The threshold levels are relatively low, requiring a processor receive approximately two deliveries to meet the 100 metric ton threshold and approximately four deliveries to meet the 250 metric ton delivery. Given the size of catcher vessel harvests in the fishery (over 4,000 metric tons annually since 1998), these thresholds are unlikely to constrain any processor that wishes to enter the rockfish fishery. Under the pilot program, all five qualified processors meet any of these thresholds; no data can be revealed for processors in the entry level fishery. Since the pilot program limits processor entry to the main fishery, the potential for additional processors to meet a qualifying threshold in the future will differ.

Two options defining processors eligible for the exemption may constrain the processor qualification to acquire shares more than the threshold. Under the first, a processor must be based in the Port of Kodiak to acquire shares. Under this provision, qualifying processing would need to take place in Kodiak, which could limit the expansion of processing to other locations. Since historically almost all processing in the fishery has taken place in Kodiak, the provision will only constrain the use of processing shares to expand processing to other geographic locations. Since Kodiak currently has a substantial processing industry, the potential for new entry in the community may be challenging. Rockfish processing would likely be only a small part of the processing at any entering plant. As a result, processor entry to rockfish fishery would likely come from either processors expanding existing operations or processors that develop a broad scale multispecies operation. The processors most likely to meet the threshold would be current Kodiak processors (including those that did not qualify for an allocation under the program).

The second option would require that processing take place at a shore-based facility (and not a floating processor). It should be noted that this provision will only have an effect, if the Council chooses not to establish a Kodiak landing requirement. This provision would allow shore plants outside of Kodiak that meet the processing threshold to acquire harvest shares initially allocated to processors. Depending on market conditions and opportunities, under cooperative management, it is possible that harvesters could use their allocations to obtain higher prices for landings from processors outside of Kodiak. These activities could then qualify that processor to acquire shares from the processor pool of harvest shares, which could be used to expand operations. To cause such a redistribution of landings might be difficult, as most of the harvesters in the fishery have established relationships with current processors. In many cases, these relationships extend to other fisheries. These harvesters may be reluctant to move rockfish landings to other plants, as it could disrupt those relationships.

Although the threshold processing requirement is relatively minimal under this option, opportunities for processor acquisition of shares are likely to be few. Unless a processor is exiting the fishery, it is unlikely that a processor would wish to sell its shares to a possible competitor. It is also likely that, if a processor were to exit, it would attempt to sell its entire operation, including any shares. This type of a transfer is unlikely to change the processing market, except when a plant is bought by a competitor who is consolidating processing. Depending on the excessive share cap, processors may not be permitted to consolidate in this manner.

It should be noted that, as written, a processor that meets the threshold would be qualified to acquire shares (and remain qualified) indefinitely. A processor could meet the threshold activity level in the course of a year or two, stop processing in the fishery, and then later acquire shares as a means to reenter. Given this potential, it is not clear that the processing requirement will effectively ensure that a processor has a current, meaningful connection with the fishery.

Another option would allow any holder of a Central Gulf endorsed license eligible for the rockfish pilot program the opportunity to acquire shares initially allocated to a processor. The Council should clarify several aspects of this option, if it intends to pursue it. First, it should clarify whether this option is intended to be limited to catcher vessel license holders only. As written a catcher processor license holder could acquire these shares. In addition, the Council should clarify whether the shares remain independent of the license and its allocation. Alternatively, the shares could attach to the license and merge with the shares associated with the license.

Should the Council adopt this option, it would provide an additional means for license holders to consolidate long term shares in the fishery. If the Council adopts this provision together with a provision that permits processor acquisition of shares, it is likely that most transfers of processor allocations will be to another processor, with the sale of all processing interests associated with the fishery. It is unlikely that a processor would transfer interests, if it intended to remain in the fishery. In addition, if a processor intended to exit the fishery, it is likely that the processor would keep all associated assets, including any share holdings together in the sale. Consequently, only if sales to other processors are not permitted, or the processor acquiring the interests of a processor is limited by a share cap, would transfers likely to be made to harvesters. In these instances, it is likely that the transfers would be made to harvesters that have associations with the acquiring processor, to increase the potential for that processor to continue to receive landings from the shares. If share transfers to processors are not permitted, over time all harvest shares can be expected to gravitate to license holders. It should be noted that this transition may take several years, as processors are unlikely to transfer the shares, as long as they remain in the fishery. In addition, it is possible that some of the license holders may also have processing interests in the fishery.

2.4.2 Limits on Excessive Shares

The proposed rockfish program will define a cooperative structure for CGOA rockfish participants. Like other rationalization actions of the Council, the proposed action includes options for limiting excessive accumulation of shares and activity in the fishery. For the catcher vessels, options limit individual and cooperative share use and holdings and vessel share use. For processors, options limit harvest shares holdings and processing activity. For the catcher processors, options limit individual share use and holdings and vessel share use.

As noted in the NRC study “Sharing the Fish,” use caps are generally favored as a means to prevent excessive shares (or the control of a disproportionate amount of shares by a single person or entity). In fisheries with excess capital, it is likely that issuance of transferrable QS will result in some consolidation, as excess capital leaves the fishery. While this consolidation might be favored for developing economies of scale, concentration of share holdings in a relatively few individuals or entities can result in excessive market power. The concentration of market power can affect working conditions and wages, and harm smaller participants in a fishery.⁴¹ Although caps on use and holdings of shares are generally viewed as a means to prevent excessive concentration of shares, the level of the cap could vary among fisheries depending on the particular nature of the fishery and the objectives of the cap.

⁴¹ Concentration of shares in a fishery is unlikely to affect final product markets, as most fisheries’ outputs compete in a world market. Concentration of shares, however, could affect the balance of power between the eligible participants in the CGOA rockfish fishery.

The Council might pursue several different objectives in its setting of use caps. Caps on excessive shares can be used to:

1. prevent consolidation of market power that is used to influence ex vessel prices. If one or a small group of quota share holders are able to consolidate interests in the fisheries, it is possible that they would be able to withhold supplies of fish to raise the ex vessel prices.
2. influence the availability of quota shares in the market to facilitate entry to the fishery. Consolidation of quota share in the hands of a few holders could prevent the development of an active market for shares that is necessary for entry to the fishery.
3. prevent consolidation of market power that is used to influence crew shares and working conditions. The concentration of shares can also facilitate control of the labor market by the participants in the market.
4. limit windfalls granted during the allocation of shares. If allocations in excess of the caps are not permitted, use caps can be used to limit the windfall granted to persons receiving allocations in excess of the share.
5. ensure that the resource supports a reasonable number of participants. Use caps can be used to limit consolidation, which could result in the resource supporting the activities of few participants.

The Council must determine both the rationale for its use caps and the appropriate level of those caps necessary to serve those ends. In assessing the caps, the participation patterns of rockfish participants should be kept in mind. Participants in the fishery have historically participated in several different fisheries throughout the year (and in July). Consolidation in the fishery could have benefits of allowing greater specialization, improving harvest techniques and quality of landings and potentially reducing bycatch in the fishery.

Gauging the degree to which a cap will serve an intended purpose is complicated by several factors. The fluctuation of stocks (not only rockfish stocks, but also stocks in other fisheries prosecuted by rockfish fishery participants) and unpredictability of prices lead to uncertainty of harvesting and processing revenues. These information shortcomings also limit the ability to predict threat of market consolidation to competition in both ex vessel prices and the labor market. The unavailability of ownership data prevent estimation of the current distribution of interests in the fishery, prevents a complete assessment of the number of participants currently supported in the fishery. Combined, these factors make it difficult to provide an accurate estimate of the effects of use caps on various aspects of the fishery.

Cooperative Harvest Use Caps

CV cooperatives

Individual Cap

No person may hold or use more than 3-5% of the CV historic shares, using the individual and collective rule (Option: with grandfather provision).

Cooperative Cap

Control of harvest share by a CV cooperative shall be capped at 30% of aggregate POP, Northern Rockfish and PSR for the CV sector.

Vessel Cap

No CV may catch more than 4-10 % of the target CV allocation

(Option: with grandfather provision).

Processor share holdings (CV-3 only)

Harvest shares held by processors will be subject to the same **3-5% cap*** for holding and use that applies to harvest shares held by harvesters

Suboption: 10% cap

Suboption: Grandfather initial recipients

CP cooperatives

Individual Cap

No person may hold or use more than 20, 30, or 40 percent of the CP historic shares, using the individual and collective rule

(Option: with grandfather provision).

Vessel Cap

Control of harvest share by a CP shall be capped at 60% of aggregate POP, Northern Rockfish and PSR for the CP sector.

Option: Eligible CPs will be grandfathered at the current level.

Shoreside Processor Use Caps

Shoreside processors shall be capped at the entity level.

Processing Caps

No processor shall process more than 20%, 25%, 30% or 33% of aggregate POP, Northern Rockfish and PSR for the CV sector.

No processor shall process more than 20%, 25%, 30%, or 33% of aggregate secondary species for the CV sector.

Option: Eligible processors will be grandfathered.

(The year 2002 will be used as a base (or index) year for applying the aggregate caps.)

*** Note this provision was revised by staff for consistency with modification of the options at the February 2010 meeting.**

Status Quo

Since no allocation would be made under LLP management, no issue concerning excessive shares exists.

Catcher Processor Program Alternatives

Under the catcher processor program alternatives, an individual use cap would limit the holdings of any individual to 20 percent, 30 percent, or 40 percent of the aggregate catcher processor share pool.⁴² This cap would be applied to limit the amount of shares that an individual could acquire through license holdings or could bring to a cooperative, through license holdings and intercooperative transfers combined. To apply this cap, intercooperative transfers would need to be conducted through individuals.

⁴² Under the rule, no person could hold licenses that, collectively, have associated shares in excess of the specific threshold and could not acquire annual allocations arising from shares in excess of the threshold. Vessel caps are interpreted similarly, such that no vessel can harvest rockfish arising from shares in excess of the threshold.

In addition, no catcher processor could harvest in excess of 60 percent of the catcher processor pool.⁴³ Persons or vessels with history in excess of these limits could be grandfathered at their historic levels.

Individual use caps for both catcher processor and catcher vessel sectors will be calculated using the “individual and collective rule”. The “individual and collective rule” defines how much of the sector’s catch history a person may use or hold. Persons holding 100 percent of an eligible license would be assigned 100 percent of the license’s history toward their use cap. If they hold 50 percent of the license, they are credited with holding or using 50 percent of the history assigned to that license. Once the person is assigned an amount equal to the maximum excessive shares cap, that person would not be allowed to acquire any additional amount of the sector allocation.

Both the individual and vessel caps include an option to grandfather any individual or vessel, respectively that exceeded the cap historically. Such a provision would allow all individuals and vessels to maintain activity at the level of their initial allocations. Individuals and vessels over the cap at the initial allocation would not be allowed to acquire additional harvest shares, unless they divest of their initial allocation to a point at which they fall below the use cap. At that time, they would be permitted to acquire harvest privileges until they reach the excessive share cap. If the option to grandfather allocations above the excessive share cap is not adopted, individuals who would receive initial allocations greater than the cap would not be allocated the portion over the cap. That portion of the allocation would be redistributed, in proportion to qualifying history, to other eligible license holders in the sector. Since vessels do not receive allocations, in the absence of a grandfather clause, all vessels (including any vessel historically harvesting in excess of the cap) would be prohibited from harvesting over the cap in the future.

Several factors could be used to assess whether excessive share caps on share holdings and use will serve the objective of the Council. The number of participants that would remain in the sector if all participants buy or lease shares up to the cap would illustrate the potential limit on concentration of shares. The number of historical participants in the fisheries receiving allocations provides some indication of the number of participants that these fisheries may support and some insight into whether the cap is consistent with past participation levels. Also, since allocations might be a reflection of historic participation, the number of persons that would receive allocations at or above the cap provides some insight into whether the cap is consistent with historic participation. The analysis below is intended to provide the Council with a discussion of the options under consideration, and available data that might form the basis for a decision of an acceptable use cap.

Table 2-65 shows the number of eligible LLP holders that exceeded the 20 percent, 30 percent, and 40 percent use caps, respectively.⁴⁴ In general, fewer than four license holders⁴⁵ exceed all of the use caps using three of the qualifying year combinations, while no holders exceed the 40 percent cap using 1996 – 2002 drop 2 years. As a result, a maximum four license holders will be affected by the excessive share cap options. Although difficult to discern from the table, the increase in companies over the cap when more recent qualifying years are selected suggests that the fishery became more concentrated over the range of years under consideration. License holders exceeding the cap would not be allowed to purchase additional harvest privileges, if they are above the cap. Depending on the level of any vessel harvest cap and cooperative formation, it might be possible for these license holders to harvest additional CGOA rockfish beyond their holdings, depending on the harvest agreement of their cooperatives.

⁴³ **History transferred to catcher vessel cooperatives would remain subject to the catcher processor caps and would not be subject to catcher vessel or shoreside processor caps.**

⁴⁴ Holdings are aggregated at the company level, but limited information is available concerning the percentage of ownership of any vessel or LLP license by any person. If available, those data could be used to further examine holdings by crediting each person holding an interest in a company with holdings based on ownership interests.

⁴⁵ The exact number cannot be reported because those data are considered confidential.

Table 2-65. Number of eligible catcher processor LLP holders over the use caps

Qualifying years	Sum of LLP holders with over 20 percent quota shares	Sum of LLP holders with over 30 percent quota shares	Sum of LLP holders with over 40 percent quota shares
1996-2002 drop 2	*	*	0
1998-2006 drop 2	*	*	*
1998-2006 drop 4	*	*	*
2000-2006 drop 2	*	*	*

Source: Weekly Processor Reports

*Withheld due to confidentiality requirements

Information developed for the excessive shares analysis shows that several current participants could greatly increase their holdings before reaching the proposed caps. That result is not surprising, as caps are set at levels that would allow 3, 4, or 5 persons to hold all quota allocated to the sector depending on the cap. Given that seven companies hold licenses qualifying them for the sector, over half of the companies might be able to leave the fishery under a 40 percent cap before the cap would be binding, if one of the remaining participants wished to divest to another participant. At 20 percent cap, at least 5 companies would need to remain in the fishery, if all companies were to stay under the cap. Yet, since some company holdings may exceed 40 percent on the initial allocation, it is possible that the sector could consolidate further (if these initial allocations are grandfathered). Allowing the fleet to consolidate might enable the remaining companies to operate more efficiently. Yet, since harvest may be liberally redistributed among vessels in cooperatives, it is likely that any production efficiency gains can be achieved without further concentration of share holdings in the fishery. In addition, since many vessels in the fishery participate in the Amendment 80 program, it is possible that long term consolidation by license transfers may be limited by the caps that apply in that program.

LLP holders who wish to leave the fishery would prefer more liberal use caps, which would allow them to sell their holdings to the persons able to pay the most for the harvest privileges. Restrictive caps would exclude some buyers from the market, which may reduce sale prices, relative to the prices that might arise in under more liberal use caps.

In addition to individual use caps, the Council is also considering vessel use caps. Vessel use caps would limit the percentage of the catcher processor sector's allocation of the primary species that a vessel may harvest. The vessel use cap being considered is 60 percent of the primary species in aggregate. This cap is unlikely to constrain activities of any vessel, as no vessel has harvested over 50 percent of the sectors catch in any year (including years under the pilot program). The Council could also elect to take no action on vessel use caps and essentially default to a use cap of 100 percent of the sector's allocation. Whether this action would be appropriate depends on whether the Council believes that the rockfish fishery should be considered an independent fishery that should support a minimum level of vessels. It could be argued that the rockfish fishery is one of a group of fisheries prosecuted by an identifiable fleet of catcher processors. Although contraction may occur in the rockfish fishery, since these vessels participate in a number of fisheries, allowing all harvests from the rockfish fishery to occur from a single vessel is unlikely to have any broad effect on the distribution of fishing activities on this group of vessels, since most will maintain activities in other fisheries.

Consolidation of the fleet may occur as a result of the cooperative structure and transferability of shares between and within cooperatives. Reducing the number of vessels in the fleet may improve the overall economic efficiency of the sector. Production efficiency may improve as the most efficient rockfish

vessels⁴⁶ harvest more of the sector's allocation. The owners of these vessels may lease (or otherwise contract) the harvest of privileges assigned to other vessels to achieve these efficiencies. Since most sector vessels participate in several fisheries, consolidation in the rockfish fishery is not likely to affect the number of jobs on participating vessels.

Implementing a vessel use cap would ensure that no vessel harvests over that cap and that at least a certain number of vessels remain active in the CGOA rockfish catcher processor sector. A 60 percent vessel use cap would require 2 catcher processors to harvest the primary species allocated to the sector. During the 1996 to 2006 limited access fisheries, as many as 14 catcher processors and as few as 5 catcher processors were active in the CGOA rockfish fishery during any one year. During the 2007 to 2008 pilot program fisheries, as many as 6 catcher processors and as few as 4 catcher processors participated in the fisheries. During this period, more vessels participated in the limited access fishery than in cooperatives, which may suggest that greater cooperative participation could lead to further consolidation. Table 2-66 reports the number of catcher processors that caught over 10 percent, 20 percent, and 30 percent of the total catcher processor catch of CGOA primary rockfish annually from 1996 to 2006. As the shown Table 2-3, the number of catcher processors in the CGOA rockfish fishery diminished in more recent years which resulted in catcher processor vessels harvesting higher proportions of the CGOA rockfish. However, no catcher processor has harvested more than 60 percent of the CGOA rockfish. Whether a vessel use cap of 60 percent would bind any vessel in the sector in the future is uncertain.

The alternatives include an option to grandfather the activities of any vessel that historically exceeded the selected vessel cap. Although data suggest that no vessel would exceed the proposed cap, the grandfather clause could be used to ensure that if a license is assigned an amount of the sector's allocation above the use cap, the vessel using that license could catch up to the allocation associated with the license. Vessels fishing with a license receiving an initial allocation below the use cap would be bound by the use cap. Using this approach, it is very unlikely that any license would qualify for a grandfather exemption.

Table 2-66. Number of catcher processors vessels over 10, 20, or 30 percent of the annual aggregate primary catch for the sector from 1996 to 2006

Year	10%	20%	30%
1996	4	*	0
1997	4	0	0
1998	5	0	0
1999	5	0	0
2000	5	*	0
2001	5	*	0
2002	5	*	0
2003	5	*	*
2004	5	*	0
2005	5	*	0
2006	5	*	0

Source: WPR

* Withheld due to confidentiality requirements

⁴⁶ Efficient vessels are able to harvest and process the primary rockfish species at a lower cost than other vessels in the fleet. A lower cost structure and revenues that are comparable revenues allow vessels to generate a larger producer surplus.

Catcher Vessel Program Alternatives

The proposed action includes an option for an individual use cap of between 3 percent and 5 percent of the catcher vessel shares. If harvest shares are allocated to eligible processors, those shares held by processors could be subject to the same use cap that applies to harvesters or a use cap of 10 percent of the harvest share pool under a suboption. In addition to individual use caps, a vessel use cap could be incorporated into the program that ranges from 4 percent to 10 percent of the primary rockfish species. The proposed action also includes a cooperative use cap of 30 percent of the aggregate primary rockfish species that would prevent consolidation in excess of that cap by any cooperative. An additional cap could be included that would limit any processor from processing in excess of 20 percent to 33 percent of the sector's allocation.⁴⁷ Each cap also includes an option for consideration that would grandfather activity above the cap.

Table 2-67 shows the number of eligible LLP holders that exceeded the 3 percent, 4 percent, or 5 percent individual use caps.⁴⁸ The number of holders that exceeded the 3 percent cap ranged from 12 using the 2000 to 2006 (drop 2) qualifying year option to 14 holders using the remaining qualifying year options. Five holders exceeded the 4 percent cap using 1998 to 2006 (drop 4) qualifying years and 7 holders exceeded that cap using the other qualifying year options. Four holders exceed the 5 percent use cap using the 1998 to 2006 (drop 2) qualifying year option, and fewer than 4 holders exceeded the cap using the other qualifying year options.

Table 2-67. Number of eligible catcher vessel LLP holders over the use caps

Qualifying years	Sum of LLP holders with over 3 percent quota shares	Sum of LLP holders with over 4 percent quota shares	Sum of LLP holders with over 5 percent quota shares
1996-2002 drop 2	14	7	*
1998-2006 drop 2	14	7	*
1998-2006 drop 4	14	5	*
2000-2006 drop 2	12	7	*

Source: Alaska Department of Fish and Game

*Withheld due to confidentiality requirements

Under the various qualifying year options and proposed caps, a maximum of 14 license holders could be constrained by the individual use cap at the initial allocation. These license holders would not be allowed to purchase additional harvest privileges, as long as their holdings exceed the cap. Other license holders could increase their holdings before reaching the caps. The proposed caps would ensure at least 20, 25, or 33 license holders remain in the catcher vessel sector. Given that between 42 and 50 license holders would be allocated primary rockfish depending on the qualifying years, between one-quarter and more than one-half of those license holders could leave the fishery before all owners reach the 3 percent cap.

Whether this consolidation would occur depends on several factors. Most importantly, the rockfish fishery is typically a small portion of each vessel's annual operations. Persons considering acquiring

⁴⁷ Under both catcher processor alternatives, a participant in that sector could bring their allocation onshore to be harvested by a catcher vessel cooperative and processed onshore. This use of catcher processor shares would be subject to catcher processor caps only (and would not count toward either a catcher vessel cap or a shore-based processing cap), since the caps apply exclusively to use and control of the different sector's allocations.

⁴⁸ In reviewing these estimates, it should be noted that holdings are aggregated at the company level, as information is not available showing the percentage of ownership of any LLP license by any person.

additional eligible licenses will need to consider the portfolio of activities that are and can be pursued with a vessel, when considering an acquisition.

In addition to the individual use caps on harvest share holdings generally, a limit on processor holdings of harvest shares is also proposed, in the event that harvest shares are allocated to processors. Under one option, general harvest share limits could be applied to all holdings, effectively constraining harvest share holdings of both types to a specified cap level. When considering the proposed cap levels and the options for the allocation of shares to processors (which could allocate between 5 percent and 30 percent of the harvest share pool to processors), the potential for most processors to reach the cap on the initial allocation is apparent. For example, if the cap is set at 3 percent and the five or six eligible processors receive 20 percent of the harvest share pool, it is possible that all of those processors will receive allocations over the cap. A grandfather provision could allow these processors to maintain holdings from the initial allocation. In setting the caps, deciding whether to adopt a grandfather clause, identifying transfer rules, and determining the portion of the harvest share allocation to processors, the Council should keep these dynamics in mind. For example, if the Council elects to limit transferability of processor allocations to other processors, it is possible that a low cap could lead to an expansion of the processing sector on the transfer of shares. Similarly, a large allocation to processors without a grandfather clause may have little merit, since most processors would not receive their full allocation. Likewise, if transfers of shares initially allocated are limited to processors, a large allocation and relatively low cap may be unworkable, as the fishery is unlikely to reasonably support more processors than it does currently. For example, if twenty percent of the harvest share pool is allocated to processors and a cap of 3 percent is adopted, 7 processors would be required to hold the sector's allocation without exceeding the cap. This relatively wide distribution of shares would include more processors than currently participate in the trawl fishery, including the entry level trawl fishery. **Coordination of the allocation size, the cap on holdings, and the transfer rules is needed to ensure that the processor allocation is coherent.**

A second option would establish a 10 percent use cap on processor holdings. Although other interpretations are possible, staff interprets this as a two-part (or layered) use cap, under which all persons are bound by the harvest share use cap that would limit any person from holding in excess of 3 percent to 5 percent of the total pool of shares initially allocated to license holders. In addition to that cap, any person would be prohibited from holding in excess of 10 percent of the total pool of harvest shares (including both shares allocated to harvesters and shares allocated to processors). For example, a person could hold 2 percent of the total harvest share pool in shares associated with license holdings and up to 8 percent more of the total harvest share pool in shares allocated to processors. Depending on the portion of the pool allocated to processors, it might be possible for two processors to acquire the entire segment of the pool allocated to processors under this interpretation. On the other hand, limit on the aggregation of licenses (and associated harvest share allocations) is maintained. In other words, the caps on harvest shares associated with licenses are unaffected by this interpretation.⁴⁹ Again, the Council should consider the size of the allocation of shares to processors when establishing this use cap. If processors receive only 10 percent of the harvest share pool in the initial allocation, it would be possible for a single processor to acquire all of those shares, if the use cap is set at 10 percent.

Another option would establish a cooperative use cap of 30 percent of the catcher vessel harvest share pool. Under this option, no cooperative could control more than 30 percent of the harvest shares of the aggregate primary rockfish species in any season. The provision will prevent harvests from forming cooperatives beyond the cap of the threshold. This may prevent consolidation within cooperatives that could be detrimental to marginal processors in the fishery. For example, a strong relationship may develop between a cooperative and a processor. Allowing consolidation of most of the fishery's harvest

⁴⁹ Other forms of caps are possible, but would require a rewording of the use cap provision from its current form.

shares in that cooperative could limit the ability of other processors to compete for landings. A few other factors should be considered in assessing the effectiveness of this cap. Caps on processing (as proposed in a separate option) would likely have the same effect in a more direct manner by preventing any processor from receiving landings beyond a specific threshold. In addition, independent harvesters will be free under the program to form a marketing association (as permitted by the Fishermen’s Collective Marketing Act (the FCMA)), which could include all independent harvesters in the fishery and would more effectively organize harvesters for negotiating with processors. The harvester cooperatives formed under the program may not have the ability to engage in negotiations with processors, unless the member harvesters fully comply with requirements of the FCMA.

An option for a vessel use cap would prohibit any vessel from harvesting more than 4 percent to 10 percent of the target rockfish catcher vessel allocation in any year. This cap would ensure that harvest activity does not exceed the specified threshold and, indirectly, that a certain number of vessels remain active in the fishery. For example, the 4 percent vessel use cap would ensure that at least 25 vessels remain active, whereas a 10 percent cap would ensure that at least 10 vessels remain active.

As shown in

Table 2-68, as many as 12 vessels in the catcher vessel sector have historically harvested more than 4 percent of the sector’s total catch in a given year. Few vessels have historically exceeded the proposed 8 percent cap and in only one year did any vessels exceed the 10 percent cap.

Any grandfather provision would apply to licenses (rather than a vessel), allowing the vessel using the license to harvest up to the allocation associated with the license. Table 2-69 provides the number of LLP holders that would be grandfathered at the different vessel cap levels. In general, 5 or fewer LLP holders would be grandfathered if a vessel cap of 4 percent is selected, while 3 or less LLP holders would be grandfathered if a vessel cap of 6 percent was selected. No LLP holders would be grandfathered at vessel cap levels greater than or equal to 8 percent.

Table 2-68. Number of catcher vessels over 4, 6, 8, or 10 percent of the annual aggregate primary catch for the sector from 1996 to 2006

Year	4%	6%	8%	10%
1996	11	*	*	0
1997	12	6	0	0
1998	10	*	0	0
1999	8	*	*	0
2000	7	*	0	0
2001	7	4	*	0
2002	8	*	*	0
2003	8	*	0	0
2004	9	*	0	0
2005	10	*	*	0
2006	9	*	*	*

Source: Alaska Department of Fish and Game fish tickets

* Withheld due to confidentiality requirements

Table 2-69. Number of catcher vessel LLP holders with allocations over 4, 6, 8, and 10 percent

Qualifying years	4%	6%	8%	10%
1996-2002 drop 2	5	*	0	0
1998-2006 drop 2	5	*	0	0
1998-2006 drop 4	5	*	0	0
2000-2006 drop 2	*	*	0	0

Source: Alaska Department of Fish and Game

*Withheld due to confidentiality requirements

Including a grandfather provision for individual share use (or holdings) but not for harvests may require some share holders to lease a portion of their allocation to others for harvest. This approach could be used to allow persons to gain the benefits of share holdings, while ensuring that no vessel exceeds a desired level of consolidation. The extent of leasing that would be engendered by this approach will depend on the relative level of the two caps and the accompanying allocations.

Limiting the harvests of vessels with a vessel use cap could limit production efficiency gains in the fishery to the extent that consolidation could facilitate those gains. Although the program is unlikely to lead to vessel retirement, it is possible that some vessels may choose not to gear up for the rockfish fishery, if leasing opportunities are present. A liberal vessel cap could contribute to this consolidation in the fishery.

Finally, an option could establish a shoreside processing cap. Separate processing caps could limit the percentage of primary species and secondary species allocated under the program at any facility to 20 percent, 25 percent, 30 percent, or 33 percent of the respective allocations.

A processing cap would ensure that no processor purchases over the specified share of the landings in the fishery. The cap might be intended to maintain a distribution of processing activity in the fishery among several processors. Processing competition will also be decreased, to the extent that a processor limited by the cap might be willing to purchase in excess of the cap. Although the intent might also be to protect historic processors, the extent of any protection is likely to vary over time and, in some cases, may be minimal. For example, currently 6 processors are active in the fishery (including the pilot program entry level fishery). If the cap is set at 25 percent, it is possible that the two least efficient processors could be unable to attract landings. It should be noted that the most efficient processors might reduce ex vessel prices (and gain additional profits) as a result of the cap, as they will be prevented from competing for landings in excess of 25 percent of the fishery. If processors that historically processed in excess of the cap are grandfathered, the constraint of the cap is likely to be even more limited. Depending on the preferred alternative, the Council should consider whether a cap that does not grandfather an existing processor is appropriate. Specifically, two of the alternatives do not recognize historic processing activity in any way (catcher vessel alternative 2 and catcher vessel alternative 3). Under these alternatives accompanied with a processing cap without a grandfather clause, it is possible that a processor historic participation in the fishery might not only receive no protection from the program but also might need to reduce its share of the market.

The first processing cap would limit a processor to a specific percentage of the primary species landings. This cap would be administered as a percentage of the aggregate of the TACs of the three primary species. Although prices and markets vary for the three primary species, those differences likely to not merit creating separate caps for the different species (Table 2-30). The second cap would limit processing of the secondary species. Administration of that cap requires some interpretation and may not be straightforward. First, not all of the secondary species are allocated. Determining a cap as a percentage of the available catch of species that are not allocated is not possible. In the absence of further direction, it is

assumed that only allocated species would be subject to any cap. Consequently, the cap would be applied only to sablefish, Pacific cod, and thornyhead rockfish. Also, since secondary species differ greatly in value, it is unclear that an aggregate cap would effectively ensure that interests in those species are not consolidated in a single processor. Specifically, sablefish ex vessel prices are typically approximately \$2.50 per pound or greater, while Pacific cod and thornyhead rockfish ex vessel prices are typically \$0.50 per pound or less. An aggregate cap limiting processing by a single company to 25 percent of the aggregate allocated secondary species poundage might allow a single processor that purchases only sablefish to purchase over 50 percent of the aggregate value of secondary species (based on these relative ex vessel prices). In considering whether to advance a cap on secondary species, the Council should consider its purpose for that cap and whether the cap is likely to achieve that objective, given these relative values. In addition, the Council should consider that relative changes in product markets and prices could change the effect of the cap over time. For example, in times of very strong markets for one species, that species could draw greater ex vessel competition, while the ex vessel market for other secondary species may be constrained by the cap. These effects could be highly variable and difficult to anticipate.

In any case, caps on processing are likely to provide some processors with an advantage, if the caps constrain any processors purchases. Processors constrained by the cap may reduce their prices, since they will not be permitted to compete for landings in excess of the cap. Although, at the outset, it is likely that it will be current processors that will gain the advantage of this limit on competition, it is possible that processors with little or no history in the fishery could receive the benefits of depressed competition arising from a processing cap. The potential for an entering processor to receive this benefit is increased, if the Kodiak landing requirement is not incorporated into the preferred alternative. Although no production efficiency benefit is expected to be derived from processing outside of Kodiak, if a Kodiak landing requirement is adopted, any such benefit would not be attainable.

Overall, processing caps would constrain production efficiency to the extent that competition for landings is decreased. Harvesters in the fishery would receive a lower price for landings to the extent that competition is constrained. This reduction in competition could, in turn, reduce the incentive for processors to improve products and enhance marketing efforts to maintain their competitiveness in product markets. The extent of this effect is not known, as under the rockfish pilot program, attempts of processors to increase product values through marketing efforts and product improvements yielded little additional value. Whether future efforts might meet greater success is not known.

2.4.3 The entry level fishery

Under the proposed action, there are three entry level fishery alternatives. The first is the no action alternative, under which management would revert to the LLP, which would allow any holder of an LLP license to enter a vessel in the rockfish fishery. The second alternative is the current entry level management structure under the rockfish pilot program. Under this alternative, catcher vessel license holders that do not qualify for participation in the catcher vessel program can participate in a derby fishery for 5 percent of the target rockfish TAC (approximately 700 metric tons at the current TACs). This entry level TAC is divided equally with half available to trawl gear participants and half available to fixed gear participants. The third entry level alternative would provide for only a fixed gear level fishery, with a TAC that fluctuates based on recent catches from that fishery.

Status Quo – EL-1

Entry to the trawl rockfish fisheries under status quo is limited by the LLP. Since a substantial number of LLPs endorsed for the CGOA fisheries are not currently active in the rockfish fisheries, several persons holding those licenses could enter the fishery. The lack of entry to the fishery prior to implementation of the rockfish pilot program is a result of overcapacity in the fishery, which is demonstrated by the very

short seasons during that period. Under status quo, entry of a substantial number of additional vessels is unlikely. In the long run, some persons may choose to enter the fishery, but only if current participants depart from the fishery, or stock abundance or market conditions improve significantly.

Entry to the non-trawl sector is also limited by the LLP. Vessels under 26 feet, however, do not require an LLP license to fish in federal waters. In addition, vessels using jig gear will also be exempt from LLP requirements, once the Council's fixed gear recency LLP action is fully implemented. So, fishermen wishing to use relatively small vessels or jig gear will not be limited by LLP requirements. If the status quo is selected, it is possible that some entry in the non-trawl sector would occur, as several persons participating in this sector have expressed an interest in the fishery in the past. The sector has had relatively little historic participation, so the potential for the sector to successfully target rockfish has not been firmly established. In the long run, the prospect for entry, however, depends on the success of new entrants, since this sector has little history in the fishery and has not demonstrated that it can successfully prosecute rockfish.

Entry level trawl/fixed gear fisheries – EL-2

Under Alternative 2, 5 percent of each of the target rockfish species is set aside for the entry level fisheries (approximately 700 metric tons at the current TACs). This set aside is divided between the trawl and fixed gear sectors such that each receives an equal allocation of the aggregated TACs of target rockfish species available to the entry level fisheries. Because of operational differences, the trawl sector would receive its portion of the aggregate TACs first from the entry level TAC of Pacific ocean perch. If the entry level Pacific ocean perch TAC is less than the total allocation to the trawl sector, the sector receives proportional shares of the entry level northern rockfish and pelagic shelf rockfish TACs, such that aggregate entry level TAC is divided equally between the two gear types. For further discussion on the entry level allocation, see Section 2.4.1.

The entry level fishery is open exclusively to LLP license holders that are not eligible for the cooperative program. **Under this alternative, to participate in the entry level fishery, a vessel must submit an application to NOAA Fisheries, including a statement from a processor confirming an available market. As originally included in the Council's motion, this provision requires that the processor be "unqualified". Since no limit on processor entry is currently contained in the program, the Council should consider whether to limit the pool of processors that can confirm market availability. If the Council wishes to pursue an option that limits processors that can verify an entry level market, it should specify how the provision will be applied.**

In considering whether to extend a prohibition on processing for main program processors, the Council should also consider the experience of entry level participants in the pilot program. In the first two years of the pilot program, delivery scheduling posed challenges for trawl participants as a result of the race-for-fish management of the entry level trawl fishery and the prohibition on deliveries to processors qualified for the main program. If prosecution of the rockfish fishery conflicts with other activity at a plant, deliveries under the program can create logistical complications for the plants and can lead to delays and loss of fishing time for harvesters. Since the trawl entry level fishery can only support a few deliveries, no economies of scale are likely to be realized by processors gearing up for those deliveries. In the third year of the program, entry level participants are said to have resolved these issues allowing for orderly deliveries from the fishery. While this experience demonstrates that the program may work successfully under certain circumstances, the Council should consider that a single non-cooperative entrant can disrupt the fishery for others, under this derby management.

The entry level fishery would be prosecuted as a competitive limited access fishery. Vessels fishing the fixed gear entry level allocation in Federal waters must have an LLP (if required for the vessel to operate

in Federal waters) and must have registered for the entry level fishery. Fixed gear vessels that fish exclusively in parallel waters and do not have an LLP or a federal fisheries permit do not need to register for the program. The Council included an option to require VMS for fixed gear vessels that participate in the entry level fishery. Regulations governing the VMS requirement specifically apply to a “federal permitted vessel.” Thus, if a vessel was not required to carry, or did not voluntarily carry an FFP, the VMS requirement would not apply. Total acquisition and installation cost were approximately \$2,068 in 2008, while transmission and maintenance costs were approximately \$187 annually during the same time period (NMFS, 2008). The Pacific State Marine Fisheries Commission will reimburse up to \$3,100 to cover the costs of purchase and freight, but not the costs associated with sales taxes, installation, annual operator expenses, or replacement to meet regulatory requirements in the Alaska Region. Although the exact number of fixed gear vessels that could participate in the entry level program that already have VMS equipment installed is unknown, NOAA Enforcement believes that large percentage do not have VMS.

The trawl fishery is scheduled to open on the 1st of May. There are two options that address insufficient halibut PSC on the opening of the entry level trawl fishery. Under the first option, if halibut PSC are unavailable on the opening, the opening would be delayed until the next release of halibut PSC. Under the second option, if sufficient halibut PSC is not available, the fishery would open with halibut usage being deducted from the following quarter’s halibut PSC allowance. For further discussion on the entry level halibut PSC allocation, see Section 2.4.1.

In considering whether to maintain the entry level trawl fishery, the Council should also consider how that fishery interacts with the main program. In the years of the pilot program, no more than three vessels applied for and participated in the entry level trawl fishery. If divided equally, the entry level TAC would provide these vessels with in excess of 100 metric tons of fish each. This allocation would exceed the allocation of over one-third of the catcher vessel licenses qualified for the main program. While the allocation is uncertain (since entry to this fishery is only limited by the LLP), providing greater allocations to persons that do not qualify that those that qualify seems unusual. On the other hand, if the entry level fishery is intended to provide an opportunity to assess whether to buy a license for participation in the main program, these allocations might be justified. Yet, with no limits on entry, there is no certainty that the entry would serve this function. In addition, given the small number of participants in the main program, it is unlikely that the program will have turnover at a level needed to support any regular transition of entry level participants to the main program.

Fishing practices in the entry level trawl fishery are likely to resemble those in the main program. Since secondary species will be managed under the current MRAs (instead of direct allocations), fishing should not be constrained by incidental catch of secondary species. Some participants may try to catch secondary species to the MRA permitted amount. The small rockfish allocations when translated through the MRA mean that harvest of secondary species will be relatively smaller, making it difficult for an entry level participant to harvest secondary species to the MRA permitted amount. This could result in a substantial amount of discards, if participants do not use caution. Some entry level trawl participants could elect to harvest under the MRA amount to avoid overharvesting and discarding.

Historically, non-trawl vessels have very minimal participation in the CGOA target rockfish fisheries. Although the fisheries have opened to non-trawl participants on January 1st and not opened to trawl gear until early July, non-trawl harvests never exceeded one percent of the TAC for any of the target species during the qualifying years. Since implementation of the pilot program, the fixed gear sector has shown little interest in the rockfish fisheries. In the first two years of the program, a single vessel registered for the fixed gear entry level fishery. To simplify management of the entry level fixed gear allocation, all fixed gear harvests of primary rockfish species from Federal and parallel waters when the directed fishery is open are counted against the entry level allocation of that gear type. Given the relatively small harvest

of primary rockfish by the fixed gear vessels, this accounting has not affected the ability of sector members to participate in the fishery. Despite the minimal historic participation, some non-trawl fishermen continue to express an interest in prosecuting the entry level fishery. Most have said that they will participate primarily in the summer months when the weather is the best, allowing the fleet to more safely target these offshore rockfish. The potential success of these efforts cannot be predicted. If some participants are successful in the fishery, additional entry can be expected.

Since historic harvest suggests that the fixed gear sector may be unable to fully harvest its allocation, entry level trawl participants are permitted to harvest the fixed gear allocation after September 1st. This is accomplished by allowing both sectors to fish off the combined remaining TACs beginning on September 1st.

Fixed gear only fishery – EL-3

Under Alternative 3, only fixed gear sector would receive an entry level allocation of the primary rockfish species. The starting entry level set aside under this alternative would be between 1 and 10 metric tons of Pacific ocean perch, between 1 and 10 metric tons of northern rockfish, and between 10 and 30 metric tons of pelagic shelf rockfish. Increases in the subsequent year's allocation would be made (up to a specified cap) each time an allocation is more than 90 percent harvested. For further discussion of the allocation, see Section 2.4.1. Overall, the use of a relatively small starting fixed gear allocation (more in line with historic catches) and a mechanism for increasing the allocations with growth in the sector could help prevent stranding a portion of the TAC, which would occur, if the allocation to the fixed gear sector was disproportionate to their catches. Prosecution of the entry level fishery under this alternative will be supported by the general allowance of halibut PSC to fixed gear. Catch of all other species would be governed by existing rules to control bycatch (i.e., MRAs, and bycatch status management).

Unlike Alternative 2, participants in this fixed gear only entry level fishery would not need to register for the fishery. This may improve entry into these fisheries by removing an application deadline that would prevent a vessel from opportunistically deciding to enter the fishery midseason. However, if the Council requires VMS on fixed gear participants, it is likely that NOAA Fisheries would require these fixed gear participants to register for the entry level program in order to enforce the VMS requirement (see previous alternative for discussion on VMS costs).

Any vessel or gear type exempt from CGOA LLP requirements or any holder of a CGOA fixed gear LLP may enter a vessel in the fishery. The entry level fishery would be prosecuted as a competitive limited access fishery opening on January 1st each year. Although the limited access fishery will be managed similarly to other competitive fisheries in the Gulf of Alaska, a race for fish that dissipates rents is not likely, unless the sector greatly improves its catching power of these species.

2.4.4 Effect on management, monitoring, and enforcement Allocations

This section briefly summarizes management, monitoring, and enforcement requirements under the program. Under the status quo, management, monitoring, and enforcement requirements would revert to the LLP management seen prior to implementation of the pilot program in 2007. Under the cooperative program alternatives, management, monitoring, and enforcement requirements would likely be similar to the requirements seen in the current rockfish pilot program.

Status quo – CP-1 and CV-1

Under the status quo, management of the rockfish fisheries would revert to the LLP, under which managers oversee a limited access race for fish.

Non-trawl fishing in the rockfish fisheries would begin on January 1st. The trawl season would open in early July and ongoing catch would be monitored by managers with the closing for both gear types timed to coincide with harvest of the TAC.⁵⁰

Under status quo management, observer coverage would vary with vessel size. In general, vessels that are 125 feet or longer LOA are required to have 100 percent observer coverage. Vessels 60 feet or greater in length and under 125 feet are required to have 30 percent observer coverage. Vessels under 60 feet have no observer requirement. Shoreside and floating processors that process in excess of 1,000 metric tons of groundfish in a calendar month are required to maintain 100 percent coverage to observe landings. Shoreside and floating processors that process less than 1,000 metric tons and more than 500 metric tons of groundfish in a calendar month are required to maintain 30 percent observer coverage (CFR §679.50).

Entry Level Trawl/Fixed Gear Fisheries - EL-2

Under this alternative, NOAA Fisheries would oversee two entry level, limited access, derby fisheries – a trawl fishery and a non-trawl fishery, with each receiving 2.5 percent of the TAC of CGOA rockfish (approximately 700 metric tons at current TACs) All participants would be required to submit an annual registration in the fall, prior to the year in which the fishing occurs. All other species (except halibut PSC) would be managed under the standard MRAs that currently apply to the entry level fisheries. Observer coverage levels would be the same as applicable to other LLP fisheries.

The season for the fixed gear fishery would open January 1st, while the trawl season would open on May 1st. As in other limited access fisheries, NOAA Fisheries would monitor ongoing harvests timing the closing to coincide with full harvest of the TAC. Since trawl vessels can harvest on the order of 100 metric tons in a day, timing a closure to avoid overharvest is very difficult. Given this harvest capacity, in the absence of a gentlemen's agreement to limit harvests, it is likely that managers will use short openings of 24 hours or less. Management of the small allocation to trawl vessels in the entry level fishery is likely to continue to be problematic under this alternative.

NOAA Fisheries will require vessels fishing the entry level allocation in Federal waters to have an LLP and to register for the entry level fishery. Fixed gear vessels that fish exclusively in parallel waters and do not have an LLP or a federal fisheries permit would not need to register for the program. To simplify management of the entry level fixed gear allocation in the rockfish pilot program, all fixed gear harvests of primary rockfish species from Federal and parallel waters when the directed fishery is open will be counted against the entry level allocation of that gear type. Given the relatively small harvest of primary rockfish by the fixed gear vessels, this accounting of fixed gear harvest would likely have little affected on the ability of sector members to participate in the fishery.

Entry Level Fixed Gear Only Fishery - EL-3

In contrast to the trawl/fixed gear entry level alternative described above, under this alternative, only fixed gear sector would receive an entry level allocation of the primary rockfish species. Allocations of each rockfish species would be set by the Council at a base level, which would be subject to incremental increases (equal to the initial allocation) each time the sector harvested in excess of 90 percent of the allocation. A cap on the allocation of each primary rockfish species would limit the growth of these allocations.

⁵⁰ Additional information concerning current management appears in the description of the affected environment above.

The fixed gear alternative would be conducted on a limited entry basis, as described under the previous entry level alternative, with all fixed gear harvests of primary rockfish species from Federal and parallel waters when the directed fishery is open will be counted against the entry level allocation of that gear type. To further simplify management under this alternative, NOAA Fisheries would not require vessels fishing the fixed gear entry level allocation to register.

Catcher processor cooperatives only – CP-2

Under this alternative, the catcher processor sector would receive allocations of target rockfish, secondary species, and halibut PSC. In each year, eligible catcher processors would then have the option of joining a cooperative, which would fish an allocation (target rockfish, secondary species, and halibut PSC) based on the collective histories of its members in accordance with a cooperative agreement, or refrain from fishing in the rockfish fishery for that year. Since these two different types of allocations would be managed differently, the discussions of management of cooperatives and the limited access fishery are separated.

The implementation of the program will require that NOAA Fisheries determine the pool of eligible licenses for the catcher processor sector, the sector allocation and the individual histories of those eligible licenses. Cooperative agreements will be filed with NOAA Fisheries every year, which must be reviewed for adequacy (including monitoring plan). NOAA Fisheries will be required to make annual catch allocations to cooperatives (based on member histories) and to the limited access fishery.

NOAA Fisheries would require that all participants in the program to submit an annual registration in the fall prior to the year in which the fishing occurs. This requirement provides NOAA Fisheries with the time necessary to incorporate any allocations to participants in the program in the annual TAC specifications process.

Under all of the program alternatives, cooperatives would be permitted to fish their allocations during an extended season, opening on May 1st and closing on November 15th. This season is set to balance the interests of participants in distributing landings over a longer period of time each year and the conservation interest in managing stocks and catch in the fishery.⁵¹ The season timing will accommodate management responsibilities including observer requirements and catch management, including halibut PSC.

Quota programs can increase the incentive of participants to misreport and high grade catch, while at the same time increasing the burden on managers to provide highly defensible estimates of catch, especially when those estimates directly impact quota holders. NOAA Fisheries has dealt with these issues by clearly articulating goals for the management of quota allocations and imposing new and more stringent monitoring and observer requirements as these programs have been developed. Therefore, management of allocations will require that all catch under the program be monitored similar to the existing pilot program. These monitoring standards include:

- 1) Two observers to ensure each haul is observed;
- 2) A motion compensating flow scale to weigh total catch separately for each haul;
- 3) An observer sampling station with a motion-compensated platform scale and sufficient sample storage space;
- 4) A prohibition against crew entering the bin or tank unless a NOAA Fisheries approved annual bin monitoring inspection has been completed;

⁵¹ A brief discussion of rockfish reproduction and its consideration in developing season openings is contained in section 3.4.3.

- 5) One sorting line between the flow scale and the observer sample collection point to allow observers access to unsorted catch at a single point, and;
- 6) A prohibition of allowing fish to remain on deck outside the codend to minimize the ability of vessel's to presort catch.

Under all the program alternatives, vessels in a cooperative would be permitted to fish their allocations at any point during the extended season. During the trip, fishing outside of the program could take place. An additional monitoring requirement would be needed to ensure adequate observer deployment. For catcher processors, notices will be required prior to initiating a trip that would include fishing under their program allocation. The notification would establish a default assumption that any fishing on the trip would be under the program. Prior notice to the observer of the vessel's intent to fish in and out of the program will be required to allow debiting of catch to the appropriate accounts in the catch accounting database. This notification would be required to occur prior to the haul being brought aboard. This system would effectively require haul-by-haul notification of whether fishing is under the program, if the catcher processor intendeds to engage in both fishing under the program and outside the program on a single trip.

NOAA Fisheries would require minimum monitoring standards for the catcher processor fleet at any time the vessel is fishing in the program. This would include all hauls outside the program during a trip for which NOAA Fisheries was notified the vessel would be fishing under the program. Each of these species groups could be subject to differing harvest limitations, including MRAs. This necessitates separate accounting of catch for each specific program and purpose. NOAA Fisheries must be able to ensure compliance with regulations governing the fishery and there must be an authoritative record of quota fish harvested.

Two options under consideration are a prohibition of directed fishing for Pacific cod and sablefish by vessels fishing rockfish program allocations and to manage Pacific cod and sablefish under a modified MRA (which in addition to affecting the manner and amount of harvests would also operate as an effective prohibition on targeting). Given that Pacific cod is currently managed with a revised MRA of 4 percent of the target rockfish and sablefish is currently allocated to the catcher processor sector, only management of sablefish would be affected by the option to prevent directed fishing.

Under both catcher processor alternatives, MRA enforcement for the catcher processor sector would be on a trip-by-trip basis (instead of instantaneous, as under the current program). A fishing trip is defined at 50 CFR 679.2 as:

- (1) *Retention requirements (MRA, IR/IU, and pollock roe stripping).*
 - (i) *With respect to retention requirements of MRA, IR/IU, and pollock roe stripping, an operator of a catcher/processor or mothership processor vessel is engaged in a fishing trip from the time the harvesting, receiving, or processing of groundfish is begun or resume in an area until:*
 - (A) *The effective date of a notification prohibiting directed fishing in the same area under § 679.20 or § 679.21;*
 - (B) *The offload or transfer of all or fish product from that vessel;*
 - (C) *The vessel enters or leaves an area where a different directed fishing prohibition applies;*
 - (D) *The vessel begins fishing with different type or authorized fishing gear; or*
 - (E) *The end of a weekly reporting period, whichever comes first*

In general, relaxation of MRA accounting may cause the current MRAs to be less limiting to retention of groundfish species. It is expected that a longer MRA accounting period may increase the flexibility that an operator has to improve the value of a fishing trip through retaining greater amounts of incidental

species that have higher expected value than other species. While the change in the MRA accounting could reduce discards, the relaxed accounting regulations could encourage greater catch of groundfish species that require protection. Managers can be expected to observe groundfish catch and react by restricting directed fishing, or closing a fishery that is exploiting a groundfish species too quickly, at too high a rate, or that is approaching a TAC or OFL. It is anticipated there would be negligible practical effect on the mechanics or frequency of MRA accounting by either NOAA Fisheries Enforcement or U.S. Coast Guard personnel during dockside or at-sea boarding's. NOAA Fisheries Enforcement personnel would likely continue to be able to conduct audits of compliance with MRA requirements based upon analysis of WPR data. Overall, it is likely that trip-by-trip MRA compliance would reduce regulatory discards with little threat of increasing misreporting or other unlawful activities.

Included in the catcher processor alternatives are excess share limits that NOAA Fisheries would be required to monitor. The excess share limits are limits on consolidation of harvest up to 60 percent and individual caps that prevent any person from holding or using in excess of 20 percent of the sector's allocation.

In addition to managing aspects of the rockfish target fishery, NOAA Fisheries may need to approve, monitor, and manage sideboards. There are a suite of proposed GOA sideboard limits for catcher processors operating in the CGOA rockfish program. There are two broad categories of sideboards – those that establish catch limits, and those that prohibit directed fishing. Catch limits are divided into limits on harvest in other GOA rockfish fisheries and limits on the amount of halibut mortality that can be used in GOA flatfish fisheries. The proposed sideboard limits would be in effect only during the month of July. The sideboards are designed to restrict fishing during the historical season for the fishery, but allow eligible rockfish harvesters to participate in fisheries before and after the historical rockfish season. Management of the sideboard limits are similar to other sideboard programs in that once the sideboard limit is reached, directed fishing would be closed.

Specific sideboard provisions include a limit on West Yakutat pelagic shelf rockfish, Pacific ocean perch, and Western GOA pelagic shelf rockfish, Pacific ocean perch, and northern rockfish. There would also be a limit halibut PSC to constrain harvest from fisheries that are typically halibut constrained. In addition, catcher processors that elect to fish in the limited access fishery (CP-3) that have in excess of 5 percent of the sector's qualified catch of Central GOA Pacific ocean perch are subject to additional limits from July 1 until 90 percent of the Central GOA Pacific ocean perch that is allocated to the catcher processor limited access fishery has been harvested. For qualified participants that choose to opt-out of the rockfish program, they would be prevented from participating in any directed fishery that the license holder did not participate in during the first week of July in at least two of seven qualifying periods.

Complicating the rockfish program sideboards for the catcher processor sector are Amendment 80 sideboards. Implemented in 2008, Amendment 80 program includes sideboards for pollock, Pacific cod, Pacific ocean perch, northern rockfish, pelagic shelf rockfish, and halibut PSC for the same catcher processor fleet that would likely be limited by sideboards in the new rockfish program. As seen in Table 2-70, Amendment 80 GOA sideboards appear less restrictive relative to the proposed rockfish program sideboards, but rockfish program sideboards would apply only for the month of July, while the Amendment 80 sideboards apply all year. Given that both rockfish program sideboards and Amendment 80 sideboards are based on historical retained catch by the sector, it is likely that both sideboards are constraining of fishing effort in a similar fashion. Given that rockfish program and Amendment 80 sideboard limits would likely curtail the same catcher processor fleet from encroaching on other fisheries, it is likely that having both sets of sideboards would only duplicate management costs and increase the complexity of the sideboard fisheries with no added benefit.

Table 2-70. GOA rockfish and halibut PSC sideboard limits for the rockfish program and Amendment 80

	Rockfish Program Sideboard %*	Amendment 80 sideboard %**
Western GOA		
Pacific ocean perch	61.10	99.40
Pelagic shelf rockfish	63.30	76.40
Norther rockfish	78.90	100.00
West Yakutat		
Pacific ocean perch	72.40	96.10
Pelagic shelf rockfish	76.00	89.60
GOA Halibut PSC		
Shallow water complex		
Jan 20 - Apr 1		0.48
Apr 1 - July 1		1.89
July 1 - Sept 1		1.46
Sept 1 - Oct 1		0.74
Oct 1 - Dec 31		2.27
July 1 - July 31	0.54	
Deep water complex		
Jan 20 - Apr 1		0.12
Apr 1 - July 1		1.07
July 1 - Sept 1		5.21
Sept 1 - Oct 1		0.14
Oct 1 - Dec 31		3.71
July 1 - July 31	3.99	

* Sideboard is from July 1 to July 31

** Sideboard is from January 1 to December 31

To manage and monitor these sideboard limits, NOAA Fisheries would require vessels that are subject to the sideboard limits make a declaration prior to fishing in any fishery that is limited by a sideboard during July. Vessels subject to these sideboard limits must meet all the increased monitoring standards described above to ensure that all catch harvested while participating in a sideboarded fishery will be assessed against the overall sector harvest limit. NOAA Fisheries would not provide an individual allocation of sideboard fisheries, but will establish a sector allocation.

NOAA Fisheries must also monitor any applicable standdowns in the GOA non-pollock groundfish fisheries. These standdowns are intended to operate as sideboards, preventing rockfish participants from encroaching on other fisheries. Standdowns have a maximum length of two weeks, but could be shorter. If a participant joins a cooperative and that cooperative begins fishing the person's allocation prior to July 1, the traditional start date for the fishery, a two week standdown will apply to that participant during July. If the cooperative to which a participant belongs chooses to begin fishing the person's allocation during the traditional July opening, the standdown would last either 2 weeks or until 90 percent of any annual allocations stacked with the participant's are fished. NOAA Fisheries will require participants subject to standdowns to report fishing activities during the period of the standdown and announce trips. Monitoring the 90-percent harvest requirement will be simplified because of the requirement of complete observer coverage and weighing of harvests.

NOAA Fisheries will be required to manage and monitor cooperative sideboards, which could be used to limit each cooperative to its historic catch in each of the July GOA groundfish fisheries other than target rockfish, in place of the standdowns. To use a cooperative sideboard, in lieu of standdowns, members of a cooperative will be required to submit to NOAA Fisheries a cooperative management plan that

demonstrates that the cooperative will actively and adequately monitor harvests of members to ensure compliance with the harvest limitations of the cooperative sideboard. Essentially, NOAA Fisheries would require a catch monitoring plan from the cooperatives sufficient to ensure that catch is adequately accounted for, monitored, and reported.

Catcher processor cooperative or limited access – CP-3

Under this alternative, catcher processors would have the option of joining a cooperative or fishing a limited access fishery that receives the allocation of all non-members of cooperatives. The cooperative portion of the fishery would be managed as described under the previous alternative.

Management of a limited access fishery would differ substantially from the management of cooperatives. Under limited access, the fishery would be prosecuted early in July, with managers monitoring harvests and timing the closing of the fishery to coincide with harvest of the sector TAC. The increased monitoring requirements and observer coverage described for the cooperatives would be the same for the limited access fishery (i.e., two observers, flow scales, observer sampling stations). Participation in the limited access component cannot be predicted. If most catcher processors choose to join cooperatives, however, it is possible that the allocation could be so small that the fishery would be opened for a very limited time, the length of which would be announced prior to the opening (e.g., a 12-hour opening announced prior to fishing). The length of any such opening would be based on estimates of harvest rates from previous seasons or openings and the estimated effort of participating vessels. If the amount of fish remaining available after the closure is adequate to support an additional opening (without overage), and additional opening could be scheduled. Alternatively, if limited access participants organize harvests, it is possible that small allocations could be fished in a manner similar to cooperative harvests. This organization can ease the management burden associated attempting to constrain harvests to the TAC.

This organization might be preferred to joining a cooperative depending on the differences in sideboard management or secondary species management in the limited access and cooperative fisheries. If eligible catcher processors perceive an advantage under the limited access management, it is possible that they would fish the limited access instead of joining a cooperative. If these vessels are able to organize their catch in the limited access, it could be possible to gain the advantages of cooperative type management, without the constraining management provisions that are intended to apply to cooperatives. Although this benefit to participants may be perceived as unfair and inconsistent with the intent of the program, managers may need to expend less effort overseeing the fishery.

In addition to managing target rockfish harvests, NOAA Fisheries would also be required to manage secondary species allocations to the limited access fishery. Catcher processors could receive secondary species allocations of sablefish, thornyheads, shortraker, and rougheye. These secondary species allocations are based on historic harvest when targeting rockfish and are intended to operate as hard caps on total harvests of each species. In the current limited access fishery, management of secondary species is accomplished using reduced MRAs. NOAA Fisheries would continue to use reduced MRAs to manage allocated secondary species. Adjustment of the MRAs downward will be used to limit the incentive to target secondary species and maintain catch to a level below the allocation.

Non-allocated species will also need to be managed in the limited access fishery. These species will be managed under existing MRAs, with the exception of Pacific cod, which will be managed with a revised MRA of 4 percent of the target rockfish. Initially, the Council, when developing the pilot program, considered allocating Pacific cod to catcher processors in a manner similar to allocated secondary species. However, an allocation of Pacific cod could have resulted in an allocation that was not adequate to support prosecution of the targeted rockfish allocation by catcher processors, as catcher processors have relatively low historic levels of harvest of Pacific cod. Likely, it is still the case. The revised MRA is

intended to restrict Pacific cod harvests to a level similar to historic levels, using an MRA that allows discards to ensure that Pacific cod does not restrict harvest of target rockfish.

Similar to above catcher processor alternative, there are a suite of proposed excessive share limits and GOA sideboard limits for this alternative. For a detailed description of those excessive share limits and sideboards and their effects on management see the discussions above.

Catcher Vessel Sector - Harvester Only Cooperatives – CV-2

Under the harvester only cooperative alternative, an eligible catcher vessel license holder must join a cooperative to participate in the rockfish program. Eligible license holders that do not join a cooperative are restricted from participating in that years CGOA rockfish fishery. Cooperative members would fish an allocation (target rockfish, secondary species, and halibut PSC) based on the cumulative history of its members in accordance with a cooperative agreement.

As under the catcher processor alternatives, implementation of the program will require that NOAA Fisheries determine the pool of eligible persons for the catcher vessel sector, the sector allocation and the individual histories of eligible persons. Cooperative agreements (including monitoring plans) will be filed with NOAA Fisheries every year, which must be reviewed for adequacy. NOAA Fisheries will be required to make annual catch allocations to cooperatives (based on member histories).

As under the catcher processors alternatives, NOAA Fisheries would require that all participants in the pilot program in this sector submit an annual registration in the fall, prior to the year in which the fishing occurs, to facilitate the incorporation of allocations in the annual TAC specifications process.

Cooperative allocations would be fished during the extended season described under the catcher processor alternatives, recognizing, of course, that catcher vessel catch cannot be processed onboard and must be delivered to a federally registered processor. Fishing of exclusive allocations during an extended season will require levels of monitoring similar to those used in the current pilot program. Management of allocations will require that all catch under the program be monitored. Participants would need to make announced rockfish program trips, to distinguish rockfish program fishing from participation in other fisheries and allow deployment of adequate observer coverage. All fishing in a trip under the program would be exclusively under the program. Using this system of exclusive trips would also facilitate shoreside monitoring of offloads and account of catch against allocations.

An option provides for a Kodiak landing requirement. If adopted, NOAA Fisheries would need to monitor the location of all catcher vessel landings. Since the option would apply to all shares, administration would be very straightforward and have a minimal burden.

Most catcher vessel catch accounting will take place shoreside where each processor will be required to submit and comply with a Catch Monitoring and Control Plan (CMCP) that details how the shoreside processor will ensure accurate sorting and weighing of quota catch. An observer will be required at each shoreside processor to monitor for compliance with the CMCP. In addition to the shoreside requirements, NOAA Fisheries would also require a NMFS-certified observer to be onboard the catcher vessel at all times when the vessel is used to harvest fish in the CGOA from May 1 through the earlier of November 15 or the effective date and time of an approved rockfish cooperative termination of fishing declaration.

Sideboards will also be managed and monitored by NOAA Fisheries for the catcher vessel sector under this alternative. To manage and monitor this sideboard, the NOAA Fisheries would require that vessels that are subject to the sideboard to make a declaration prior to fishing in any sideboarded fishery during July. Any participant who intends to, or does, participate in any of these fisheries in July must have

adequate observer coverage on board the vessel so that all catch harvested during a sideboarded fishery will be assessed against the overall sector harvest limit. NOAA Fisheries would not provide an individual allocation in any of the sideboard fisheries, but will establish a sector limit.

As would be applied to catcher processors, a general sideboard would limit catcher vessel participants, in the aggregate, to their historic harvests in other fisheries in the month of July, the month during which the rockfish fisheries have been prosecuted historically. In this alternative, there are currently two options under consideration for WGOA and WYAK primary rockfish species. The first option would limit eligible catcher vessels to their aggregate historic catch of primary rockfish species in these two areas, while the second option would prohibit eligible catcher vessels from directed fishing for the primary rockfish species in these areas. Since implementation of the rockfish pilot program in 2007, NOAA Fisheries has routinely determined that the relatively small sideboard percentages for these GOA rockfish species in WGOA and WYAK make these fisheries unmanageable, and thus have prohibit directed fishing for the primary rockfish species. It is likely that NOAA Fisheries would continue to prohibit the catcher vessel sector from directed fishing for these primary rockfish species in the WGOA and WYAK under the new rockfish program if either option were selected by the Council. Given that both options would likely result in a prohibition on directed fishing, a permanent prohibition would likely be more efficiently managed by NOAA Fisheries.

Catcher vessel participants in the sector will be limited to their aggregate historic catch of halibut PSC in fisheries in the Gulf that close because of halibut bycatch. These fisheries are the arrowtooth flounder, deep water flatfish, shallow water flatfish, flathead sole, rex sole, and Pacific cod. Since halibut in the GOA is not managed on a fishery basis, but is managed for the deep-water complex and the shallow-water complex, management of the sideboard on a fishery-by-fishery basis would be substantially more complicated than managing one sideboard for the deep-water complex and a second sideboard for the shallow water complex. NOAA Fisheries would manage two separate halibut sideboards, one for the deep water complex and the other for the shallow-water complex.⁵² The Council also included an option that would limit all catcher vessels to the shallow water halibut complex fisheries (except for rockfish target fisheries in CGOA, WYAK, and WGOA) for the month of July, closing the deep-water complex fisheries in the CGOA, WYAK, and WGOA to these catcher vessels for the month of July. If the Council selected this option, applying a halibut-based limit to the catcher vessel sector only in the shallow water complex fisheries, NOAA Fisheries management would be simplified.

Two other potential sideboard measures that could be included in the new rockfish program are a sideboard limit for BSAI Pacific cod during the month of July and a prohibition on qualified rockfish catcher vessels from participating in the trawl limited access for Alaska plaice, arrowtooth flounder, flathead sole, other flatfish, rock sole, yellowfin sole, and Pacific ocean perch fisheries in the BSAI in the month of July. In the current rockfish pilot program, the catcher vessel sideboard limit for BSAI Pacific cod is 0 percent, so NOAA Fisheries has prohibited directed fishing for BSAI Pacific cod during the month of July. In addition, the rockfish pilot program prohibits qualified rockfish vessels from participating in these fisheries during the month of July. These sideboard measures were original included in the pilot program to prevent rockfish participants from adversely affecting historical participants in these BSAI groundfish fisheries. However, the implementation of Amendment 80 and Amendment 85 in 2008 likely reduced or eliminated any adverse affects qualified rockfish catcher vessels would likely have on historical BSAI groundfish participants. Amendment 80 provides groundfish allocations to qualified non-AFA trawl catcher processors with the remaining BSAI groundfish being allocated to all other trawlers, while Amendment 85 provides sector specific allocations of BSAI Pacific cod. If the Council elects to retain these sideboard measures in the new rockfish program, NOAA Fisheries would continue to

⁵² The deep-water complex includes sablefish, rockfish deep water flatfish, rex sole, and arrowtooth flounder. The shallow-water complex includes flathead sole, shallow water flatfish, pollock, and Pacific cod.

prohibit rockfish eligible catcher vessels from directed fishing for BSAI Alaska plaice, arrowtooth flounder, flathead sole, other flatfish, Pacific ocean perch, rock sole, yellowfin sole, and Pacific cod during the month July. If these sideboard measures are not included in the new rockfish program, NOAA Fisheries would continue to monitor the status of these BSAI fisheries without any additional complication from sideboard limits.

Catcher Vessel Sector - Allocation of Harvester Shares to Processors - CV-3

In this alternative eligible license holders and persons holding rockfish QS initially allocated based on processing history must join a cooperative to participate in the rockfish program. Eligible license holders and QS holders who choose not join a cooperative are restricted from participating in that years CGOA rockfish fishery. Initial allocations of target rockfish under this alternative would be divided between eligible license holders (i.e., harvesters) and eligible processors, with processors receiving 10, 20, or 30 percent of the sector's pool.

Initial allocations to license holders under this alternative are administered in the same manner as under the harvester only cooperative alternative. To make processor allocations of QS, NOAA Fisheries must determine the pool of eligible processors and relative histories based on qualifying histories. An option exists in this alternative to qualify processors that participated in the entry level fishery under the rockfish pilot program. These processors would receive allocations of harvest shares based on their processing histories during a special qualifying period. Similar to the harvester only cooperative alternative, cooperative agreements will be filed with NOAA Fisheries every year. Annual allocations based on QS initially allocated to processors would be subject to the same allocation and harvest rules governing catcher vessel allocations (including the requirement that all catch be made by vessels carrying LLPs that qualify for the program).

An option is included for consideration that would require that the annual allocations yielded by QS initially allocated to processors be harvested by a vessel that is not affiliated with the QS holder.

Administration of this provision would require NOAA Fisheries to track the annual allocations yielded by these QS and annually collecting affiliation information from these QS holders. This would effectively require IFQ level oversight of the harvest of these allocations, doing away with some of the administrative benefits that arise under cooperative management. In addition, it is not clear that the provision would have its intended effect without further restrictions on the harvests of these affiliated vessels. To have the intended effect, the provision would also need to prohibit exchanges among cooperative members that allow the affiliate of the QS holder to harvest allocations of other members in exchange for the restricted annual allocation. Establishing this restriction, would require monitoring all catches of any affiliated vessel along with all allocations under the program. Given these tracking challenges and the uncertainty of whether the provision could be avoided through complex exchanges, the Council should consider whether this option should be advanced.

Otherwise, fishing activity, excessive share limits, and sideboards would similar to the previous alternative. So except as described, implementation, monitoring and management of the fishery under this alternative would be the same as under the previous alternative.

Catcher Vessel Sector - Severable Harvester/Processor Association (No Forfeiture) - CV-4

Under this alternative, eligible license holders must join a cooperative. The license holder has full discretion in choosing a cooperative both initially and annually thereafter and may change cooperatives annually without forfeiture. Implementation, monitoring and management of this alternative would be the same as under the first alternative, except that cooperative agreements would be required to identify the associated processor. The processor would need to have a federal processor permit and, if applicable, would need to comply with the Port of Kodiak landing requirement. For shore plants, the plant would

need to be located in Kodiak to form the association. If a floating processor were to associate with a cooperative that floater would need to be positioned in Kodiak to receive landings from the fishery.

Except for these distinctions, this alternative is the same as the harvester only cooperative alternative, and the fishery would be implemented and managed as under that alternative.

2.4.5 Effects on harvest participation and fishing practices

Patterns and levels of harvester participation and fishing practices in the CGOA rockfish fisheries are likely to vary under the different alternatives. Under the status quo alternative participation and fishing practices are likely to be similar to prior to implementation of the rockfish pilot program in 2007. Under the cooperative program alternatives, participation and fishing practices will more closely resemble practices under the pilot program. Yet, differences in management under the alternatives considered here and the pilot program management may be expected to result in some notable differences in participation and fishing practices.

Status quo

Under the status quo, the CGOA rockfish fishery would revert to LLP management. Table 2-2 shows the number of LLP licenses with CGOA endorsements by vessel and gear type. Table 2-3 above shows historic participation from 1996 to 2006 by sector. Reverting back to LLP management is likely to result in the fishing practices and patterns similar to those prior to the pilot program. In that fishery, the non-trawl fishermen took very little of the TAC between the opening on the non-trawl fishing in January and the opening of the trawl fishery in July. Trawl fishermen raced for catch of rockfish when the trawl season opened in July. Typically, Pacific ocean perch was caught first, followed by northern rockfish and pelagic shelf rockfish. In the years leading up to the implementation of the pilot program, catcher vessels increased their catch surpassing the catch of catcher processors.

The quality of fish harvested (and fish products) would likely suffer from a return to the race for fish. Rockfish are considered relatively difficult to handle because of their spines and scales. These characteristics are said to make it more difficult to maintain quality when racing to maximize catch. In addition, harvesters that try to maximize catch on a tow are likely to overstuff their nets, which also can affect fish quality. Catcher vessel holds typically use refrigerated sea water to maintain quality.

Secondary species (such as Pacific cod, sablefish, thornyhead, shortraker, and rougheye) are often harvested on separate tows from the target species. Rockfish fishermen typically receive a higher price for these fish, but processors demand better handling and quality. To meet these demands, catcher vessels often separate their secondary species harvests, particularly Pacific cod and sablefish, often carrying sablefish in iced totes, rather than in the refrigerated sea water of their holds.

Trawl catcher processors must not only harvest fish rapidly, but also must process that fish rapidly, to maintain quality and accommodate additional catch. Discards can occur if the fish is not processed quickly enough maintain its quality. Rockfish are generally considered more difficult to handle and process than species such as pollock and Pacific cod because of their spines and scales. These fish characteristics complicate efforts to rapidly process the fish for catcher processors. Larger vessels that can process catch more quickly and have larger holds are likely have some advantage over smaller vessels that cannot move fish through their plants as quickly.

Given the number of endorsed LLP licenses substantially exceeds the number of vessels historically participating in the fishery, substantial growth in participation would be permitted under the status quo. Whether new entry would occur depends largely on whether potential entrants perceive a gain from entry. With the LLP management, the seasons will likely shorten. With a shortened season, most LLP holders

are unlikely to perceive substantial gain from entering the fisheries. As a result, modest (if any) increase in participation should be expected if fishery reverts to LLP management. In addition, any entrants would have to forego opportunities in other fisheries and would need to compete for landings with current participants. Currently, the opening of the rex sole and deep-water flatfish fisheries in the Gulf of Alaska and the Western Gulf of Alaska rockfish fisheries coincide with the opening of the CGOA rockfish fisheries. These simultaneous openings distribute effort across fisheries and areas and are likely to help curtail entry by fisherman eligible for the CGOA rockfish fisheries that perceive these other opportunities.

Entry by non-trawl participants depends on whether participants in that sector are able to realize significant returns for harvests. Potential for success of non-trawl entrants is not apparent, given the historical participation of these vessels. Whether future non-trawl participants will be able to succeed in the fishery cannot be determined. Growth is most likely to occur in the pelagic shelf rockfish fishery, the only fishery in which non-trawl participants have shown any consistency in participation.

Catcher processor alternative 2 – cooperative only - CP-2

Under this alternative, eligible catcher processors could either join a cooperative or not participate in the Central Gulf rockfish fisheries. Historic harvests of Central Gulf rockfish are used to make allocations, so distribution of Central Gulf rockfish allocations both to and within the catcher processor sector will be similar to the historic distribution of harvest, during the qualifying years. The number of persons receiving allocations is approximately twice the average annual participation in the fisheries, showing that some participants have moved in and out of the fisheries over time.

Within each cooperative, it may be anticipated that each member would receive revenues based on the allocation that the person brings to the cooperative, with participants that fish shares of others receiving compensation for their fishing expenses. Fishing within a cooperative, however, could be far more concentrated than the underlying allocations. The most likely scenario that would lead to consolidation of rockfish fishing on fewer vessels than receive allocations arises out of the choices of persons that receive small rockfish allocations under the program.⁵³ Persons eligible for the program that receive relatively small allocations could choose to join a cooperative only to allow other members of the cooperative to fish their allocations. These eligible catcher processors would save on costs associated with gearing up for the fishery and, depending on the arrangement in the cooperative, may have the opportunity to increase activities in other fisheries under intra-cooperative arrangements of sideboard harvests.⁵⁴ A second possibility is that persons eligible for the sector with small allocations could choose to opt-out of the program for the year, forgoing the opportunity to fish CGOA rockfish. Allocations to these vessels would be redistributed among cooperatives in proportion to their members' qualifying histories. Eligible catcher processors that choose not to enter a cooperative would not be required to standdown in fisheries in which they have met a minimum participation threshold of two years of the seven qualifying years. Whether some or all of these vessels would choose to remain out of cooperative cannot be predicted, and depends on their opportunity in other fisheries. In the first year of the program, six licenses elected to "opt-out" of the program, while in 2008 and 2009 three licenses chose to "opt-out".

In addition to the consolidation of relatively small rockfish allocations (through either "opting-out" or joining a cooperative), other members of the sector could decide to consolidate their rockfish allocations to realize efficiencies in the rockfish fisheries and other fisheries. Cooperatives that maintain an adequate monitoring plan during all fishing for CGOA rockfish sideboard fisheries would be permitted to harvest its allocation over the longer season, freeing its members to enter other fisheries in the beginning of July

⁵³ Under all of the qualifying year options, some eligible catcher processors would receive target rockfish allocations of less than 50 metric tons (based on the 2009 TACs).

⁵⁴ These cooperative participants could be limited in other fisheries in July by sector sideboards and sanddowns.

(without a standdown). This ability to enter other fisheries should lead to cooperatives harvesting their allocations either earlier or later than the traditional July opening, to free their members to compete in other fisheries that open early in July. The cooperative, however, would only be permitted to harvest its historic share from those other fisheries, limiting any potential impact on others. Because of this flexibility, rockfish catcher processors cooperative participants should be expected to fully harvest their historic shares (sideboard amount) from these other fisheries, provided that cooperatives are able to develop sideboard monitoring plans that are satisfactory to NOAA Fisheries.

Under this alternative, catcher processor cooperatives would either fish their annual allocations or transfer them to other catcher processor cooperatives or to catcher vessel cooperatives. Catcher vessel cooperatives would not be permitted to receive catcher vessel annual allocations. In each of the first three years of the pilot program, two catcher processor cooperatives formed. One did not fish actively, instead transferring most of its allocation to shore-based cooperatives, as the primary owner in the cooperative has shore-based affiliates. Allocations of shortraker rockfish were transferred within the sector to other catcher processor cooperative in two of three years of the program. As seen in the pilot program, transfers to the catcher vessel sector are most likely to occur between catcher processors that have affiliations with the shore-based sector. The potential for transfers to catcher vessels might increase, if participants in the shore-based sector are able to develop markets for higher quality or more highly processed products that cannot be served by the offshore fleet that produces mostly frozen head and gut and whole products. To date, these markets have not developed. In the fourth year of the program (under which fishing will begin in May of 2010), three catcher processor cooperatives have formed. This third cooperative's members are vessels that previously participated in the limited access fishery.

On option under consideration would require at least two independent entities to form a cooperative. It should be noted that in the first four years of the program, all cooperatives in the catcher processor sector were single entity cooperatives. Consequently, none would qualify as a cooperative under the proposed option. In addition, the single entity rule is likely not compatible with this alternative, which has no provision for a limited access fishery. The requirement of two entities for cooperative formation could be used by some sector members to exclude another sector member from cooperative participation. This type of action could effectively force an entity out of the fishery altogether, since no limited access opportunity exists under this alternative. In addition, the gain from a multiple entity rule is less significant in the catcher processor sector of the rockfish fishery, as many entities have multivessel operations. At a minimum, cooperative management would allow each entity (and its vessels) to be managed and monitored as a unit, as opposed to managing each vessel independently. Given this benefit, and the potential inequity that would arise, if an entity is unable to reach agreement with others and is forced from the fishery, the Council should consider whether a requirement of two entities for cooperative formation should be advanced under this alternative.

10 Catcher processor cooperatives

Option: A minimum of two independent entities are required to form a CP cooperative (using the 10% AFA rule)

Although cooperatives that manage their own sideboards may choose to harvest their allocations outside of the traditional early July season, the exact timing of their CGOA rockfish fishing will likely depend on the operational needs of cooperative members and their fishing success. Low catch rates of rockfish or high rates of incidental catch of secondary species or halibut could also lead a cooperative to change its timing of rockfish targeting. During the first three years of the rockfish pilot program, a slight shift in the temporal distribution of catcher processor rockfish catches by cooperatives did occur; however, the shifts

generally occurred within the summer months. Some longtime participants in the fishery suggest that rockfish aggregations are at their greatest in the summer months. If participants observe relatively high aggregations (and catch rates) in the summer months, it is likely that their harvests will be concentrated in the summer regardless of the extended season.

The allocations of secondary species are based on total harvests made in the fisheries during the qualifying years. Since the allocation is the portion of the total catch made by the catcher processor sector in the rockfish fishery, the allocation is intended to credit harvesting at its historic rate. Secondary species are required to be retained, with all harvests counting against the allocation of the cooperative. The allocation of each secondary species to a cooperative will operate as a hard cap on the total harvests by the cooperative, so a cooperative that has fully harvested any one of its secondary species allocations would be prohibited from any additional harvest of CGOA rockfish or related allocations under the program.

Although the secondary species allocations to the catcher processor sector are not expected to be constraining, in some instances they could limit rockfish harvests.⁵⁵ If participants with relatively small rockfish allocation were to have tows with incidental catch of secondary species in the highest percentiles, it is possible that the harvest of secondary species could prevent their harvest of target rockfish. In addition, since the incidental catch allocations are based on fleet averages, relative to target rockfish, it is possible that some participants may either have high incidental catch rates in general, or a different distribution of incidental catch than the fleet average. These participants could be constrained by the secondary allocations, if they are unable to reduce incidental catch rates of secondary species. Also, if participants attempt to extend fishing over a longer season, it is possible that unexpected higher incidental catch rates of secondary species could constrain their rockfish harvests. If high incidental catch in other parts of the year is perceived as limiting, it is likely that participants would choose to concentrate their fishing under the program closer to the traditional season. Cooperatives should prove useful for addressing any constraints arising from the secondary species allocations. Distribution of secondary species allocations among cooperative members should allow members to fully harvest their allocations of target rockfish. These redistributions of secondary species allocations, however, are likely to cost the participants that are constrained by those allocations. Since secondary species historically bring higher revenues per pound than the target rockfish, it is likely that the revenues generated by the harvest of secondary species allocations will accrue to the person that holds the license with the history leading to the allocation. On the whole, the allocations of secondary species should not constrain harvests of target rockfish, unless the rates of incidental catch of secondary species in the rockfish fishery change substantially.

Catcher processor alternative 3 – cooperative or limited access -CP-3

Under this alternative, eligible catcher processors may choose to participate in the rockfish fishery through either a cooperative or a limited access fishery. This limited access opportunity is the only difference between this alternative and the previous alternative. The analysis of this alternative therefore only describes these differences, with other aspects being as described for the previous alternative.

As under the previous alternative, cooperative members may fish outside of the traditional season, which may allow them to achieve efficiencies within the rockfish fishery, as well as ensure that they have an opportunity to participate in other fisheries that open early in July (to the extent permitted by sideboard provisions). The distribution of fishing by these cooperative members is likely to depend on opportunities in other fisheries and the ability of the participants to successfully target rockfish, without exceeding

⁵⁵ A detailed discussion of potential for shortraker rockfish allocations to constrain primary rockfish species harvests is contained in 2.4.1.

allocations of secondary species and halibut PSC. Market considerations could also influence choices of fishing times. Allocations of secondary species (particularly sablefish) are likely to be fully harvested given the flexibility of participants to harvest those allocations independent of target rockfish.

Holders of small allocations are likely to consolidate their allocations with others to achieve harvest efficiencies or choose to “opt out” of the fisheries, allowing their allocations to be redistributed among cooperatives. Whether participants choose to remain out of cooperatives cannot be predicted. As noted in the cooperative only alternative, cooperative members will have some incentive to reach agreement with these recipients of small allocations, since these allocations would be inaccessible to cooperatives once allocated to a limited access fishery.

The option that would require at least two entities to form a cooperative could affect negotiations and cooperative formation dynamics in the fishery. Under any cooperative formation rule, vessels with small allocations could choose to fish the limited access fishery simply to attempt to take a share of the catch greater than their cooperative allocation. If multiple entities are required to form a cooperative, it is possible that multiple vessel owners could enter some its vessels in a cooperative and enter another vessel (with a small allocation) in the limited access fishery. This vessel owner might have an incentive to exclude others from its cooperative to increase the allocation to the limited access fishery. Since the two entity rule would prohibit any entity (including an entity owning multiple vessels) from creating its own cooperative, an entity unable to come to terms with another sector member could be precluded from cooperative participation and have its allocation vulnerable in the limited access fishery.⁵⁶

Alternatively, eligible catcher processors may choose to register for the limited access fishery. Since any catch processor limited access fishery will be managed in a manner similar to the pilot program limited access fishery, that fishery may resemble the pilot program’s limited access fishery. Under the pilot program, several vessels have registered for the limited access fishery, with only a few vessels participating. As a result, no race for fish has developed. Instead participants have coordinated catch during allowing each to harvest an agreed share. Since most of the limited access vessels are members of a common cooperatives in the Bering Sea, it is possible that some vessels registered for the limited access that do no participate have chosen to register for the limited access to benefit their Bering Sea cooperative associates (rather than see their allocations redistributed among the rockfish cooperatives). As a result of these arrangements, the limited access fishery has functioned more like a cooperative than a limited access fishery. Limited access registered vessels, however, cannot begin harvests prior to the early July opening and, under sideboards, cannot fish in other fisheries in early July until a large portion of the rockfish harvests are made. These limitations are intended to prevent encroachment of vessels in those other fisheries.

As noted in the preceding alternative, it is unclear the extent to which the shortraker rockfish allocation has affected the incentive to join cooperatives in the existing program and whether a change in the allocation or management of the species (as are under consideration) would eliminate any perceived constraint this species allocation has on the harvest of the primary species.

One factor some sector participants have sighted as creating an incentive for not joining cooperatives under the existing pilot program is the shortraker rockfish allocation. Under the existing program, these vessels have elected to fish the limited access fishery, rather than join a cooperative. In the current pilot

⁵⁶ Although the two entity cooperative formation threshold might be intended to reduce management burdens by requiring larger cooperatives, it is unclear whether such a result would arise. In the current pilot program, all catcher processor cooperatives are single entity cooperatives. If the rule leads to larger cooperatives, it could decrease management burdens, but it is also possible that fewer vessels may participate in cooperatives, in which case, management of the limited access fishery could reduce benefits achieved under the program.

program, 30.03 percent of the CGOA shortraker TAC is available for allocation to the catcher processor rockfish cooperatives. As noted in the cooperative only alternative, each catcher processor cooperative receives a percentage of this allocation equal to its percentage of the sector's primary rockfish species quota shares. Sector members that choose to join the limited access fishery do not receive an allocation. Instead, limit access participants in the pilot program are limited by a maximum retainable amount of combined shortraker rockfish and rougheye rockfish equal to 2 percent of catch of the primary rockfish. In the first two years of the pilot program, catcher processors participated in both cooperatives and the limited access fishery. The choice of some catcher processors to participate in the limited access fishery reduced the permitted retained catch of the shortraker rockfish slightly less than 50 metric tons each year. This allocation is said by some eligible catcher processors to be inadequate to ensure that the primary rockfish species will be fully harvestable. Despite these assertions, the allocation does not appear to have been constraining cooperative participants in the pilot program.

Under this alternative, the Council should consider the potential effects of halibut allocation options. Under one option, halibut reductions could be based on halibut usage in the pilot program, which would substantially reduce halibut allocations. If the limited access fishery receives no direct allocation of halibut (and instead fishes using the general 3rd season trawl deepwater halibut allocation) the reduced allocation could create a substantial incentive to fish in the limited access fishery (which would be less likely to be constrained by halibut). This effect could be offset, if the limited access receives an allocation of halibut. The allocation of halibut to the limited access fishery, in this case could create a substantial incentive for cooperative membership. In addition, the allocation could prevent potentially excessive use of halibut by the limited access fishery. On the other hand, a small allocation of halibut to the limited access could prevent harvest of the limited access allocation (which might then be stranded), particularly if some participants in the limited access fishery do not attempt control halibut catches. Participants in the fishery with little history could be most likely to engage in this type of fishing, as they have less historic dependence on the fishery.

Catcher vessel alternative 2 – harvester only cooperative- CV-2

Under this alternative, historic catcher vessel participants in the rockfish fishery would be permitted to form cooperatives that would receive allocations based on catch histories of their members. Since historic harvests of target rockfish species are used to make allocations, the distribution of allocations both to and within the catcher vessel sector are similar to the historic distribution of harvests during the qualifying years. Annual participation records show that between 19 and 33 catcher vessels participated in the fisheries each of the qualifying years. The number of persons receiving allocations is estimated to range between 44 and 53, showing that some vessels came to and went from the fishery during the qualifying years.⁵⁷

Since cooperative formation requirements are relatively minimal under this alternative (no minimum number of qualified participants), it is likely that most persons eligible for the catcher vessel sector will join a cooperative. An indication of catcher vessel cooperative formation can be seen in the rockfish pilot program years. During the first three years of the rockfish pilot program, only three participations in 2007 and two participants in 2008 and 2009 did not join a cooperative, while the rest of the qualified catcher vessel participants joined cooperatives. Cooperatives are likely to distribute revenues based on the allocation that the person brings to the cooperative, with vessels fishing the allocations of others compensated for their costs or collecting net revenues after paying a lease fee.

⁵⁷ The number of qualifying catcher vessel participants includes qualified participants from the rockfish pilot program's entry level fishery.

Under an extended season, cooperative fishing is likely to take place outside of the traditional early July season, as has happened under the pilot program (see Section 2.3.3). This change in timing has avoided conflicts with other fisheries that has delayed offloads and decreased catch quality under license limitation, limited access management. As with the catcher processor cooperatives, timing of fishing CGOA rockfish allocations will depend on the particular operational needs of members, market opportunities, and fishing success. Fishing outside the traditional July season could also provide an opportunity for some participants to try to serve new markets (including a possible fresh market), but efforts to serve those markets have not succeeded, to date, under the pilot program. To the extent permitted by the option selected by the Council, catcher vessels will likely use targeted trips to catch allocated secondary species (particularly sablefish and Pacific cod, which are more prone to damage, if stored with rockfish.

Under this alternative, the catch of cooperatives is not only limited by primary and secondary species allocations, but also by allocations of halibut PSC. Although each cooperative will receive an allocation of halibut PSC and therefore it is possible that halibut bycatch could close the fishery for a cooperative, the sector would likely continue to utilize halibut PSC in a manner similar to the rockfish pilot program. These practices have resulted in substantial reductions in halibut usage by vessels participating in the rockfish fishery. These reductions are motivated by the constraint of the halibut allocation, along with a provision that adds any unused portion of the halibut allocation in the last season trawl halibut apportionment. These unused portions of the allocation have allowed trawl vessels to increase activity in the flatfish fisheries that might otherwise be constrained by halibut availability. Options that reduce the allocation of halibut or that greatly reduce the potential rollover of halibut could reduce the incentive to lower halibut usage (as the rollover value could be rather small). These options could result in more halibut usage than options that maintain a large halibut allocation to the program and make a rollover that is large enough to support a late season fishery.

Under this alternative, fishermen will have the flexibility to make deliveries to any processor. This flexibility should ensure that an agreement can be reached that that accommodates delivery preferences of the harvester. It is possible that a harvester might make concessions to a processor in choosing delivery dates, but these concessions are likely to be compensated. Cooperatives will have the flexibility of delivering to multiple processors allowing the opportunity to choose fishing timing. Despite this flexibility, it is likely that established relationships will have an important influence on harvester delivery choices and cooperative membership (at least at the outset of the program). Relationships that extend to other fisheries are likely to be most enduring. Over time, changes in delivery patterns may change as harvesters perceive better opportunities with other processors.

The Council motion contains an option add a port delivery requirement for allocations of the primary and secondary species to the catcher vessel sector. The port delivery requirement is intended to protect the community of Kodiak from changes in the location of shore based processing activities that could occur in the rockfish program.

8 Allocation from sector to vessel

Regionalization – Apply to catcher vessel sector only;
Option 1: All CV CQ must be landed in the Port of Kodiak

Historically, Kodiak has been the base for operations in the shore-based sector of the CGOA rockfish fisheries. Almost all processing in the fishery took place in Kodiak leading up to the implementation of the rockfish pilot program. The pilot program structure also, indirectly, requires that all deliveries under

the program to be made to Kodiak, by requiring that all deliveries be made to qualified processors, all of which are based in Kodiak. As a result, the geographic distribution of processing under the program cannot indicate the potential for the redistribution of landings in the absence of a Kodiak landing requirement.

If adopted, this option would ensure that Kodiak remains the processing base for the fishery and that Kodiak processors and the community continue to benefit from the fishery. As with other constraints on landings, port delivery requirements can reduce market and processing innovations that might be developed without the constraint. Although there are no indications that a portion of deliveries from the fishery would be relocated in the absence of a Kodiak landing requirement, it is possible that some portion of the landings could be redirected to other locations. While the cooperative structure of the program may delay movements of landings by establishing collective harvester associations that may reinforce ties with existing processors, that same collective activity also could facilitate the movement of landings to other locations should landing markets be available elsewhere. Development of processing capacity could come from a variety of sources in various locations. It is possible that a shore based plant in another Central Gulf location could attempt to attract deliveries in an attempt to better serve fresh markets. It is also possible that a floating processor (or catcher processor) could attract deliveries by locating closer to the grounds. These landings might occur outside of any community, resulting in a general loss of shore-based effects. With the extended season in the fishery, the opportunity to introduce new processing capacity should increase, as deliveries can be timed to avoid conflicts with activity in other fisheries. These opportunities could pose a challenge to Kodiak based processors that wish to maintain their current dominance in the processing market in the fishery.

Options could be adopted to limit the amount of primary rockfish and secondary species that could be processed by any processor (with an option to grandfather any processor that historically processed in excess of the cap). The limit on primary rockfish processing would ensure that no processor expands its processing beyond the specified level. In Kodiak, where the fishery has historically been based several processors have the capacity to process a substantial portion of the fishery. Imposing a processing excessive share cap could limit competition for landings in the fishery to some extent, should one or two processors develop efficiencies (through either market or product development) beyond those of other processors. Although the provision might be intended to protect processor interests, these caps are most likely to simply limit the ability of the most effective processors to compete for an increased market share. The result could be lower ex vessel prices, as the most effective processors would reduce prices as they are prohibited from compete for landings beyond the cap.

A cap on processing of secondary species landings could affect competition for landings of those species, as these are the most valuable portion of the rockfish fishery.⁵⁸ In the absence of a limit, it is possible that one or two processors could purchase most of the catch of these species (particularly Pacific cod and sablefish) under the program by offering cooperatives a higher price for those landings. This competition could affect fishing practices by inducing cooperatives to coordinate landings with these processors.

Catcher vessel alternative 3 - cooperatives with allocation of harvest shares to processors - CV-3

Under this alternative, eligible processors would receive allocations of harvest shares from the catcher vessel harvest share pool under alternative. Allocations of target rockfish would be divided between

⁵⁸ The potential for one or two processors to attract all catches of Pacific cod and/or sablefish could be reduced, if the Council prohibits directed trips for those species. Even so, it is possible that a processor could attract substantial landings of Pacific cod and sablefish, if the processor is willing to also purchase the accompanying primary rockfish species.

eligible harvesters and eligible processors, with eligible processors receiving 10, 20, or 30 percent of the sector's pool of all allocated species based on processing in the fisheries during the qualifying period.

In general, catches under this alternative will be coordinated to receive the greatest value from those landings, in a manner similar to the preceding alternative. Secondary species and halibut PSC allocations will affect harvest behavior, as vessels work to avoid those constraints. Valuable secondary species will be harvested to ensure that the fishery brings the greatest value to participants.

Fishing will be distributed throughout the extended season, with possible several factors affecting a cooperative's choice of when to fish its allocation. As under the previous alternative, processors may use prices to induce harvesters to time deliveries to their benefit. Processors may also allow harvesters to catch their annual allocations to influence a harvester's delivery timing and choices.

As under the previous alternative, the Kodiak landing requirement could have a notable affect on the fishery by prohibiting landings with processors outside of the community. If not adopted, the effect of allowing the transfer of processor allocations to independent harvesters will have a greater effect on the distribution of landings over time. Since only Kodiak based processors qualify for the program, any delivery relationships that are based on exchanges of those processor allocations will be lost as the shares are transferred on to independent harvesters. Over time, the loss of this influence could result in the movement of landings from Kodiak, if a Kodiak landing requirement is not established.

Catcher vessel alternative 4 - cooperative with severable processor association (no forfeiture) - CV-4

Catcher vessel participation and fishing patterns under this alternative are likely to be similar to that described under the harvester only cooperative alternative; however, the requirement that a cooperative annually associate with a processor could have some effect on timing of fishing and the location of deliveries.

Harvesters will have full discretion to choose a cooperative initially and may freely move among cooperatives annually thereafter. In addition, cooperatives are free to associate with any processor in any year without forfeiture or penalty. The terms of the cooperative agreement, and consequently, the cooperative/processor association are subject to negotiation between the cooperative members and the processor. Given the flexibility of the harvesters to move among cooperatives and cooperatives to changes associations, it is likely that any limitation established under the terms of an association (such as delivery requirements or terms) will be fully voluntary and harvesters will receive compensation for any concessions.⁵⁹ At the outset, long term relationships and relationships in other fisheries are likely to be important factors that affect cooperative and processor association choices.

While some cooperatives may use the processor association to establish delivery relationships, it is possible that some cooperatives may minimally comply with the requirement by establishing a relationship on paper, but maintaining no operating relationship. With a relatively large pool of processors to establish an association with, a cooperative could be relatively well positioned to comply with the association requirement with no associated delivery relationship. In this case, the cooperative would be

⁵⁹ Under the pilot program, almost one-fifth of the deliveries of the primary rockfish catch were made to a processor other than the cooperative's associated processor, despite the requirement that a harvester join a cooperative in association with the processor that it delivered the most pounds to in the qualifying period to fish in the share-based fishery. This distribution pattern suggests that shore-based processors allowed their associated cooperatives some latitude to make deliveries to other processors. Under this alternative (with a much weaker processor association), it is likely that deliveries of primary rockfish catch will continue to be divided between associated processors and other processors.

free to deliver to any processor and negotiate delivery arrangements independent of the processor association requirement.⁶⁰

Overall, harvesters fishing practices under this alternative are likely to be similar to those described under the harvester only cooperative above.

2.4.6 Effects on participation in the processing sectors

This section compares the impacts of the different alternatives on participation in the processing sector and processing practices.

Status quo

Processing participation and practices are likely to be similar to those seen under LLP management prior to implementation of the rockfish pilot program in 2007. Catcher processors in the rockfish fisheries prior to the rockfish pilot program produced mostly whole and headed and gutted products. Catcher processors are likely to process catch as it is landed in the race for fish.

In the LLP managed fishery, shore-based processors raced to process landings in an attempt to maintain market share to maintain a minimum quality for products. Quality, however, suffered because of the rapid rate of harvest and processing, which leads to the production of relatively lower value and lower quality products. Secondary species catch, which tends to be of higher value, was often handled better than target rockfish catch by vessels. As a consequence, secondary species products were typically of higher quality.

Catcher processor alternative 2 – cooperative only - CP-2

Processing by catcher processors, under the catcher processor sector allocation with cooperatives, is likely to remain similar to the current (pilot program) processing by this sector. Most vessels in the sector are equipped for producing a few simple products (frozen whole and head and gut fish). Because of size limitations, it is unlikely that any of these vessels will change plant configurations to process higher-valued, more processed products.

Although catcher processors product mix may not change from the status quo under this alternative, it is possible that some improvement in quality may be made by some participants. Generally, catcher processors produce a relatively high quality product, so the ability to make quality improvements may be limited.

Catcher processor alternative 3 – cooperative or limited access - CP-3

Processing by catcher processors under this alternative is likely to be the same as processing under the catcher processor cooperative only alternative (CV-2). If the limited access fishery were to develop a competitive, race for fish, it is possible that product quality from that fishery could suffer. To date, in the pilot program, no such race has developed.

Catcher vessel alternative 2 – harvester only cooperative - CV-2

Under this alternative, eligible catcher vessels may join cooperatives that annually receive exclusive allocations to harvest during an extended season. This management structure should result in different processing practices than under the status quo.

⁶⁰ The Kodiak landing requirement is interpreted as restricting the pool of processors that a cooperative may associate with to processors in Kodiak. Despite this restriction, that community is home to several processors. Consequently, a Kodiak landing requirement would likely have little effect on the ability of harvesters to avoid including delivery terms in a processor association.

Share allocations to cooperatives should provide cooperatives with the ability to improve quality of landings. These quality improvements should provide processors with the ability to produce higher quality and higher value products. Under the pilot program, processors appear to have made efforts to make these improvements with limited success. Coming into the program, whole and head and gut products were the leading products of shore-based plants that currently participate in the rockfish fisheries. In the first year of the program, in particular, a substantially greater share of landings was processed into fillets, but this production appears to have yielded little additional value. Since that time, processors have made more modest efforts to modify product mixes. Whether processors will be able to achieve improvements in the future is not known.

The structure of the market for landings would likely be competitive under this alternative, increasing the incentive for processors to aggressively pursue product improvements to attract additional landings. This competition should resolve delivery terms, including the timing of landings to accommodate processing schedules. This timing of landings could be critical to processors meeting some market demands, particularly, if a fresh market were to develop.

At the onset, some processors (particularly those with loyal fleets that have historically made deliveries from many different fisheries to the same processor) may choose to compete less in more challenging markets. Over time, these processors may lose landings, if those markets develop and are not pursued. Yet, it is possible that some harvesters that participate in diverse fisheries throughout the year could choose to remain with a processor offering lower rockfish prices, if lower revenues for rockfish were to be compensated for by increased revenues from landings in other fisheries or other operational considerations provided by the processor (e.g., fuel, storage, or pre-season loans).

In considering the effects of this alternative, some options should be considered. First, the inclusion of a Kodiak landing requirement is unlikely to have a noticeable effect on the number of processors in the fishery. Several processors operate in that community, providing ample markets and competition for landings. In the absence of the landing limitation, a redistribution of landings to other locations could occur, particularly, if fresh product markets develop.

Second, the option to cap processing could have a minor effect on the development of processing innovations. For example, if a processor develops markets and shares a portion of additional revenues with its harvest fleet, the incentive for others to follow those developments will be limited, if the processor is limited in the amount of landings it can attract by a cap. This effect is unlikely to be persistent, as several other processors are available to compete for landings.

Catcher vessel alternative 3 - cooperatives with allocation of harvest shares to processors - CV-3

Processing practices under this alternative should be generally similar to those under the harvester only cooperative alternative. The extended season should result in slow rates of fishing and dispersed landings of improved quality over the status quo. These quality improvements and the slower rate of landings may allow for production of higher quality, more processed products from the fishery.

This alternative is distinguished from the previous alternative by the initial allocations of primary rockfish to eligible processors (who would received 10, 20, or 30 percent of the catcher vessel sector pool). While the allocation of shares to processors may affect the negotiating position of certain processors in the fishery by endowing them with an allocation that can be used to compete for landings, those allocations are unlikely to have a dramatic affect on processing practices, as a large share of the harvest share

allocation will be available to independent harvesters in the fishery.⁶¹ It is possible that some processing differences could arise, depending on how processors use this additional negotiating leverage. Some endowed processors may be slow to develop new products and markets, relying on the negotiating leverage of their endowment to attract landings, particularly if this more intensive processing could interfere with their operations in other fisheries. This lag in product development is unlikely to be lasting, as processors will continue to need to compete for landings on a regular basis.

As under the preceding alternative, the effect of options should also be considered. The Kodiak landing requirement is unlikely to have a noticeable effect on processing practices, with several processors operating in the community. The option to cap processing may reduce the incentive for processing and market development slightly, but any such effect should be minor effect and transitory.

Catcher vessel alternative 4 - cooperative with severable processor association (no forfeiture) - CV-4

The cooperative structure under this alternative should result in processing practices very similar to those of the previous two catcher vessel alternatives. Since each cooperative is required to associate with a processor annually, it is possible (and anticipated by some) that a delivery arrangement may arise between the cooperative and processor. These types of arrangements could constrain some deliveries for the year, but will persist unless they are advantageous to the cooperative members. As a result, processors can all be expected to pursue markets and product opportunities, to establish and maintain annual associations and attract deliveries. As under the preceding alternative, historic relationships will likely influence the formation of cooperative/processor associations, but these relationships are likely to be tested, if a processor fails to compete in product markets (or fails to match others' ex vessel prices).

In some cases, it is possible that no limitation on landings will be contained in the agreement establishing a cooperative/processor association, since those associations can be established with any processor and changed annually. If processors were to lag in product and market development, it is likely that harvesters would not only choose to move at the season's end, but not agree to delivery constraints in the agreement.

The effects of the options to require all deliveries to Kodiak and to limit the amount of the fishery that may be processed by a single processor are likely to be the same under this alternative, as under the previous two alternatives.

2.4.7 Effects on catcher processor efficiency

This section of the analysis examines the effects of the alternatives on catcher processor efficiency. Since only two of the alternatives apply to catcher processors, this section only considers the effects of those two alternatives. The next two sections examine catcher vessel efficiency and shore-based processor efficiency, which together determine production efficiency in the shore-based sector. The interaction of the catcher processor alternative with the catcher vessel alternatives is discussed, where applicable.

Catcher processor efficiency is a contributor to overall production efficiency in the fishery. Together catcher processor efficiency and efficiency in the shore-based sector determine overall production efficiency in the fishery. To assess the production efficiency impacts of the alternatives on net benefits, the sum of the effects in these three sections (catcher processor efficiency, catcher vessel efficiency, and shore-based processing efficiency) are summarized for each alternative after the three sections.

⁶¹ If these allocations are transferable to independent harvesters, it is possible that any effect of this endowment may dissipate over time, if independent harvesters come to hold the shares.

To establish a framework for this portion of the analysis, a brief description of production efficiency (and its role in overall economic efficiency that is used to examine the net benefits of an action) follows. In the simplest terms, production efficiency is the difference between production revenues and production costs. Production efficiency is a measure of the effectiveness of a producer in using inputs to produce one or more outputs, focusing on the relationship between the quantity and quality of outputs produced and the quantity and quality of the various inputs (e.g., fuel, vessels, and labor) used for that production.⁶² Two different types of efficiencies contribute to, and together constitute, production efficiency. “Technical efficiency” refers only to the production process that converts inputs to outputs and is a measure of the quantities of inputs used and the quantity of outputs produced in a production process (independent of prices and their effects). Decreasing quantities of inputs and increasing quantities of outputs are sources of technical efficiencies, *ceteris paribus*. “Allocative efficiency” considers both the markets for inputs and outputs and choices of inputs and outputs and is a measure of the economic benefits of choosing different mixes or combinations of inputs and outputs in production. Allocative efficiency necessarily considers the costs and revenues generated by these choices. Collectively, these two types of efficiency define “production efficiency”. Overall production efficiency, which is the concern of this section, therefore requires the consideration of both the choices that the producer makes in the markets for inputs and outputs and the process by which inputs are converted to outputs. In the end, overall production efficiency may be measured by the returns to producers – the difference between the producer’s revenues generated by outputs and the producer’s costs of inputs.

Since the output of the fishery is fish products (e.g., head and gut fish, fillets), an analysis of overall efficiency would assess the efficiency of both the harvest of fish and the processing of that fish into these products. The Council’s problem statement, however, recognizes that production in the fisheries is generally separated into two industry segments – harvesting and processing – and expresses its intent that the rationalization program contribute to the economic stability of both of those segments. To facilitate an understanding of the implications of the alternatives on these two segments, this analysis separately assesses the implications of the different alternatives on the efficiency of harvesting and the efficiency of processing.

To develop an understanding of production efficiencies under the alternatives, it is helpful to develop a framework for assessing returns to producers in the fisheries and the sources of those returns. Three different sources contribute to returns to producers in the fisheries: resource rents, harvester normal profits, and processor normal profits. First, fish that will be harvested and processed have a scarcity value while unharvested in the water that is realized by harvesting and processing. This value can be said to exist independent of the action of harvesters and processors. Once the fish is harvested and processed, this value is captured by the industry. The value referred to here is the resource rents, or the value of fish in its natural state that is realized only by the harvesting and processing of the fish. In the case of catcher processors, this value is captured entirely by the catcher processor. For the shore-based sector, the ex vessel price determines the division of resource rents between the catcher vessels and the shore-based

⁶² Economists estimate four different contributions to production efficiency, all of which together constitute production efficiency:

1. Reducing the quantities of inputs used to produce a given set of outputs;
2. Increasing the quantities of outputs produced with a given set of inputs;
3. Reducing the cost of production by improving the mixture of inputs used to produce a given set of outputs; and
4. Increasing revenues by improving the mixture of outputs produced using a given set of inputs.

The first two of these estimates are “technical efficiency” and refer only to the production process that converts inputs to outputs (rather than the markets for inputs and outputs). The later two measures are “allocative efficiency” and require consideration of both the markets for inputs and outputs and choices of inputs and outputs.

processors. This value, however, is only one part of the returns realized through the harvesting and processing of fish.

In addition to resource rents, each sector is generally expected to receive its normal profits (or a reasonable return on investment in the industry). The normal returns on harvesting investments and normal returns on processing investments are the other two sources of returns in the fisheries. As in any business, harvesters and processors invest capital and labor on the reasonable expectation of receiving a return on that investment.

When assessing the efficiencies in this section, one must keep in mind the relationship between resource rents and efficiencies. In a more efficient fishery, a greater portion of the rents of the resource will be captured by the fishery participants, *ceteris paribus*. For example, ending a race for fish may slow the flow of rockfish through processing plants, increasing product quality, which increases returns from the fishery. This capture of additional rents could result in relative improvements in both the catcher vessel and the shore-based processing sectors, if the efficiency gain is shared between the sectors. The discussion of efficiencies is largely an analysis of the capture and distribution of the resource rents between the two sectors. The reader should bear in mind that in a fishery in which the division of revenues moves to the detriment of one sector, that sector does not necessarily suffer a decline in efficiency (and hence may not be made worse off), if substantial efficiencies are realized (or in other words, substantial additional rents are captured). If total revenues in the fishery rise substantially, even a negative shift in the division of revenues could leave a party more efficient and better off.

As should be apparent from this discussion, a critical factor in the assessment of the effects of the alternatives on efficiency of the catcher vessels and shore-based processors is the ex vessel price of rockfish, which determines the distribution of product revenues between those two sectors. Rockfish landings generate revenues for harvesters and are a principal input cost to processors. Because of the importance of ex vessel prices in determining the efficiencies of the different shore-side sectors, the analysis in this section devotes considerable attention to the effects of the different alternatives on the distribution of revenues between these sectors (reflected in those ex vessel prices).

Since all of the participants in the rockfish fisheries also participate in other fisheries, most of the alternatives will also affect efficiencies in other fisheries. To fully understand the efficiency effects of the alternatives, the effects on rockfish participants' activities in other fisheries is also considered.⁶³

For each segment of the industry discussed below, it is possible that efficiencies could differ. Specifically, participants with small allocations could be affected differently from those receiving large allocations. To the extent that these differences can be assessed, the analysis of each alternative concludes with a discussion of the differential impacts of the alternatives within the sector.

Status quo

Production efficiency of the catcher processor sector under the status quo is limited to some degree by the race for fish under an LLP managed fishery. Catcher processors are compelled to race for rockfish harvests with other catcher processors, as well as catcher vessels participating in the fisheries during the few weeks the fishery was open each year under this alternative. Although catcher processors process

⁶³ Some analysts might consider these effects on other fisheries to be “cumulative effects” because they concern the interaction of the alternatives with the management programs in other fisheries. Since the interactions influence not only the efficiencies realized in those other fisheries, but also the efficiencies realized in the rockfish fisheries, a thorough analysis of the effects of the alternatives on the rockfish fisheries requires their consideration. In addition, since these interactive effects do affect the overall efficiency arising from the rockfish alternatives, a comprehensive net benefits analysis must include those effects.

their catch quickly relative to catcher vessels, the quality of harvests may suffer to some extent as participants maximize their catch rates. Diminishing quality dissipates a portion of the resource rents that would otherwise be available. Particularly on vessels with smaller processing plants, fishermen may harvest fish at a rate that exceeds the rate at which the plant can process that fish. If fish are held too long prior to processing, quality will decline. Generally, participants in the catcher processor fleet are only equipped to produce whole and head and gut frozen products. Production of these products is likely, if the status quo is selected.

Catcher processor alternative 2 – cooperative only - CP-2

Under this alternative, the catcher processor sector is likely to realize some gains in production efficiency capturing greater rents from the fishery. To participate in the rockfish fisheries, an eligible catcher processor would be required to join a cooperative. As a result, most eligible catcher processors would likely join a cooperative rather than forgo their rockfish allocation by “opting out” of the program. Only vessels with very small allocations are likely to forsake their rockfish allocations, for the advantages of revised sideboards that apply to vessels that “opt out”.

The primary efficiency gains in the catcher processor sector under this alternative will result from improvements in technical efficiency. Allocative efficiency gains are unlikely to occur since vessels participating in this sector are equipped to produce only whole and head and gut products and are unlikely to reconfigure for different production outputs. Technical efficiency gains should occur as participants are able to slow the pace of fishing and processing. In the slower fishery, participants may be able to reduce expenditures on inputs to some degree (possible scaling down crews slightly) and increasing outputs slightly (with less loss due to diminished quality). Additional technical efficiencies could arise because of the cooperative structure of the alternative. In a cooperative, participants will be free to consolidate fishing up to the 60 percent harvest cap. Consolidating catch on fewer vessels in the fishery should also reduce aggregate harvest costs.

Some cooperatives may also improve efficiency in other July fisheries, if they are able to reduce the number of vessels in the rockfish fishery or change the timing of rockfish harvests (away from the traditional early July fishery, which would occur under the status quo). This interactive effect should arise one or two ways. Since each cooperative will be limited to the historic catch of its members in other July fisheries, the outputs of each cooperative will be limited. A cooperative could enter more vessels into these other fisheries (since fewer vessels will be occupied with rockfish targeting in early July) slowing the rate of harvesting and processing without reducing its total harvest from historic levels. At this slower rate, technical efficiencies similar to those in the target rockfish fishery could be realized. Alternatively, a cooperative could choose to use fewer vessels to make its historic harvests in these other fisheries, since vessels would be able to begin fishing at the opening of the non-CGOA rockfish seasons, instead of needing to race for fish in CGOA rockfish fishery prior to entering these other fisheries. A cooperative whose members have diverse histories in several different July fisheries may be less able to achieve these efficiencies in other fisheries since the cooperative may need to enter vessels in several fisheries simultaneously to maintain its historic shares.

Participants in this sector will also have the option of transferring their annual allocations to the shore-based sector. Some historic participants could elect to transfer their allocations for harvest by a catcher vessels cooperative, if they perceive an added benefit from fishing of the allocation by that sector. Participants with affiliations with shore-based processors or relatively small allocations who cannot achieve efficiencies internally harvesting and processing those allocations (and are unable to reach satisfactory agreements with other participants in the catcher processor sector) may find that transferring their small allocations to the shore-based sector could yield a better return. Whether better returns can be realized in the shore-based fishery cannot be predicted and depends on both the difference in harvesting

and processing costs between the shore-based and offshore sectors and the differences in product outputs and quality. As noted in the discussion of shore-based processing below, the shore-based sector may produce higher-value processed products, such as fillets that cannot be processed onboard the catcher processors that participate in the rockfish fisheries. Whether these different products lead to greater production efficiencies, however, depends greatly on harvesting and processing costs.

Although technical efficiencies should be realized by the catcher processor sector overall, some catcher processors eligible for the program may realize efficiencies that are substantially less than those realized by others. Eligible catcher processors that receive small rockfish allocations may have little to gain from coordinating the harvest of relatively small rockfish allocations, particularly since sideboards would limit their harvest from other July fisheries. It is also possible that some members of the sector could be disadvantaged by participating in the rockfish program, because the loss of revenues from limits on their activities in other fisheries from the sideboards may exceed the benefits of the exclusive rockfish allocations. These participants are likely to opt out of the program to remove the constraints of cooperative sideboards on their participation in other fisheries. A catcher processor that opts out of the program would only be permitted to participate in fisheries that it has participated in during the first week of July in at least two of the seven qualifying years. This minimal limitation is unlikely to constrain any vessels that have limited rockfish history that are likely to opt out of the program.

Catcher processor alternative 3 – cooperative or limited access - CP-3

Efficiency gains under the catcher processor cooperative alternative should be similar to those realized under the other catcher processor alternative. Vessels that join a cooperative are likely to achieve similar benefits under this alternative, gaining either benefits that arise from consolidation within the sector or benefits arising from transfers to cooperatives in the shore-based sector. In addition to allowing a vessel to join a cooperative or opt out of the fishery, this alternative allows eligible catcher processors to participate in the rockfish limited access fishery. Vessels in the limited access may suffer some loss of efficiency, should a race for fish develop in that fishery.

As under the other catcher processor alternative, some catcher processors with minimal allocations may choose to opt out of the program to avoid the restrictions of the cooperative sideboards. Other vessels may elect to fish the limited access fishery. In each year of the pilot program, vessels have registered for the limited access with only a subset of the registered vessels choosing to fish. Vessels active in this fishery have asserted that their decision was driven by secondary species allocations (most importantly the allocation of shortraker rockfish) to cooperatives, which they believe could constrain their primary rockfish species harvests. While these assertions may be true, other vessels have joined the limited access fishery, electing not fish in that fishery, but allowing the allocation to be harvested by other vessels. To date, limited access participants have reached agreements to divide the TAC in that fishery. These agreements have allowed limited access participants to receive the benefits of exclusive allocations without using the program's cooperative structure. It is not known whether inactive vessels registered for the limited access have participated in these agreements. Whether vessels will continue to fish the limited access under agreements to divide the TAC in that fishery, if this alternative is adopted, is uncertain and may depend on a few factors, including whether vessels that wish to compete for landings enter the limited access and whether allocations or management of shortraker rockfish are modified. As long as vessels continue this practice, it is likely that limited access participants will be able to gain the efficiency benefits of exclusive allocations in the limited access fishery. If a race for fish develops in the limited access fishery, it is likely that some efficiency loss will occur, as vessels incur expenditures to maintain their share of that fishery. Alternatively, vessels may elect to join a cooperative to gain the benefits of exclusive allocations.

Overall, total catcher processor efficiencies under this alternative are likely to be similar to the efficiencies under the cooperative only alternative, with differences arising from the ability to participate in the limited access fishery. Efficiencies may be greater under this alternative, if the MRA management in the limited access fishery removes a harvest constraint that would have affected vessels fishing in a cooperative. Alternatively, periodic losses in efficiency could result under this alternative, if a race for fish develops in the limited access fishery.

2.4.8 Effects on catcher vessel efficiency

This section examines efficiency in the catcher vessels sectors under the alternatives that apply to the sector. To understand the efficiency effects of these alternatives on harvesters requires consideration of the nature of the cooperatives created under the program. The harvest cooperatives are explicitly for the sole purpose of coordinating the harvest of allocations. The cooperatives are not cooperatives formed under the Fisheries Collective Management Act (FCMA). Given their form, these cooperatives cannot negotiate price or terms of deliveries with processors. Members (or even potential members of a harvest cooperative), however, may form an FCMA cooperative with the same or similar membership as a rockfish harvest cooperative.⁶⁴ This FCMA cooperative could negotiate price and delivery terms for all or a portion of the rockfish harvest cooperative allocation. The ramifications of this distinction are discussed in the analysis of the program alternatives below, and are of particular significance under catcher vessel cooperative with processor association alternative.

Status Quo

Production efficiency of catcher vessels under the status quo is limited by the short, race for fish that will result from a return to LLP management. Catcher vessel efficiency is particularly vulnerable under LLP management because catcher vessel efforts that maximize the share of the TAC can also substantially diminish quality of landings. Increasing catch per tow and filling holds can damage rockfish that are difficult to handle, in comparison to other groundfish. Also, extending trip lengths to increase catch per trip also results in a decline in quality of rockfish, which typically lose color after approximately 72 hours in a hold. The LLP management and the system of MRAs had led most catcher vessel participants to use fishing effort to maximize quantities of target rockfish and quality of incidental catch species (primarily Pacific cod and sablefish), which are often iced in totes separate from the target rockfish in the holds. The result is a loss of resource rents on target rockfish. These fishing practices are likely to be perpetuated, if LLP management is utilized.

Returns to catcher vessels under the LLP management have been limited both by the quality of their landings and the compressed time period in which those landings must be made. During the fishing season leading up to the rockfish pilot program, most processors have needed to process deliveries quickly to keep pace with the landings. These conditions have dampened competition for landings among the participating processors to some extent. In addition, the inability of harvesters to maintain both quality of landings and their shares of the total catch has also limited their ability to attract some smaller processors into the market that would only be capable of serving higher quality markets. The extent to which resource rents are captured and division of those rents under this alternative is not known. In a fishery that is prosecuted over a very short season, a substantial portion of the rents are likely to be dissipated.

Catcher vessel alternative 2 – harvester only cooperative - CV-2

The catcher vessel cooperative alternative is likely to improve catcher vessel efficiency over status quo management. Since participants will be able to gain exclusive share allocations by joining cooperatives, a

⁶⁴ Catcher vessel participants that are affiliated with, or owned or controlled by processors, however, may not join FCMA cooperatives.

harvester's share of the fishery will generally be unaffected by catch rates.⁶⁵ Participants, instead, will refocus their efforts toward harvesting allocations in a manner that improves technical efficiency—reducing inputs and increasing the quality of rockfish deliveries.⁶⁶ Participants may be expected to choose to sacrifice some cost efficiencies (i.e., use more inputs such as fuel), if improvements in quality of deliveries lead to a greater price for landings. Under the pilot program management, to date, this trade off has failed to emerge for primary rockfish species. Yet, harvesters have targeted secondary species (particularly sablefish and Pacific cod) on separate trips to increase the quality of those landings. This trade off may increase costs, but only in return for higher revenues that resulting from improvements in technical efficiency and overall efficiency of catcher vessels because of the higher price that would be paid for these landings.

Some cooperatives may choose to remove vessels from the rockfish fisheries to reduce costs. Consolidation of catch on fewer vessels and fishing outside of the traditional July season could also allow the cooperative to enter more vessels in other July fisheries to ensure that the cooperative's members maintain their historic harvests in those fisheries. Under the pilot program some vessels with small allocations chose not to fish for rockfish. Yet, participation levels remained similar to historic levels in the sector. Sideboards would prevent rockfish catcher vessel participants from increasing their share from July fisheries in the aggregate, but will not prevent the cooperatives from competing amongst themselves to increase their shares of the sideboard amount. The extent of this competition in other fisheries could be reduced, if cooperatives are able to agree on the division of the sideboard amount. Under the pilot programs, rockfish participants were able to reach such an agreement.

Harvesters should be able to generate substantial competition for landings among processors under this alternative. Since 90 percent of all historic landings were processed by a half dozen processors during a two or three week season prior to implementation of the rockfish pilot program, processors that have been unable to compete for additional landings because of capacity constraints during the brief season are likely to have the ability to process substantially greater quantities of rockfish, if landings can be timed to take advantage of available processing capacity.⁶⁷ Catcher vessel participants under this alternative are likely to have relatively strong negotiating leverage in the ex vessel market, obtaining a relatively large share of the resource rents from the fishery.⁶⁸

Since the CGOA rockfish fishery is only a small portion of the fishing undertaken by most participants in the fishery, it is possible that some catcher vessel participants may choose to accept a lower price for landings from the rockfish fishery to maintain a relationship with a processor in other fisheries. The strength of the effects of this constraint cannot be predicted. In addition, it is possible that some cooperatives may choose to enter broader relationships to coordinate landings with a specific processor. Since these relationships are fully voluntary, they are likely to be entered and maintained only if they are advantageous to the cooperative's member.

⁶⁵ While seasons are of limited length to accommodate management and oversight, harvests are unlikely to be constrained by season length given the ability of the fleet to harvest the TACs of all CGOA rockfish in less than three weeks in the years prior to the rockfish pilot program.

⁶⁶ Because catch vessels deliver a single product (unprocessed fish) to shore plants, the change in their outputs arising from quality improvements is characterized as a technical efficiency improvement here. Some economists may assert that the change is actually allocative, because of the difference in quality could be argued to be effectively changing outputs. Regardless of the characterization of the change, the result is an efficiency improvement.

⁶⁷ Although most processors have substantial participation in other Gulf of Alaska LLP fisheries, substantial down times exist between seasons that occupy most of the available processing capacity.

⁶⁸ Matulich, et al. (2001) concluded that under the more restrictive AFA cooperative/harvester associations and landing obligations harvesters realize a substantial portion of the rents of the fishery.

Overall, the ability to coordinate harvest activity and remove vessels from the fleet without loss of harvest share, together with a relative improvement in bargaining strength arising from no processor protection on processor entry should result in substantial improvements in harvest sector efficiency over the status quo.

Catcher vessel alternative 3 - cooperatives with allocation of harvest shares to processors - CV-3

Operations of the catcher vessel sector under this alternative should be similar to those under the other catcher vessel alternatives. Catcher vessel efficiency gains under this alternative, however, are likely to be different, with resource rents divided between catcher vessels and processors based on the division of the harvest share allocation between these sectors (i.e., 90/10, 80/20, or 70/30).

The returns to participants in the catcher vessel sector may vary slightly depending on the approach taken by holders of processor allocations in using their harvester shares. These different methods are likely to result in a similar distribution of resource rents, but may result in slightly different distributions of normal profits and operation levels of independent harvesters. If a processor elects to harvest its allocation on its own (or an affiliated vessel), the processor would receive resource rents and normal profits from the harvest annually.⁶⁹ If a processor elects to sell its allocation (i.e., long term share), the processor would receive the resource rents embodied in the allocation at the time of the sale. The purchaser would assume the risk associated with the allocation and gain any normal profits from the harvest of the shares over the long term. If a processor enters an arm's length lease for its allocation (or the annual allocation yielded by its allocation), it would receive the annual rents embodied in the allocation at the time of each lease, with the lessee gaining normal profits from the year's harvest. Lastly, a processor may use its shares as part of a broader negotiation with a cooperative (or vessels in a cooperative) to establish a relationship that extends to all (or a large segment of) the landings of the cooperative. Catcher vessels (and cooperatives) might choose to enter such a relationship to receive greater ex vessel prices (or a more certain pricing arrangement), while the processor might benefit from the additional certainty of the arrangement (including additional harvester landings). Under such an arrangement, the processor would still be expected to receive the rents from its allocation; however, both parties may receive an additional benefit from the operational efficiencies arising through the certainty of the arrangement. For the harvester, these benefits might be realized by a harvester through ex vessel pricing of landings (and should include the normal profits from harvest of the annual allocation of the processor).

Catcher vessel fishing practices and technical efficiency gains under this alternative are likely to resemble those under the other catcher vessel program alternatives. Rockfish fishing will be dispersed over a longer season. Slowing of fishing and greater attention to handling of catch should improve quality of landings. Also, cooperatives are likely to use fewer vessels to fish rockfish to reduce costs and allow cooperative members to maintain their share of harvests in other fisheries. Two competing effects could determine whether this alternative achieves greater efficiencies, than the alternative under which shares are allocated based strictly to harvesters. Under this alternative, if members of the two sectors (i.e., catcher vessels and processors) are able to develop better coordination through relationships that are facilitated by the processor allocation, it is possible that the operational efficiencies could be slightly greater (or achieved more quickly) under this alternative.⁷⁰ The competing effect may arise, if catcher vessels sacrifice operational efficiencies to increase their harvests under these arrangements. For example, a harvester may choose to develop a relationship with a processor to gain additional shares to harvest, while a slightly better opportunity may exist with another processor, who does not hold as large a share of the pool.

⁶⁹ These profits might be captured only after sale of finished products by the processors.

⁷⁰ If independent harvesters are permitted to acquire processor allocations, it is likely that, over time, the effects of this alternative will approach the effects of the preceding alternative, under which all harvest shares are allocated based strictly on harvest activity.

Under any of these scenarios, the extended season would continue to present catcher vessels with substantially better position for negotiating deliveries of their own allocations, as processing capacity is unlikely to be constraining, as under the status quo. Catcher vessels' share of the rents from the fishery, however, would be reduced, relative to the first cooperative program alternative by the allocation of harvest shares to processors.

Catcher vessel alternative 4 - cooperative with severable processor association (no forfeiture) - CV-4

Catcher vessel efficiency under this alternative should be similar to efficiency under the first cooperative program alternative. Rockfish fishing will be dispersed over the longer season. Slowing of fishing and greater attention to handling of catch should improve the quality of landings (particularly for valuable secondary species). Also, cooperatives are likely to coordinate fishing to reduce costs and allow cooperative members to maintain their share of harvests in other fisheries. The extended season should increase negotiating leverage of the sector, as several processors will be available to process landings.

Despite the requirement of cooperatives having to associate with a processor, since harvesters will have the liberty to choose a cooperative and processor association both initially and annually thereafter, cooperatives should be able to generate competition for landings among several processors. As under the first cooperative program alternative, processors that would be unable to compete for additional landings because of capacity constraints during the brief season under the status quo are likely to have the ability to process substantially greater quantities of rockfish, if landings can be timed to take advantage of available capacity.

Although the annual associations may establish commitments for a season, the ability of harvesters (and cooperatives) to change associations annually should ensure broad competition for landings. In addition, it is possible that some association agreements may not contain delivery requirements, allowing the cooperative to negotiate deliveries freely with the processor of its choice.

As noted under the harvester only cooperative alternative, catcher vessel participants may choose to accept a lower price for landings from the rockfish fishery to maintain a strong relationship with a processor in other fisheries. Under this alternative, the required associations could strengthen those relationships in both the rockfish fishery and other fisheries.

Overall, the ability to coordinate harvest activity, together with a relative improvement in bargaining strength arising from no direct processor allocation should result in substantial improvements in harvest sector efficiency over the status quo.

2.4.9 Effects on shore-based processing efficiency

Shore-based processing is provided for only under the catcher vessel alternatives and in the entry level fishery. The efficiency effects of these alternatives are discussed in this section.

Status Quo

Under LLP management, fishermen race for catch, landing that catch with processors shortly after it is harvested. Because of the race for fish, they tend to take less care in handling their catch and extended the length of trips slightly, decreasing the quality of landings. Processors also race to process the glut of landings from fishermen that are trying to maximize their shares of the total catch. Efficiency, both technical and allocative, in the processing sector suffers, as lower valued products of lesser quality are produced. Technical efficiency also is lost, as crews must be scaled up for a short period of time to accommodate the rapid pace of landings during the brief season.

Vertical integration likely has minor effects on processing efficiency in a LLP managed fishery. Vertically integrated processors likely have some information concerning fishing costs and operations that

is not available to independent processors. This information likely provides only a minimal negotiating advantage in a LLP managed fishery because of the concentrated season.

Landings from non-trawl participants are very small portion of the status quo fishery. These landings, however, bring fishermen and processors a premium price because of their relatively higher quality.⁷¹ The relatively unique high quality catch made over a long season, provides harvesters with some negotiating leverage. The small scale of the fishery, however, limits its importance to any processor (except possible some of the small processors) reducing fishermen's negotiating leverage somewhat.

Catcher vessel alternative 2 – harvester only cooperative - CV-2

Under this alternative, fishing will be slowed, as a cooperative receives exclusive allocations. Technical efficiency in processing should improve as processors are better able to schedule crews to process landings. Allocative efficiency should also increase as processors improve product quality and produce higher quality products that cannot be produced under status quo management, because of the relatively low quality of landings and the need to process those landings rapidly. Catcher vessel participants are likely to use cooperatives to coordinate landings contributing to technical efficiency gains in the processing sector, as well as the harvesting sector. Yet, if cooperatives fail to establish relationships with processors that allow processor to schedule activities, it is possible that efficiency could suffer. In the long run, these efficiency losses are likely to persist, as harvesters are likely better ex vessel price if landings are coordinated, extracting some of the processors efficiency gain through that price.

Processors, however, may experience little improvement in their overall efficiency under this alternative because of their relatively weak negotiating position in the market for landings.⁷² Instead, cooperatives (and their catcher vessel fleets) should receive most of the benefits of these improvements through ex vessel price negotiations. Notwithstanding the relatively strong position fishermen may have under this alternative, processors, overall, should obtain normal profits from their processing. Some less efficient processors may be unable to realize normal profits, and may be expected to drop out of the rockfish fishery; while it is possible that others may be able to enter with the relatively slower pace and scheduling of deliveries.

Some processors may be able to gain some negotiating leverage in the rockfish market through negotiating landings from these same fishermen in other fisheries. The extent of this leverage is likely to be limited and only arise from landings in fisheries in which fisherman have limited markets for their landings (such as the flatfish fisheries).

Vertically integrated processors could have some advantage over processors that are not vertically integrated under this alternative. In general, vertically integrated processors would be assured of some landings in the fishery. In the structure of this alternative, however, the ability to leverage their position for landings is not certain, but is likely to be limited. Since processor owned licenses are not permitted to participate in cooperative negotiations, it is unlikely that a processor could use its license ownership to direct landings of members of the cooperative to its plant. The processor, however, could likely ensure that the cooperative agreement allows it to land catch of its licenses at its plant. These landings could provide a basis on which to build with landings from other licenses in the cooperative or other cooperatives and could be used to fill gaps between landings from these other participants. Vertically integrated processors are also likely to be more familiar with catcher vessel operating costs providing

⁷¹ The specific processed products data from the CGOA rockfish non-trawl fishing cannot be separated from processed products data from other fisheries. Both fishermen and processors assert, however, that products from this fishery are generally of higher quality and sell for a higher price than products from the main fishery.

⁷² Although an option could require all landings to be made in Kodiak, since that community is home to several processors, it is unlikely that the limitation of landings to Kodiak would affect the degree of competition in the fishery.

them a slight negotiating advantage over processors that are not integrated. In addition, if a vessel owned by a processor has operating relationships with vessels that are not vertically integrated, it is possible that this relationship could influence non-integrated vessel's choice of processors. The extent of the advantage held by vertically integrated processors is difficult to predict and will differ with circumstances.

Catcher vessel alternative 3 - cooperatives with allocation of harvest shares to processors - CV-3

Under this alternative, processors that receive an allocation of harvest shares are likely to realize substantially greater benefits from the fishery, than under the other alternative. This benefit would be derived from the share allocation, as opposed to operational efficiencies, as this alternative is likely result in similar operational efficiencies as other cooperative alternatives. As under the other cooperative alternatives, the slower rate of fishing should allow processors to reduce processing costs and possibly produce higher value and higher quality outputs. Although operational choices, negotiated settlements, and harvester/processor relationships can affect the distribution of resource rents between the harvesting and processing sectors, the percent of the harvest share pool allocated to processors will, in large part, determine the portion of the resource rents realized by processors.⁷³

Processors will have several choices for using their shares, including selling their long term shares, leasing annual allocations, and (in some cases) harvesting annual allocations on affiliated vessels. In most cases, it is likely that these processors will use their allocations. While each of these will bring the share holder the resource rent arising from the shares, it is likely that most processors holding harvest shares will negotiate the harvest of their allocations with cooperatives to gain additional landings and coordinate its processing activity in the fishery. This coordination should improve the processor's operational efficiency in the fishery. While these efficiencies are likely to arise under the other cooperative alternatives, the allocations under this alternative may provide processors holding those allocations with a better position to influence delivery schedules. Processors that do not hold these shares will be disadvantaged. To the extent that existing processors may be less willing to develop new products and markets, the advantage of processors holding shares could delay developments. This lag is unlikely to last, as other processors should be willing to share gains with harvesters to attract deliveries.

Processors receiving an allocation of shares will receive the rents arising from those shares. Those processor that do not receive an allocation of shares will receive no share of the rents from the fishery, but can realize normal profits to the extent that those processors attract landings.

As under the other catcher vessel alternatives, a portion of the benefit realized by shore-based processors from share allocations could flow to foreign-owned entities.

Catcher vessel alternative 4 - cooperative with severable processor association (no forfeiture) - CV-4

Again, technical efficiencies and product improvements in the processing sector are likely to occur under this alternative. The slower rate of fishing should allow processors to reduce processing costs and produce higher value and higher quality products.

⁷³ In a recent action, the Pacific Fishery Management Council elected to allocate 20 percent of the quota in its whiting fishery to processors and to make no allocation of non-whiting to processors. In determining to make the allocation to processors in the whiting fishery the Pacific Council noted that in the whiting fishery a shift from derby management to a share-based management program would result in a change in leverage between the two sectors in favor of the harvest sector. No such shift would occur in non-whiting fisheries, as those fisheries were not subject to derby management. In addition, the Pacific Council noted that the share-based management would likely result in a relatively small whiting fleet (of approximately 20 vessels), which could exert market leverage against the three major whiting processors. The Pacific Council also noted that the 20 percent allocation was intended to offset the shift in negotiating leverage between the sectors, but did express concern that the 20 percent allocation might be inadequate (PFMC/NMFS, 2009).

Although cooperatives will be associated with a processor, the harvester would have full discretion in choosing a cooperative both initially and annually thereafter and may change cooperatives annually without forfeiture. This flexibility afforded the catcher vessel sector places harvesters in a strong negotiation position. The cooperation from catcher vessels may improve quality and value of outputs and reduce input costs, but catcher vessels are likely in the good negotiation position to receive most of the benefits of those improvements through the ex vessel pricing. Most processors should obtain normal profits from their processing.

As noted above, some processors may be able to gain some negotiating leverage in the rockfish market through negotiating landings from the fishermen in other fisheries. In addition, vertically integrated processors could have some advantage over processors that are not vertically integrated under this alternative. However, the extent of the negotiating leverage for other fisheries and those associated with vertically integrated processors is difficult to predict and will differ with circumstances.

2.4.10 Effects on overall production efficiency

This section examines the effects of the alternatives on overall production efficiency. This efficiency is the combined efficiency in fishing and efficiency in processing. The section briefly summarizes the combined effects of the various analyses above.

Status Quo

Under the status quo, overall production efficiency in the CGOA rockfish is likely to be similar to levels seen prior to implementation of the rockfish pilot program. For catcher processors, quality of products is relatively high as catch is processed quickly onboard. These vessels are likely to produce exclusively whole and head and gut products. For the shore-based sector, quality of landings and processed products are likely to suffer under a race for fish. In addition, the race for fish is likely to limit the ability of shore-based processors to develop and supply markets for higher valued products.

Production of rockfish caught by non-trawl vessels is likely to be similar to current production. Catch is likely to be of high quality and will be processed into relatively high valued products.

Catcher processor alternative 2 – cooperative only - CP-2

Overall production efficiency is likely to increase slightly under this alternative, as catcher processors are able to make some quality improvements with the ending of the race for fish under status quo. Product form (whole and head and gut) almost certainly will remain the same under this alternative due to operational limitations and regulatory and vessel safety requirements (e.g., load line). Some technical efficiencies could be realized through the consolidation of catch on fewer vessels and relaxing any time pressure arising under the race for fish.

Catcher processor alternative 3 – cooperative or limited access - CP-3

The change in overall production efficiency under this alternative is likely to be the same as under the other catcher processor alternative. Minor improvements in quality and technical efficiencies could result in some overall production efficiency gains.

Catcher vessel alternative 2 – harvester only cooperative - CV-2

Overall production efficiency should improve substantially under this alternative. Quality of rockfish landings should improve as the race for fish is ended. Processors should also be able to better handle landings producing higher quality and higher valued products. Both sectors should realize some gains in technical efficiency through better scheduling of their activities. Costs should be reduced as participants

in both sectors are able to determine inputs to reduce costs of production without concern over losing their share in the fishery, if rate of harvest is slowed.

Catcher vessel alternative 3 - cooperatives with allocation of harvest shares to processors - CV-3

Overall production efficiency should also improve substantially under this alternative. As under the previous catcher vessel alternative, quality of production should improve and higher valued products should be produced. Participants in both segments of the inshore sector should realize efficiencies through cost reductions, as they will no longer have to race to preserve their share of fish thereby reduce inputs costs and/or improve product outputs.

Catcher vessel alternative 4 - cooperative with severable processor association (no forfeiture) - CV-4

The change in overall production efficiency under this alternative is likely to be similar to the change under the other catcher vessel cooperative alternatives. Improvements in quality and technical efficiencies should result under primarily as a result of the harvest share allocations and the extended season in the fishery.

2.4.11 Effects on consumers

This section examines the effects of the rockfish program alternatives on consumers. To allow an examination of the net benefits to the Nation, where possible, the effects on U.S. consumers are distinguished from the effects on consumers in other markets. The rockfish program alternatives are again grouped in this section, because the effects are similar under those alternatives.

Status Quo

Consumers are likely to be supplied with products from the rockfish fisheries that resemble those produced prior to implementation of the rockfish pilot program in 2007. Catcher processors during that period produced high quality frozen head and gut and whole fish, most of which was sold into Asian markets. Production from catcher vessel catch is likely to suffer from poor handling. Landings are likely to be made into primarily head and gut and whole fish.

During this period, most of the catcher vessel product was sent to Asia, much of which returned after reprocessing. Some catch was made into fillets at the primary processing plant, but the ability to make quality fillets is limited because of the quality of the landings and the time pressures arising from the race for fish.

Program Alternatives

Production of the catcher processor sector is likely to be very similar to production under the status quo. Minor quality improvements could occur, but these vessels already produce high quality products because their catch is processed onboard soon after it is harvested. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian consumers, as most of the production from this sector is sold into that market.

Changes may occur in the production of catcher vessel harvests to the benefit of consumers. Catcher vessel landings are likely to be of higher quality under all three of the catcher vessel program alternatives. Processors may change product outputs to produce fillets, instead of the less processed whole and head and gut products likely to be produced under the status quo. Some processors may attempt to serve

domestic fresh markets, which would also benefit U.S. consumers. Most of the consumer benefits of production improvements in the fisheries are likely to be realized by U.S. consumers. The potential for these changes depends on the success of processors in developing these markets. To date, in the pilot program, these markets have failed to develop.

2.4.12 Effects on management, monitoring, and enforcement costs

Management, monitoring, and enforcement under the different alternatives are described in Section 2.4.4 above. This section compares the costs of the management, monitoring, and enforcement under the different alternatives, as part of the net benefits analysis.

Status Quo

Under the status quo management, NOAA Fisheries incurs the costs of management and enforcement of fishing under the LLP. The costs of observer coverage are borne by the fleet and shore-based processors.

Catcher Processor Program Alternatives

Under the catcher processor program alternatives, NOAA Fisheries will incur additional costs of determining eligibility and making allocations of history to participants under the program. Cooperative agreements will be reviewed by the agency. Annual allocations must be made to cooperatives and to a limited access fishery, if any persons eligible for the program choose not to join a cooperative. NOAA Fisheries will be required to conduct catch accounting for the different allocations and monitor the allocations using observer data. The costs to NOAA Fisheries are likely to exceed the status quo costs of managing the rockfish fisheries under the LLP, which are in large part coordinated with management costs of several fisheries (and therefore are distributed across several fisheries). Enforcement costs are also likely to rise under the new program, as enforcement personnel will be required to oversee activities over a longer period. In addition, individual accountability for catch of cooperative allocations requires additional enforcement resources. If a limited access fishery is required, additional inseason management of a limited access fishery with a relatively small allocation will be required. This management is generally similar to the status quo management. Although the cost of the management for a smaller fleet should be less, the additional complication of monitoring a very small fleet fishing a very small allocation could add to those costs.

In addition to costs that will be borne by NOAA Fisheries, participants in the fishery are likely to have some additional costs. To date, NOAA Fisheries has maintained that to fully monitor total catch on a catcher processor requires the use of flow scales, with every haul observed. A sampling station with a motion-compensated platform scale (to verify accuracy of the flow scale) would be required on board the vessel. Currently, nearly all of the vessels that carry licenses that are eligible for the program have both flow scales and observer stations. Fully outfitting these vessels to meet the monitoring requirements is costly.⁷⁴ Approximately one-half of the vessels qualifying for this program, however, would be subject to minimum groundfish retention standard requirements to continue their participation in Bering Sea fisheries. Since that program also requires these same monitoring upgrades, the cost of the upgrades for those vessels should be considered a cost of maintaining the vessel's operations in both the CGOA rockfish fisheries and the Bering Sea fisheries, rather than simply a cost of continued participation in the rockfish fisheries.

⁷⁴ Approved flow scales are estimated to cost \$50,000. Observer station equipment, including an approved platform scale, is estimated to cost between \$6,000 and \$12,000. Installation costs are likely to vary across vessels and cannot be predicted. In addition, smaller vessels in the fleet could have difficulty accommodating these equipment and facility upgrades. As a result, installation could range from \$20,000 to \$250,000. Total costs of equipment and installation would therefore range from approximately \$75,000 to \$300,000. Costs in excess of \$150,000 are likely to be rare.

Added costs of observers are difficult to predict under the program. A requirement that all catch under the program be observed is likely to result in some added observer coverage for vessels harvesting fish under the program. A certified observer is estimated to cost approximately \$375 per day. Prior to the rockfish pilot program, the rockfish fishery has remained open approximately 2 to 3 weeks each year. The cost of an observer for approximately 2 and ½ weeks is approximately \$6,500. If an average vessel attempted to slow fishing to improve quality of products under the program fishing could be extended beyond the current 2 and ½ weeks. In considering these costs, it is also important to consider costs will vary with the size of the allocation fished and that several participants' allocations vary from the average.

The extent of the additional coverage, however, is difficult to predict because participants may coordinate fishing under the program to focus observer coverage to reduce costs. Savings are likely to be realized not only by participants stacking history on a single vessel, but also through coordinating monitoring within a trip. For example, a catcher processor harvesting allocations in the program may be able to catch program rockfish and non-program fish in a single trip. If rockfish program tows are coordinated with an observer that is already on the vessel to observe harvests in the fisheries for other species, some savings on observer costs may be realized. The coordination of observer coverage for fishing under the program will determine the extent to which participants are able to realize observer costs savings by coordinating observer coverage for their rockfish fishing and other fishing activity.

The overall rise of administration and enforcement costs will be reduced by the very small catcher processor fleet that is eligible for the program.

Similar to the crab rationalization program and the halibut and sablefish IFQ program, which also have cost recovery programs, the Council has included a cost recovery program that would require the payment of up to 3 percent of the ex vessel value of all quota landings to Restriction Access Management (RAM) to defer costs of administering the new rockfish program. Under that program, payments would be made by the harvest share holders and must be made on or before January 31 in the year after the landings. To facilitate tracking of payments, buyers would be required to report all landings by in the year of the landing. NMFS would then submit bills to share holders based on these reports for 3 percent of the ex vessel gross revenues of the landings (based on the average price for the species). Persons may pay a lower amount provided they can demonstrate the actual price paid for landings. The fee can be adjusted downward by NMFS in the event that recovered fees exceed the management and enforcement costs in the fishery.

Catcher Vessel Program Alternatives

As under the catcher processor program alternatives, NOAA Fisheries will incur additional costs under the catcher vessel program alternatives of determining eligibility and making allocations of history to participants under the program. Cooperative agreements will be reviewed by the agency. Annual allocations must be made to cooperatives and to the limited access fishery, if any persons eligible for the program choose not to join a cooperative. NOAA Fisheries will be required to conduct catch accounting for the different allocations and monitor the allocations using observer data. Enforcement costs are also likely to rise under the program, as more resources will be required because of the cooperative allocations and the longer seasons. If an entry level fishery is prosecuted by non-members of cooperatives, cost of management would rise to an extent similar to the costs described for the limited access catcher processor fishery.

Observer costs, borne by the fleet, are likely to increase for the catcher vessel sector to provide adequate information concerning fishing activity under the program. The extent of these additional costs is not known, and depends on the specific monitoring program developed by NOAA Fisheries and the fishing

practices of participants. To reduce observer costs (and operational costs), it is likely that some rockfish harvesting will be consolidated within (and possibly across) cooperatives. The extent of the impact of this consolidation cannot be predicted and will depend on costs in general, including observer costs.

2.4.13 Effects on Environmental/Non-Use Benefits

Improvements in environmental conditions are valued by the public at large. For example, preservation of endangered species is often considered to have significant value to the public. Although rockfish populations could be of less concern to the public than high visibility species such as bald eagles, it is likely that the public values preservation of these stocks. The value of knowing that a stock is well maintained in its natural habitat is commonly referred to as a non-use value. In addition to the existence of a resource, the public also likely values the use of the resource. For example, even if fish stocks are well managed and catch is at levels that maintain acceptable stocks sizes, the public may experience some loss of value, if catch from the fishery is not well utilized and goes to waste. No know studies of these non-use values have been conducted to date, preventing any quantitative estimates here. This section, however, provides a qualitative analysis of these non-use benefits.

Status Quo

Under status quo, catch of all species of interest are limited either by TAC or by PSC limits. Managers would monitor harvests inseason, closing the fisheries when the total allowable catch is estimated to be taken. Managers have become quite adept in their estimates, and have generally succeeded in maintaining catch below TAC. Occasionally, TACs are exceeded, but overages have not exceeded OFL or threatened stocks. Public non-use benefits derived from the management of health stocks of these species are likely to be maintained, if the current management is perpetuated.

Although total catch of each species is limited, discarding is permitted of most species. Secondary species tend to have very low discard rates in the rockfish fishery, rarely exceeding 1 percent of their total catch in the fishery (NMFS discard reports).⁷⁵ Additionally, minor amounts of other species are caught incidentally, much of which is discarded. Mortality of discards of incidental catch reduces the non-use values to the public that arise through productive use of the resource.

Program Alternatives

Under the rockfish program alternatives, catch of all species of interest will continue to be limited by TAC or PSC limits. These limits should be effectively maintained through the monitoring and management program, perpetuating the current non-use benefit derived from maintenance of healthy stocks.

NOAA Fisheries will make annual, exclusive cooperative allocations for the three target rockfish species and for 3 (or 4) secondary species, depending on the sector, under the program. The program will establish full retention requirements for all of these allocations. These measures should have the effect of reducing discards of these species, contributing additional non-use benefits that might arise from conservation of the resource. In addition, production from rockfish catch under the program is likely to be of higher products in the catcher vessel sector. These improvements could also provide non-use benefits to the public that values efficient production from the resourced (i.e., improved utilization and improved retention).

⁷⁵ In only one year, 1998, have any of the discard rates of secondary species exceeded 2 percent of total catch of that species. In that year, discards of thornyheads was almost 20 percent.

2.4.14 Effects on Net Benefits to the Nation

The net benefits to the Nation arising out of the change in management can accrue from several sources. First, production efficiencies in harvesting and processing could occur as a direct result of management changes. These production changes may affect the benefits realized by U.S. consumers, through changes in product quality, availability, variety, and price. Further, the changes in conduct of the fisheries and management could result in changes in the environment, which yield benefit changes to the Nation through ecosystem productivity changes and welfare changes attributable to non use/passive use values. These various contributing effects of the alternatives to the net benefits to the Nation are summarized in the sections above. This section summarizes the different effects to allow comparison of the different alternatives and conclusions concerning the overall effects of the alternatives on net benefits to the Nation.

Status Quo

If the status quo management of the rockfish fisheries is selected, net benefits to the Nation are likely to be similar to those levels seen prior to the implementation of the rockfish pilot program in 2007. For catcher processors, quality of the whole and head and gut production during that period was relatively high. Few consumer benefits from this production would be realized in the U.S., as most fish is sold into foreign markets. For the shore-based sector, quality of landings and value of processed products may suffer decreased production efficiency. Consumer benefits of these harvests would be diminished by the quality and product value. In addition, a substantial portion of any consumer benefit is not realized by U.S. consumers, as much of the production is sold into foreign markets. Costs of monitoring and management are relatively low, as catch is monitored at the fleet level. Non-use benefits to the public would decrease to some extent by waste and bycatch.

Catcher processor cooperative alternatives

Net benefits to the Nation will be affected by a few different factors under the catcher processor sector cooperative alternatives. Production efficiency should increase slightly, as some participants realize moderate improvements in quality of production. Few, if any, benefits of production improvements will be realized by U.S. consumers, as this fleet is likely to continue to serve international markets. Costs of management, monitoring, and enforcement will increase to administer and oversee the cooperative allocations. Some additional benefits to the Nation could arise through reduction in bycatch, since the program requires full retention of several species. Since discard rates of these species are relatively low in the current fishery, these benefits are likely not substantial.

Catcher vessel cooperative alternatives

A few different factors will affect net benefits to the Nation under the catcher vessel cooperatives alternatives. Slowing the rate for fishing and extending the season should lead to substantial increases in production efficiency, as participants in both sectors improve quality and higher value products are produced. Some production benefit could flow to foreign-owned processing entities, but since increases in processor net benefits under this alternative are relatively minor, almost all of the gain in production efficiency should be realized by U.S. entities and citizens. Production improvements should lead to benefits for U.S. consumers, as this fleet is likely to maintain, or even increase production for domestic markets. In addition, greater production is likely to occur domestically, as fewer primary products are shipped abroad for reprocessing. Increased administration and oversight necessary for cooperative allocations and an extended season will result in an increase in costs of management, monitoring, and enforcement. Participants may also require additional observer coverage. Some additional benefits to the Nation could arise through reduction in bycatch (particularly halibut PSC).

2.4.15 Effects on entry into the fisheries

The ability of interested persons to enter the rockfish fisheries differs under the status quo and the different program alternatives.

Status Quo

Entry to the trawl rockfish fisheries under status quo is limited by the LLP. Since a substantial number of LLPs endorsed for the CGOA fisheries are not active in the rockfish fisheries, several persons holding those licenses could enter the fishery under this alternative. The lack of entry to the fishery under continuation of LLP management is a result of overcapacity in the fishery, which is demonstrated by the very short season prior implementation of the rockfish pilot program in 2007. If LLP management is selected as the preferred alternative, entry of additional vessels is unlikely. In the long run, some persons may choose to enter the fishery, but only if current participants depart from the fishery or stock abundance or market conditions change significantly for the better.

Entry to the non-trawl sector is also limited by the LLP. Vessels under 26 feet, however, do not require an LLP license to fish in federal waters, so fishermen wishing to use these relatively small vessels are not limited. If the LLP management is selected, it is possible that some entry in the non-trawl sector would occur, as several persons participating in this sector have expressed an interest in the fishery. The sector has had relatively little historic participation, so the potential for the sector to successfully target rockfish has not been firmly established. In the long run, the prospect for entry, however, depends on the success of new entrants, since this sector has little history in the fishery and has not demonstrated that it can successfully prosecute rockfish.

Program Alternatives

To assess the effect of the program alternatives, one must first develop a workable definition of entry. This analysis assumes that entry means more than simply entering a vessel into the fishery, but instead means the development of one's participation to resemble a typical participant in the fishery. The analysis examines both the potential to achieve that level of participation and the potential processes by which a person could develop participation to that level.

Using the definition, entry to the trawl fishery is clearly limited by the rules of the program alternatives. Although entry to the "entry level fishery" is open to all LLP holders, this fishery is unlikely to support activities of a typical rockfish vessel. To enter the rockfish fisheries at the level of a typical participant, a person must acquire one or more licenses that are eligible and carry history adequate to support the operation of a vessel. Alternatively, a person could acquire a single license to enter the fishery, then enter a cooperative and acquire annual allocations within a cooperative to fish on a vessel. While this entry is possible, the cooperative structures that are effective at reducing transactions costs for existing participants are also likely to limit the ability of a new entrant to acquire additional portions of the cooperative's annual allocation to fish on a vessel. Clearly entry is quite limited under the program alternatives. In addition, the prices of eligible licenses are likely to vary with history in other fisheries. Since any transaction is likely to value all groundfish history related to the non-severable license, it is possible that some rockfish licenses with substantial history in other fisheries could be very costly despite relatively small qualifying rockfish histories.⁷⁶ The extent of the effects of histories in other fisheries on the prices of licenses cannot be predicted. Whether entry is more effectively limited by the program than under the status quo management (which allows free entry to a fishery that dissipates a substantial portion of the rents in a race for fish) is uncertain.

⁷⁶ Histories in other fisheries will likely be considered an economic asset for their potential value in other rationalization programs, such as comprehensive Gulf rationalization.

For catcher vessels, entry is likely to be more limited under the harvester only cooperative and the severable harvester/processor association alternatives. Under these alternatives, catcher vessels are likely to receive a substantially greater portion of the rents in the fishery. These rents are likely to be capitalized into the eligible licenses driving up the costs of those licenses to potential entrants. Acquisition of annual allocations under the program is also likely to be more costly under this alternative. Under the harvester cooperatives with allocations of harvest shares to processors alternative, entry of catcher vessels should be less costly as catcher vessel participants are likely to realize a little more than normal profits from their participation in the fishery. Entry, however, could still be costly, if most rockfish eligible licenses carry substantial history in other fisheries.

Entry to the non-trawl sector is likely to be similar to entry in the status quo fishery. In recent years, non-trawl participants have harvested a very small portion of the target rockfish TACs. The allocation of primary rockfish under the both program alternatives should be adequate to support any participants in this sector that wish to enter the fisheries.

2.4.16 Effects on Fishing Crew

The effects on fishing crew of the different alternatives are likely to be the same. To simplify the analysis the discussion of those alternatives are consolidated in a single discussion.

Status Quo

Crew participation and compensation in the rockfish fishery are likely to revert to manner it was before implementation of the rockfish pilot program in 2007. Most crewmembers worked in several different fisheries on the vessel that they worked on during the rockfish season, while some move to other vessels for particular fisheries. Crew members are compensated on a share basis, receiving a specific percent of the vessel's revenues (with crew of greater experience or in more demanding positions receiving a greater share). The pattern of crew participation and compensation is likely to return to the pre pilot program years, if status quo is selected.

Program Alternatives

The development of the rockfish program is likely to have some minor effects on crew. Fishing can be expected to slow and occur outside of the traditional July season. In addition, some vessels that have historically participated in the fishery prior to 2007 are likely to no longer fish in the rockfish fisheries. Notwithstanding this decrease in vessels in the rockfish fishery, it is unlikely that any vessels will entirely leave the North Pacific fisheries, as most rockfish vessels also have substantial participation in other fisheries.

Crew compensation could change in some cases. Crew on some vessels that leave the rockfish fishery are likely to lose some income, if the vessel is unable to make up the loss in revenues in other fisheries. This income is not likely to be a substantial portion of a person's annual income, but could be significant to the crewmember in some cases. In addition, crew on vessels that remain in the rockfish could realize an increase in income from increased harvests and revenues in the fishery. Catch increases are likely under all alternatives. Revenue increases should be the greatest for catcher vessels under the catcher vessel harvest only cooperative alternative and under the severable harvester/processor association alternative because of the increased negotiating leverage of catcher vessels and product improvements under those alternatives. Catcher vessel crews, however, may not fare as well under harvester cooperatives with allocation of harvest shares to processors alternative, as catcher vessel negotiating leverage is likely to be weaker to some degree. Crew on catcher processors that participate in the fishery could benefit from

consolidation of harvests on fewer vessels and possibly a minor increase in revenues, if quality improvements are realized.

2.4.17 Effects on Shore-Based Processing Crew

Shore-based processing crew could be affected by the new rockfish program. Affects are likely to be similar under the two catcher vessel alternatives, so they are discussed in a single section.

Status Quo

Processing practices are likely to be similar to the period before implementation of the rockfish pilot program in 2007, if status quo is selected. In that fishery, most of the processing took place in Kodiak and was undertaken by resident crews. Crews were employed processing rockfish for a relatively short period of time. When rockfish was processed during this period, relatively large crews were necessary to maintain a flow of fish through plants that kept pace with vessel offloads. Because the fishery coincided with the pink salmon fishery, some plants employed substantially larger crews that were juggled between lines to process landings from both fisheries. Although most plant workers were also employed in other fisheries, the short intense season meant that their employment was more sporadic. Processing landings from limited access, competitive fisheries hinder the ability of plants to develop regular employment schedules and support for their primary resident crews. The absence of regular employment also made it more difficult for plants to retain good employees.

Program Alternatives

Shore-based processing employment should change some under the new proposed alternatives. Harvests from the rockfish fishery are likely to be distributed over a longer period of time to improve quality and to produce higher valued, more processed products. Landings are likely to be scheduled to serve particular markets, but also to facilitate the scheduling of crews. Although the rockfish fishery is a relatively small portion of the processing of participating qualified processors, the new rockfish program alternatives are likely to contribute to stability in processing employment compared to status quo, if landings are distributed across periods when plants are less utilized. This increased stability could lead to fewer processing jobs at peak times, but the remaining jobs should provide more stable and consistent employment. The relative stability should contribute to the processors' ability to maintain stable resident crews that are common in Kodiak processors.

The effects of the catcher vessel alternatives could be slightly different. The alternative with harvester shares allocated to processors is likely to have greater stability across processors, as each qualified processor can be expected to be allocated a percentage of the harvest share pool based on rockfish processing history during qualifying years. Each processor should have a relatively strong position in negotiations with cooperative members to schedule landings at time preferred by the processor. Under the harvester only cooperative and severable harvester/processor association alternatives, processors will need to compete more aggressively for landings for the cooperatives. While landings can be expected to be scheduled to achieve efficiencies through serving available markets and addressing employment scheduling needs, it is possible that some processors will lose landings in the competition. This change in the distribution of landings could be disruptive to processing crew employment, at least in the short run.

2.4.18 Effects on Safety

Since fishing practices and seasons are likely to be very similar under all of the pilot program alternatives, implications for safety should be the same. To simplify the analysis safety considerations under the pilot program alternatives are contained in a single discussion.

Status Quo

Under the status quo, participants would be racing for catch during a brief season early in July. Although weather tends to be relatively good at this time of the year, occasionally, inclement weather comes up during this season. Under LLP management, an incentive is created to fish in inclement weather and to continue fishing despite operational dangers to increase one's share of the total catch. The effects of this incentive likely vary among participants. The overall effect on safety in the fishery is not known with certainty.

Program Alternatives

Management of the fishery under an extended season with exclusive allocations to cooperatives should reduce the incentive for fishermen to continue fishing in inclement weather or when operational dangers arise. Although a person's allocation will not be jeopardized by decisions to delay fishing to reduce safety risks, some incentives may exist for persons to fish in inclement weather (including market opportunities and operational cost savings). Many proponents contend that share-based management (or rationalization) makes fisheries safer, but little empirical work has been undertaken to verify that conclusion. Overall, the incentive for participants to fish in inclement weather should be reduced under the program alternatives.

2.4.19 Effects on Other Fisheries

Allowing eligible catcher processors and catcher vessels to form cooperatives should allow them to better optimize when and where they fish. The increased flexibility in planning their fishing during the rockfish season is expected to enable companies to alter their historic fishing patterns and improve their efficiency. Efficiency improvements would reduce the costs associated with harvesting and processing catch. However, the flexibility that allows them to change their fishing patterns could also give them a competitive advantage over other participants in the GOA that are unable to rationalize their fishing operations. For example, if eligible vessels can decide the best time to fish their allocation, it may provide them opportunities to increase their participation in GOA groundfish fisheries. Prior to the rockfish pilot program, these vessels may not have had the opportunity to participate in those fisheries at the level now possible with cooperative membership, because of conflicts with other fishing seasons. Expanding their participation in other fisheries not directly allocated among members of the sector could result in other participants having less fish available to harvest. Fishermen historically participating in those fisheries may feel they are disadvantaged as a result of the rockfish program. As a result, harvest limits may be placed on the fishermen participating in the rockfish program to restore the balance that existed prior to the initial rockfish pilot program forming (i.e., "sideboards").

Harvest caps would allow the rockfish program members to catch up to their "historic" amounts of species they harvest outside of their allocation. Harvest caps are not an allocation. They are a limit on the maximum amount of a species the sector can catch. Members of the sector are not guaranteed that amount of catch. They must compete against other fishermen to catch the fish before the TAC is harvested. Cooperative harvest caps were first developed as part of the AFA and were frequently referred to as "sideboards" in that amendment, since they limited the AFA cooperatives members' expansion into other fisheries. Sideboards were also included in the rockfish pilot program to limit eligible participants from expansion into other fisheries. Given that similar impacts could result from the new rockfish program, the Council thought it would be prudent to consider harvest limits as part of this amendment package. This section examines the effects of the rockfish program alternatives on other fisheries. Note, the sideboards options included below are the same sideboards included in the current pilot program. In other words, there are no new sideboards, just options to remove the sideboards.

18 Sideboards

18.1 Catcher vessel options

West Yakutat and Western Gulf Primary Rockfish Species

Option 1: For fisheries that close on TAC in the Gulf, the qualified vessels in the trawl catcher vessel sector would be limited, in aggregate, in the month of July to the historic average catch of those vessels based on the retained catch as a percentage of the retained catch in the fishery in the month of July during the qualification years. Fisheries that this sideboard provision would apply to include West Yakutat rockfish and Western Gulf rockfish.

Option 2: For catcher vessels, prohibit directed fishing for WYAK and WGOA primary rockfish species.

Halibut PSC

Option 1: For flatfish fisheries in the GOA that close because of halibut bycatch, the qualified vessels in the trawl catcher vessel sector would be limited, in the aggregate, in the month of July to the historic average halibut mortality taken by those vessels in the target flatfish fisheries in the month of July by deep and shallow complex as a Gulf-wide cap.

Option 2: For the month of July, limit all CVs to the shallow halibut complex fisheries (except for rockfish target fisheries in CGOA, WYAK and WGOA).

Suboption: Limit all CPs to the deep water halibut complex fisheries for the month of July.

In the event that one or more target rockfish fisheries are not open, sideboard restrictions will not apply for those target allocations.

IFQ halibut and sablefish are exempt from sideboard provisions

Bering Sea and Aleutian Island Sideboard Provisions

Yellowfin sole, other flatfish, and Pacific ocean perch fisheries

Option 1: The qualifying vessels in the trawl catcher vessel sector cannot participate in the directed yellowfin sole, other flatfish (flathead, etc) or Pacific Ocean perch fisheries in the BSAI in the month of July.

Option 2: The qualifying vessels in the trawl catcher vessel sector can participate in the limited access yellowfin sole, other flatfish or Pacific Ocean perch fisheries in the BSAI in the month of July.

Pacific cod fishery

Option 1: Qualifying vessels in the trawl catcher vessel sector can fish in the BSAI Pacific cod fishery in the month of July and would be limited, in aggregate, to the historic average catch of those vessels in the BSAI Pacific cod fishery based on the retained catch as a percentage of retained catch in the catcher vessel trawl fishery in July during the qualification years 1996 to 2002.

Option 2: The qualifying vessels in the trawl CV sector can participate in the BSAI Pacific cod fishery in the month of July without any sideboard limit.

AFA non-GOA exempt CVs qualified under this program are subject to the restraints of AFA sideboards and their co-op agreements, and not subject to additional sideboards under this program.

18.2 Catcher processor options

West Yakutat and Western Gulf Primary Rockfish Species

Option 1: For fisheries that close on TAC in the Gulf, the qualified vessels in the trawl catcher processor sector would be limited, in aggregate, in the month of July to the historic average catch of those vessels based on the retained catch as a percentage of the retained catch in the fishery in the month of July during the qualification years. Fisheries that this sideboard provision would apply to are the West Yakutat and Western Gulf primary rockfish species fisheries.

Option 2: For catcher processors, no sideboard limits will apply to the West Yakutat and Western Gulf primary rockfish species fisheries.

Halibut PSC

Option 1: For flatfish fisheries in the GOA that close because of halibut bycatch, the qualified vessels in the trawl catcher processor sector would be limited, in the aggregate, in the month of July to the historic average halibut mortality taken by those vessels in the target flatfish fisheries in the month of July by deep and shallow complex as a Gulf-wide cap.

Option 2: For catcher processors, no sideboard limits will apply to Gulf 3rd season halibut PSC.

Suboption: Limit all CPs to the deep water halibut complex fisheries for the month of July.

Note: IFQ halibut and sablefish are exempt from sideboard provisions

Standdown for vessels that opt out of the rockfish fisheries

Option 1: CP vessels may decide to opt out of the CGOA cooperative program on an annual basis. These CP vessels may not target POP, Northern rockfish or Pelagic Shelf rockfish in the CGOA in the years they choose to opt out. They may retain these species up to the MRA amount in other fisheries. They will be sideboarded at the sector level in the GOA as described in the general provisions.

The history of CP vessels which opt out will remain with the sector.

CPs that opt out of the rockfish cooperative program will be prohibited, for two weeks following the start of the traditional July rockfish fishery, from entering other GOA fisheries in which they have not previously participated. Participation shall be defined as having been in the target fishery during the first week of July in at least two of the qualifying years. For purposes of qualifying under this provision, history from area 650 (SEO) will be considered the same as history from area 640 (WY). The following weekend dates will be used for determining participation in a target fishery:

1996 – July 6
1997 – July 5
1998 – July 4
1999 – July 10
2000 – July 15
2001 – July 7
2002 – July 6

Opting out is an annual decision. CP vessels which choose to opt out must so notify NMFS. The decision to opt out should not in any way alter the status of their catch history for future rationalization programs.

Option 2: No standdown for vessels that opt out of the rockfish fishery.

Standdown for vessels that join cooperatives

Option 1: For the CP sector, the cooperative program fishery participants must either:

- 1) start fishing in the target rockfish fisheries at the same time as the opening of the CGOA rockfish limited access fisheries (in July) and harvest 90% of their CGOA rockfish allocation prior to entering any other GOA non-pollock groundfish fishery, or
- 2) standdown for two weeks from the opening of the CGOA rockfish limited access fishery prior to participating in any other GOA non-pollock groundfish fishery.

A vessel which has met either standdown requirement can then move into the GOA open access fisheries subject to the sector level limitations in the GOA in the general sideboard provisions.

To the extent permitted by the motion, history may be leased between vessels. Each member of a cooperative that transfers its history to another CP or CV must still refrain from operating in any other GOA groundfish fishery until the earlier of:

- 1) 90% of all of the CGOA rockfish allocation on the stacked vessel is harvested in the CGOA, provided fishing of the allocation began on or after the opening of the limited access fishery
- 2) two weeks from the opening of the limited access fishery prior to participating in any other GOA groundfish fishery.

Members of a cooperative will be subject to all limitations and restrictions described in the general sideboard provisions and CP specific sideboard provisions except that cooperative members shall not be subject to any standdown in the GOA groundfish fisheries, if all vessels in the co-op maintain adequate monitoring plan during all fishing for CGOA rockfish sideboard fisheries.

In addition to the other limitations and restrictions described above, each cooperative will be limited in the aggregate:

- 1) for fisheries that close on TAC in the GOA in the month of July, to the historic average total catch of the cooperative members in the month of July during the qualification years 1996 to 2002. Fisheries that this sideboard provision would apply to include West Yakutat rockfish and WGOA rockfish, and
- 2) for flatfish fisheries in the GOA that close because of halibut bycatch in the month of July, to the historic average halibut mortality taken by cooperative members in the target flatfish fisheries in the month of July by deep and shallow complex.

Option 2: No standdown (or alternative cooperative limit) for vessels that join cooperatives in the rockfish fishery.

Standdown for vessels that join the limited access fishery

Option 1: The limited access fishery starts at the same time as the traditional rockfish target fishery (early July). For vessels that account for less than 5% of the allocated CP history in the Pacific Ocean perch fishery that participate in the limited access rockfish fishery, there are no additional intra-sector sideboards. For vessels that account for greater than or equal to 5 percent of the allocated CP history in the Pacific Ocean fishery that participate in the limited access

rockfish fishery and GOA standdowns are in place until 90% of the limited access Pacific Ocean perch quota is achieved.

Option 2: No standdown for any vessels that join the limited access rockfish fishery.

AFA non-GOA exempt CVs qualified under this program are subject to the restraints of AFA sideboards and their coop agreement, and not subject to additional sideboards under this program.

Status quo

Under the status quo, management of the rockfish fisheries would revert to the LLP, under which managers oversee a limited access race for fish. Reverting back to a limited access race for fish will likely have no effect on other fisheries. The opening of the rockfish fisheries would be scheduled so as distribute effort between rockfish and flatfish in the North Pacific. In addition, because of the race for fish environment and the conflicts with other fishing seasons, rockfish vessels will have little opportunity to participate in other fisheries during the opening of the rockfish fishery.

Catcher vessel alternatives

Under the catcher vessel alternatives, intersectoral sideboards will be established to limited license holders eligible for the rockfish program from increasing their effort in other fisheries. Under sideboards eligible catcher vessel license holders will be limited in the aggregate 1) to their historic catch of target species in Gulf of Alaska July fisheries that were typically constrained by catch of the target species prior to implementation of the rockfish pilot program (2007) and 2) to their historic average halibut mortality in GOA July fisheries that were typically constrained by catch of halibut prior to implementation of the pilot program. In addition, the eligible license holders would also be limited, in the aggregate, to their historic catch of Pacific cod in the Bering Sea and Aleutian Islands in the month of July.

Table 2-71 and Table 2-72 show estimated sideboard percentage for the catcher vessel sector in West Yakutat and Western GOA rockfish fisheries in which sideboards would limit harvest of the target species. The tables show the sector's retained catch and total retained catch taken by rockfish eligible catcher vessels. Overall, the estimated sideboard limits in the tables are likely insufficient for a directed fishery therefore NOAA Fisheries would likely close the fishery to directed fishing for the month of July. Estimated sideboard limits for 1996 to 2002 are from the rockfish pilot program sideboard limits, which are presented in Table 2-34.

Table 2-71. Estimated catcher vessel sideboard amounts in West Yakutat and Western GOA rockfish fisheries by eligible rockfish vessels using 1998 to 2006 qualifying years

	AFA Trawl CVs						Non-AFA Trawl CVs		All Trawl		All retained catch (metric tons)	Percent of retain catch	
	Non exempt		Exempt		Total		Number of vessels	Landings (metric tons)	Number of vessels	Landings (metric tons)			
	Number of vessels	Landings (metric tons)	Number of vessels	Landings (metric tons)	Number of vessels	Landings (metric tons)							
BSAI Pacific cod		18	377	4	150	22	527	4	275	26	801	1,319.737**	0.06%
Western Gulf	Northern Rockfish	0	0	0	0	0	0	0	0	0	0	3,662	0.00%
	Pelagic Shelf Rockfish	0	0	0	0	0	0	0	0	0	0	1,535	0.00%
	Pacific Ocean Perch	0	0	0	0	0	0	0	0	0	0	13,131	0.00%
West Yakutat	Pelagic Shelf Rockfish	5	10	1	*	6	*	3	6	9	40	2,493	1.61%
	Pacific Ocean Perch	6	279	1	*	7	*	2	*	9	315	5,327	5.92%

Source: WPR and ADF&G Fish Tickets

*Withheld for confidentiality

**Includes only inshore catch

Table 2-72. Estimated catcher vessel sideboard amounts in West Yakutat and Western GOA rockfish fisheries by eligible rockfish vessels using 2000 to 2006 qualifying years

	AFA Trawl CVs						Non-AFA Trawl CVs		All Trawl		All retained catch (metric tons)	Percent of retain catch	
	Non exempt		Exempt		Total		Number of vessels	Landings (metric tons)	Number of vessels	Landings (metric tons)			
	Number of vessels	Landings (metric tons)	Number of vessels	Landings (metric tons)	Number of vessels	Landings (metric tons)							
BSAI Pacific cod	18	258	4	150	22	408	4	275	26	683	1,065,379**	0.06%	
Western Gulf	Northern Rockfish	0	0	0	0	0	0	0	0	0	4,007	0.00%	
	Pelagic Shelf Rockfish	0	0	0	0	0	0	0	0	0	1,535	0.00%	
	Pacific Ocean Perch	0	0	0	0	0	0	1	*	1	13,131	*	
West Yakutat	Pelagic Shelf Rockfish	3	*	0	0	3	*	2	*	5	7	2,493	0.30%
	Pacific Ocean Perch	3	*	0	0	3	*	2	*	5	274	5,327	5.15%

Source: WPR and ADF&G Fish Tickets

*Withheld for confidentiality

**Includes only inshore catch

Eligible catcher vessels would also be limited by halibut mortality in flatfish fisheries in the Central GOA, Western GOA, and West Yakutat. Table 2-73 and Table 2-74 show estimated halibut mortality sideboard amounts in the Central GOA, Western GOA and West Yakutat for 1998-2006 and 2000-2006 year periods. The table also shows participation by AFA catcher vessels, including AFA catcher vessels exempt from the AFA GOA sideboards. Estimated sideboard limits for 1996 to 2002 are from the rockfish pilot program sideboard limits, which are presented in Table 2-36.

Table 2-73. Estimated July halibut mortality sideboard amounts for catcher vessels using 1998-2006

		Number of non-exempt eligible AFA catcher vessels with July catch	Number of exempt eligible AFA catcher vessels with July catch	Total number of eligible AFA catcher vessels with July catch	July retained catch of eligible AFA catcher vessels (mt)	Number of non-AFA eligible catcher vessels with July catch	July retained catch of eligible non-AFA catcher vessels (mt)	Total number of eligible catcher vessels with July catch	July retained catch of all eligible catcher vessels (mt)	Total retained July catch (mt)	Percent of retained July catch by eligible catcher vessels	July halibut mortality sideboard amount
Central Gulf												
Deep water complex	Arrowtooth flounder	7	16	23	865	27	1,739	50	2,604	9,836	26.47	11.0
	Deep water flatfish	6	15	21	195	25	154	46	349	548	63.79	**
	Rex Sole	6	15	21	256	26	191	47	447	2,308	19.37	2.2
	Total deep water											13.2
Shallow water complex	Flathead sole	5	14	19	168	25	630	44	797	1,598	49.89	1.3
	Shallow water flatfish	4	13	17	1,166	25	5,510	42	6,676	8,143	81.99	85.6
	Total shallow water											86.9
Western Gulf												
Deep water complex	Arrowtooth flounder	0	0	0	0	0	0	0	0	5,072	0.00	0.0
	Deep water flatfish	0	0	0	0	0	0	0	0	10	0.00	0.0
	Rex Sole	0	0	0	0	0	0	0	0	811	0.00	0.0
	Rockfish	0	0	0	0	0	0	0	0	20,720	0.00	0.0
	Total deep water											0
Shallow water complex	Flathead sole	0	0	0	0	0	0	0	0	291	0.00	0.0
	Shallow water flatfish	0	0	0	0	0	0	0	0	152	0.00	0.0
	Total shallow water											0
West Yakutat												
Deep water complex	Arrowtooth flounder	1	6	7	10	3	2	10	13	110	11.52	0.3
	Deep water flatfish	1	4	5	32	1	*	6	*	*	*	**
	Rex Sole	1	4	5	27	1	*	6	*	*	*	0.0
	Rockfish	1	6	7	332	4	103	11	435	9,264	4.69	0.4
	Total deep water											0.7
Shallow water complex	Flathead sole	0	4	4	4	2	*	6	*	*	*	0.0
	Shallow water flatfish	0	3	3	1	1	*	4	*	*	*	0.0
	Total shallow water											0.0

Source: NMFS PSC, WPR, and ADF&G Fish Tickets

* Withheld due to confidential concerns

**Deep water flatfish included with arrowtooth due to confidentiality concerns

Table 2-74. Estimated July halibut mortality sideboard amounts for catcher vessels using 2000-2006

		Number of non-exempt eligible AFA catcher vessels with July catch	Number of exempt eligible AFA catcher vessels with July catch	Total number of eligible AFA catcher vessels with July catch	July retained catch of eligible AFA catcher vessels (mt)	Number of non-AFA eligible catcher vessels with July catch	July retained catch of eligible non-AFA catcher vessels (mt)	Total number of eligible catcher vessels with July catch	July retained catch of all eligible catcher vessels (mt)	Total retained July catch (mt)	Percent of retained July catch by eligible catcher vessels	July halibut mortality sideboard amount
Central Gulf												
Deep water complex	Arrowtooth flounder	3	14	17	566	24	1,562	41	2,129	8,599	24.8	13.6
	Deep water flatfish	3	14	17	138	23	100	40	238	298	79.7	0.0
	Rex Sole	3	14	17	200	24	153	41	353	1,885	18.7	**
	Total deep water											13.6
Shallow water complex	Flathead sole	3	14	17	96	23	518	40	614	1,240	49.5	0.4
	Shallow water flatfish	3	13	16	1,072	24	4,973	40	6,045	7,304	82.8	92.6
	Total shallow water											93.0
Western Gulf												
Deep water complex	Arrowtooth flounder	0	0	0	0	0	0	0	0	4,382	0.0	0.0
	Deep water flatfish	0	0	0	0	0	0	0	0	8	0.0	0.0
	Rex Sole	0	0	0	0	0	0	0	0	630	0.0	0.0
	Rockfish	0	0	0	0	0	0	0	0	18,457	0.0	0.0
	Total deep water											0
Shallow water complex	Flathead sole	0	0	0	0	0	0	0	0	285	0.0	0.0
	Shallow water flatfish	0	0	0	0	0	0	0	0	151	0.0	0.0
	Total shallow water											0
West Yakutat												
Deep water complex	Arrowtooth flounder	0	4	4	1	3	2	7	4	22	16.3	0.0
	Deep water flatfish	0	2	2	*	1	*	3	4	4	100.0	0.0
	Rex Sole	0	2	2	*	1	*	3	2	2	100.0	0.0
	Rockfish	0	3	3	270	3	102	6	373	7,667	4.9	0.0
	Total deep water											0.0
Shallow water complex	Flathead sole	0	3	3	0	2	*	5	1	1	100.0	0.0
	Shallow water flatfish	0	2	2	*	0	0	2	*	0	*	0.0
	Total shallow water											0.0

Source: NMFS PSC, WPR, and ADF&G Fish Tickets

* Withheld due to confidential concerns

**Rex sole and arrowtooth flounder included in deep water flatfish due to confidentiality concerns

Included in the Council motion are two options that could potentially ease the management burden associated with catcher vessel sideboards and reduce the observer coverage and costs associated with sideboard fisheries for the catcher vessel sector. The first option would prohibit catcher vessels from directed fishing for Western GOA and West Yakutat primary rockfish during the month of July. The second option would limit the catcher vessel sector to only shallow water complex fisheries⁷⁷ during the month of July. As seen in Table 2-71 and Table 2-72, the sector did not participate in the Western GOA northern rockfish and pelagic shelf rockfish for July, while in the West Yakutat rockfish fisheries the

⁷⁷ The shallow water complex includes flathead sole, shallow water flats, pollock, and Pacific cod.

sector had some catch, but likely not sufficient for a directed fishery. As a result, NOAA Fisheries would likely prohibit sideboarded catcher vessels from participating in the Western GOA and West Yakutat target rockfish fisheries altogether. Similarly, the sector's halibut sideboard limit (see Table 2-73 and Table 2-74) for use in the deep water complex fisheries⁷⁸ is likely insufficient for directed fishing in these fisheries, so NOAA Fisheries would likely prohibit sideboarded catcher vessels from targeting deep water complex species during the month of July. Given these fisheries are likely to be closed each July to directed fishing, prohibiting eligible license holders from directed fishing in these fisheries would likely reduce management costs for these fisheries and simplify sideboard regulations for the rockfish program.

Another potential benefit of the Western GOA, West Yakutat rockfish, and deep water complex prohibition is the 100 percent observer requirement for catcher vessel sector may not be necessary. With the likely closure of Western GOA and West Yakutat rockfish fisheries and deep water complex fisheries during the month of July, only the shallow water complex fisheries remains available for the catcher vessel sector during the month of July. As seen in Table 2-73 and Table 2-74, the catcher vessel sector is the primary participant in these fisheries. During the 1998 to 2006 qualifying period, the catcher vessel sector retained 50 percent of the flathead sole fishery and 82 percent of the shallow water fishery. Given the catcher vessel sector is the primary participant in the shallow water complex fisheries, a halibut PSC sideboard limit for use in shallow water complex fisheries may not be necessary for these participants during the month of July. This in turn, would eliminate the need for 100 percent observe coverage for the catcher vessel sector when participating in sideboard fisheries. By eliminating the need for 100 percent observer coverage for catcher vessels targeting groundfish other than CGOA rockfish, the potential cost savings for the catcher vessel sector would likely be significant.

Other sideboards for the catcher vessel sector include a prohibited from entering the Bering Sea and Aleutian Islands (BSAI) directed fisheries for yellowfin sole, 'other' flatfish, and Pacific ocean perch in the month of July, as these vessels have not historically participated in those fisheries. However, in 2008 Amendment 80 was implemented that assigned exclusive harvest privileges for a specific portion to the TAC for BSAI yellowfin sole, flathead sole, rockfish sole, Atka mackerel, and Pacific ocean perch to the non-AFA catcher processors, the primary user group. The remaining TAC for these species was assigned to the BSAI trawl limited access sectors. As a result, any effects of removing the BSAI prohibit will be limited to only those few historical participants in the trawl limited access fisheries.

Included in the Council motion is an option to permit qualifying catcher vessels to participate in the BSAI Pacific cod fishery during the month of July. The intent of this option is to allow rockfish program qualified license holders to participate in their perspective Pacific cod sector allocation in the BSAI. With a sector specific allocation of Pacific cod in the BSAI, any effect from participating rockfish catcher vessel licenses would only impact participants that have the proper endorsements to participate in the BSAI Pacific cod catcher vessel sector allocation. As of November 2009, there were approximately 150 LLP trawl catcher vessel licenses with BSAI endorsement, of which 28 of those licenses were eligible to participate in the CGOA rockfish pilot program. As shown in Table 2-71 and Table 2-72, 26 rockfish eligible catcher vessels have participated in the BSAI Pacific cod fishery during the month of July. Overall, the rockfish eligible catcher vessels reported less than one percent of the retained catch during each of the different qualifying years. Despite the limited catch and the specific sector allocation of BSAI Pacific cod, it is possible that rockfish eligible licenses with a BSAI endorsement could increase their July catch of BSAI Pacific cod if the stand down was removed, thereby negatively impacting other BSAI Pacific cod participants.

⁷⁸ The deep water complex includes sablefish, rockfish, deep water flats, rex sole, and arrowtooth flounder.

Under all catcher vessel alternatives, AFA vessels that are not exempt from AFA GOA groundfish sideboards would be exempt from rockfish program sideboards. The rationale for this exemption is that these vessels are already covered by AFA sideboards for their harvests of Gulf of Alaska and Bering Sea/Aleutian Islands species that would be sideboarded under this program. Of the 53 catcher vessels licenses that are eligible in this program, 25 are qualified for AFA cooperatives. Of these 13 vessels are exempt from the AFA GOA sideboards, and 4 are exempt from the AFA Bering Sea and Aleutian Islands Pacific cod sideboards. Under the CGOA rockfish program proposed alternatives, it is possible that AFA vessels that are exempt from sideboards under the rockfish program could increase their catch in other GOA groundfish fisheries.

Catcher processor alternatives

Under the catcher processor alternatives, intersectoral sideboards will be established to limited license holders eligible for the rockfish program from increasing their effort in other fisheries. Under the alternatives, the Council could limit the sector, in the aggregate, to their historic July catch of Western GOA Pacific ocean perch, northern rockfish, and pelagic shelf rockfish and Western Yakutat Pacific ocean perch and pelagic shelf rockfish. However, recognizing that 11 of the 13 eligible rockfish catcher processors are also qualified Amendment 80 vessels that are already limited by a yearly sideboard for these rockfish species, the Council may elect not to impose an additional sideboard limit for these species during the month of July. The Council could also limit the sector to its historic average halibut mortality in GOA July fisheries that are typically constrained by catch of halibut. To manage the halibut sideboards, the limit would be applied to all fishing within the applicable complex (i.e., deep water and shallow water) Gulf wide. Again, the Council may elect not to impose an additional sideboard limit for halibut PSC during the month of July given that most of the vessels in the sector are already limited to their historic halibut mortality due to an Amendment 80 sideboard. Note that language in the proposed action is written incorrectly given halibut PSC is managed GOA wide and the Council's intent for this option was only to remove the halibut PSC sideboard limits in the GOA July fisheries not the entire 3rd season sideboard limit. The language for the option should read **“for catcher processors, remove halibut PSC sideboard limit for July GOA fisheries.”**

In addition to the general sideboard provisions noted above, catcher processors may also be required to participate in a number of different standdowns. If all vessels in the cooperative develop an adequate monitoring plan that has been approved by NOAA Fisheries and maintain the plan during all fishing in CGOA rockfish sideboard fisheries, cooperative members would be exempt from any standdown in the GOA groundfish fisheries. Again, recognizing that most of the rockfish qualified catcher processors are restricted by Amendment 80 sideboards in the GOA, the Council can choose to not require standdowns from other GOA groundfish fisheries for cooperative members.

Looking at the specifics of the different standdown options, the first would require participants to start fishing in the target rockfish fish fisheries at the same time as the opening of the limited access fishery (in July) and harvest 90 percent of their CGOA rockfish allocation prior to entering any other GOA non-pollock groundfish fishery or standdown for two weeks from the opening of the CGOA rockfish limited access fishery prior to participating in any other GOA non-pollock groundfish fishery. Also cooperative members that lease history to another catcher processor or catcher vessel would be prohibited from operating in any other GOA groundfish fishery from July 1 through July 14 or until 90 percent of the CGOA rockfish allocation on the stacked vessel is harvested provided fishing of the allocation started at the opening of the limited access fishery or later. In addition, each cooperative will be limited in the aggregate for Western GOA and West Yakutat rockfish and flatfish fisheries in the GOA in the month of July, to the historic average total catch of the cooperative members during the month of July during the 1996 to 2002 period. Note that limiting the qualifying years for the cooperative sideboard to 1996 to 2002 could result in a cooperative sideboard greater or less than the overall sector sideboard if the Council

selects other 1996 to 2002 to determine the CGOA rockfish qualification. A more consistent approach would be to have the sideboard calculation years match the qualifying years of the main program.

Catcher processor vessels that elect to fish in the limited access fishery would also be subject to the general sideboard provisions described above. In addition, catcher processor vessels that have in excess of 5 percent of the sector's qualified catch of CGOA POP are prohibited from participating in any Gulf groundfish fishery except CGOA rockfish and sablefish ITQ fisheries from July 1 until 90 percent of the CGOA POP that is allocated to the limited access fishery for the catcher processor sector has been harvested. The Council has also included an option that would not require catcher processors that join the limited access fishery to standdown.

Finally, qualified participants that choose to opt-out of the rockfish program would also be subject to the same general sideboard provisions described above. In addition, opt-out vessels would be prohibited from participating in any directed fishery that the license holder did not participate in during the first week of July in at least two of the seven qualifying years from 1996 to 2002. Again, similar to cooperative members, most rockfish qualified catcher processor participants are already restricted by Amendment 80 sideboards, so the Council can choose to not require participants that opt out of the rockfish program to standdown from other GOA groundfish fisheries.

Looking at the different GOA groundfish fisheries, Table 2-75 shows the reasons for closing of the different July fisheries during the qualifying years. Although management has over time, in general, the rockfish fisheries in the Gulf close because of harvest of the TAC, and the flatfish fisheries in the Gulf close because of halibut PSC bycatch limits.

Table 2-75. Reasons for closures in Gulf of Alaska July groundfish fisheries (1996 -2006)

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Western Gulf	Pacific Ocean perch	TAC	TAC	TAC	TAC	TAC	TAC	TAC	TAC	TAC	TAC	TAC
	Northern rockfish	TAC	TAC	TAC		TAC						
	Pelagic shelf rockfish			TAC		halibut	halibut	halibut	halibut	halibut	halibut	TAC
	Other rockfish		TAC	TAC		bycatch	bycatch	bycatch	bycatch	bycatch	TAC	bycatch
	Shallow water flatfish					halibut						
	Deep water flatfish						halibut	halibut	halibut	halibut	halibut	halibut
	Rex sole					halibut						
	Flathead sole					halibut						
	Arrowtooth flounder					TAC	halibut	halibut	TAC	halibut	halibut	halibut
	Central Gulf	Other rockfish					bycatch	bycatch	bycatch	TAC	TAC	TAC
Shallow water flatfish						halibut						
Deep water flatfish						halibut						
Rex sole						halibut						
Flathead sole						halibut						
Arrowtooth flounder						halibut						
West Yakutat	Pacific Ocean perch	TAC*	TAC*	TAC*	TAC*		TAC	TAC	TAC	TAC	TAC	TAC
	Northern rockfish	bycatch*	TAC*	bycatch*	bycatch*							
	Pelagic shelf rockfish			TAC*		TAC	TAC	TAC	TAC	TAC	TAC	halibut
	Other rockfish		TAC*	TAC*	TAC*	TAC	bycatch	bycatch	bycatch	bycatch	bycatch	bycatch
	Shallow water flatfish					halibut						
	Deep water flatfish					halibut						
	Rex sole					halibut						
	Flathead sole					halibut						
	Arrowtooth flounder					halibut						
Gulfwide	Shallow water complex	halibut	halibut	TAC	halibut							
	Deep water complex	halibut	TAC	halibut	halibut							

* Managed in the Eastern Gulf

As seen in the above table, historically, the rockfish fisheries in the Western GOA and West Yakutat have in general closed due to harvesting of the TAC and have been relatively short seasons given that a substantial amount of effort moves into these fisheries during the traditional July fishing period. Whether additional effort would flow into those fisheries if the CGOA rockfish were rationalized is not known. However, the increase in effort, if any, may be limited, given that few fishing opportunities historically existed in the BSAI during the month of July, so these catcher processor vessels would have had the opportunity to participate in those rockfish fisheries in the past.

Halibut bycatch limits also tend to restrict the harvest of several groundfish species in the GOA. Halibut bycatch limits often constrain harvest of species assigned to the deep and shallow water fishery complexes, developed to manage halibut mortality. If vessels do not have adequate amounts of halibut PSC to cover their groundfish harvests, increases for those species will not occur.

In general, halibut bycatch tends to close fishing for most of the flatfish species, so it is expected that the PSC sideboards would limit harvest of flatfish species more than groundfish catch limits. The species that close as a result of the TAC being harvested are more likely to require groundfish sideboards.

To estimate sideboard amounts, data from the week ending dates show in Table 2-76 were used. These dates were chosen to estimate July harvests as specified by the Council motion. Estimated sideboard limits for 1996 to 2002 are from the rockfish pilot program sideboard limits, which are presented in Table 2-34 and Table 2-79. Table 2-77 and Table 2-78 show estimated sideboards for the catcher processor sector in fisheries that would be limited by catch of the target species using the two remaining qualifying periods.⁷⁹ Sideboards would be based on the sector's retained catch as a percentage of retained catch in a fishery. As shown in the tables below, the higher catch numbers relative to total catch in more recent years yields higher sideboard percentages in the Western GOA and West Yakutat rockfish fisheries. For West Yakutat, the lack of vessel activity in more recent years prevents the publishing of estimated sideboard percentage.

Table 2-76. Week ending dates for data used to generate retained harvest of sideboard species

1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
6-Jul	5-Jul	4-Jul	3-Jul	8-Jul	7-Jul	6-Jul	5-Jul	3-Jul	2-Jul	1-Jul
13-Jul	12-Jul	11-Jul	10-Jul	15-Jul	14-Jul	13-Jul	12-Jul	10-Jul	9-Jul	8-Jul
20-Jul	19-Jul	18-Jul	17-Jul	22-Jul	21-Jul	20-Jul	19-Jul	17-Jul	16-Jul	15-Jul
27-Jul	26-Jul	25-Jul	24-Jul	29-Jul	28-Jul	27-Jul	26-Jul	24-Jul	23-Jul	22-Jul
3-Aug	2-Aug	1-Aug	31-Jul		4-Aug	3-Aug	2-Aug	31-Jul	30-Jul	29-Jul

Table 2-77. Estimated catcher processor sideboard amounts in fisheries limited by target catch for qualifying period 1998 to 2006

Management Area	Species	Number of vessels	Retained catch (mt)	All retained catch (mt)	Percent of retained catch
WG	Northern Rockfish	9	3,003.6	4,488.1	66.9%
	Pacific Ocean Perch	10	8,476.8	15,422.1	55.0%
	Pelagic Shelf Rockfish	9	1,127.8	1,631.8	69.1%
WY	Pacific Ocean Perch	1	*	*	*
	Pelagic Shelf Rockfish	2	*	*	*

Source: WPR and ADF&G Fish Tickets

*Withheld for confidentiality

⁷⁹ "Transfer history" is included in the tables by including both the harvests of the vessel that is currently associated with the LLP license and the vessel that was originally associated with the LLP license, in the case of transferred LLP licenses. The table includes all retained catch by eligible participants regardless of whether the species was targeted.

Table 2-78. Estimated catcher processor sideboard amounts in fisheries limited by target catch for qualifying period 2000 to 2006

Management Area	Species	Number of vessels	Retained catch (mt)	All retained catch (mt)	Percent of retained catch
WG	Northern Rockfish	9	2,975.9	4,007.2	74.3%
	Pacific Ocean Perch	10	6,644.6	13,131.3	50.6%
	Pelagic Shelf Rockfish	10	1,109.7	1,534.5	72.3%
WY	Pacific Ocean Perch	1	*	*	*
	Pelagic Shelf Rockfish	1	*	*	*

Source: WPR and ADF&G Fish Tickets

*Withheld for confidentiality

Included in the Council motion is an option to remove sideboard limits for Western GOA and West Yakutat primary rockfish species. The Council included this option for consideration because of a nearly identical sideboard on most eligible license holders from Amendment 80. Implemented in 2008, the Amendment 80 program allows eligible members of the head and gut (H&G) trawl catcher processor sector to form cooperatives in the BSAI. The increased flexibility associated with cooperative formation enables the participants to change their fishing patterns to give them a competitive advantage over participants in non-rationalized GOA fisheries. To limit Amendment 80 vessels to their historic catch in the GOA from January 1 through December 31, the program included sideboards for GOA pollock, Pacific cod, Pacific ocean perch, northern rockfish, pelagic shelf rockfish, and halibut PSC for Amendment 80 catcher processor vessels.

Amendment 80 GOA sideboard restrictions are based on annual historic usage during the 1998-2004 qualifying period. Specifically, annual retained catch for non-exempt qualified H&G trawl catcher processors by GOA area as a percentage of annual total retained catch of all sectors in that area from 1998 to 2004. Table 2-79 shows the Amendment 80 sideboards for Western GOA and West Yakutat rockfish in addition to the estimated rockfish program sideboards for these same species.

Table 2-79. Estimated GOA rockfish sideboard limits for the rockfish program and Amendment 80 program rockfish sideboard limits

Management Area	Species	Amendment 80 sideboard percentage	Rockfish program sideboard percentages		
			1996-2002**	1998-2006	2000-2006
WG	Northern Rockfish	100.0%	78.9%	66.9%	74.3%
	Pacific Ocean Perch	99.4%	61.1%	55.0%	50.6%
	Pelagic Shelf Rockfish	76.4%	63.3%	69.1%	72.3%
WY	Pacific Ocean Perch	96.1%	76.0%	*	*
	Pelagic Shelf Rockfish	89.6%	72.4%	*	*

Source: WPR and ADF&G Fish Tickets

*Withheld for confidentiality

** The 1996-2002 sideboard percentages are current rockfish pilot program sideboard percentages

One of the obvious differences between the two sideboards is that Amendment 80 sideboards are based on the retained catch of the rockfish species during the **entire year** and the sideboards for the rockfish program are based on retained catch during the **month of July**. Given these calculation difference, it would be expected that the Amendment 80 program sideboard limits would be less restrictive than the rockfish program sideboard limits, which is reflective in the table above. Another difference between the two sideboards is who would be limited by the sideboard. For the rockfish program, the sideboard would restrict the holders of LLP licenses eligible to receive rockfish QS, even if the LLP license holder did not submit an application to participate in the rockfish program. The sideboard would apply both to the fishing vessel itself and to any LLP license derived in whole or in part from the history of that vessel. The

Amendment 80 sideboard restricts Amendment 80 vessels (and license attached to the vessel) that receive quota shares.

If Western GOA and West Yakutat rockfish sideboards are included in the proposed rockfish program, rockfish eligible license holders that are also Amendment 80 qualified would be limited in their catch of Western GOA and West Yakutat rockfish during the month of July by both rockfish program sideboards and Amendment 80 sideboards (as seen in Table 2-79). This duplication of Western GOA and West Yakutat rockfish sideboards from the two programs increases management cost and increases complexity of these sideboarded fisheries. Those most impacted by no Western GOA and West Yakutat rockfish catcher processor sideboards would be Amendment 80 participants that are not qualified for the rockfish program and have historically participated in the Western GOA and West Yakutat fisheries. In general, there have been four or fewer active participants in any given year during the July Western GOA rockfish fisheries in the five years leading up to implementation of the rockfish pilot program. Since implementation of the pilot program, two of these historic participants have not participated in the Western GOA rockfish fisheries, while at the same time two Amendment 80 vessels that are not rockfish program qualified and have not actively participated in these species in the five years leading up to the pilot program started participating in these fisheries. For West Yakutat, there has been only one consistently active catcher processor participant, but that participant is qualified for both Amendment 80 qualified and rockfish program. Since implementation of the rockfish pilot program, an additional vessel that is also both Amendment 80 and rockfish program qualified has participated in the West Yakutat rockfish fishery.

By not including Western GOA and West Yakutat rockfish sideboards in the rockfish program for the catcher processor sector, most, but not all, of the eligible license holders would still be limited to their historic catch of these species during the month of July from Amendment 80 sideboard limits. Three eligible CP license holders in the rockfish program do not qualify for Amendment 80, so these LLP licenses would not be restricted by Amendment 80 sideboard limits if rockfish sideboards are not included in the program.

Although not an indication of the future fishing behavior, historically, these three eligible license holders have very limited catch history in West Yakutat rockfish fisheries and no catch history in Western GOA rockfish fisheries during the month of July. One reason for the limited history in West Yakutat rockfish fisheries is likely due to the small TACs, which corresponds into small sideboard limits for these rockfish species in this area. In all likelihood, the limited catch makes the cost for most eligible license holders prohibitive relative to the revenue, thus it is unlikely any of these eligible license holders would fish in the West Yakutat rockfish fisheries at current TAC levels. In addition, given the West Yakutat fishery is a niche fishery with knowledgeable historical participants, new participants would likely be at clear disadvantage in the fishery, thus making it less likely those few eligible license holders that are not limited by sideboards from entering those fisheries. As for the absence of history in the Western GOA, these licenses lack Western GOA endorsements.

Despite the lack of history in the West Yakutat and Western GOA rockfish fisheries, these eligible licenses could be used to target West Yakutat and Western GOA rockfish during the month of July. To limit these licenses from increasing their effort in Western GOA and West Yakutat rockfish fisheries, the Council could include a sideboard limit for these licenses. Given these eligible licenses have little or no catch history in West Yakutat rockfish fisheries and no history in the Western GOA rockfish fisheries, the simplest approach would be to prohibit these licenses from participating in these fisheries during the month of July. This would simplify management by eliminating the need to publish the annual sideboard limits for these fisheries followed by a closure notice for these sideboard fisheries given there would not be a sufficient amount of catch available for these licenses to conduct a directed fishery.

In summary, the Amendment 80 sideboard limits for Western GOA and West Yakutat rockfish species will likely be sufficient to prevent rockfish program participants from encroaching on other participants in these fisheries by increasing their efforts. Given that Amendment 80 sideboards in these fisheries would likely curtail effort to the same degree as the proposed rockfish program sideboards, the addition of these rockfish program specific sideboards in Western GOA and West Yakutat rockfish fisheries only duplicates management costs and increases the complexity of the sideboard fisheries for managers and fisherman with very little marginal benefit from the additional sideboard limit.

Catcher processors could also be limited in their catch of GOA groundfish by a second sideboard that is intended to constrain harvests from fisheries that are typically halibut constrained. NOAA Fisheries would administer the sideboard on a deep-water complex/shallow-water complex basis. A separate sideboard would be set for each complex.⁸⁰ If, in July, eligible license holders in the rockfish program have caught the sideboard halibut amount within the shallow-water complex, they would be precluded from participating in flathead sole and shallow water flatfish fisheries for the remainder of the month of July, while within the deep-water complex they would be precluded from participating in rex sole, deep water flatfish, and arrowtooth flounder fisheries for the same period. Table 2-80 and Table 2-81 show the halibut usage in fisheries in the Western GOA, Central GOA, and West Yakutat. Notably, halibut usage was generally highest in the rockfish target fisheries in the Central GOA and substantial halibut was taken in the rockfish fishery in Western GOA and West Yakutat. The relatively high incidental catch of halibut in the rockfish fisheries raises the question of why halibut did not constrain the rockfish fisheries during the 1996 to 2006 period. The reason that the rockfish fisheries have not been constrained by halibut is likely that participants typically target rockfish prior to moving on to other fisheries. The non-rockfish fisheries (mostly the flatfish fisheries) are halibut constrained because of their own halibut usage and the reduced halibut remaining after the taking of halibut by the rockfish fisheries.

The current motion would calculate the halibut sideboard based on historic average halibut mortality taken by eligible license holders in the target flatfish fisheries during the month of July and would not include halibut usage in the rockfish fisheries. Since halibut usage in the rockfish fishery is substantial in the Western GOA and West Yakutat rockfish fisheries, the halibut catch by the rockfish fisheries in those areas could be included in determining the deep-water complex limit for those areas. Otherwise, catch of halibut in the rockfish target fisheries is likely to preclude sideboarded vessels from the opportunity to maintain their historic participation in the flatfish fisheries in the deep-water complex that are sideboarded by halibut limits. In the current rockfish pilot program halibut sideboards are based on the percentage of total retained catch of each target species in July by eligible license holders. This percentage is multiplied by the total halibut usage in that target fishery for the month. Halibut to support the Central GOA rockfish program harvests, are allocated under the program, and therefore are not included in the sideboard amounts. **The Council may wish to broaden the language in the motion to include retained catch of each target species rather than just basing the limit on retained catch of target flatfish so as not to preclude participants from their historic participation in flatfish fisheries.**

Applying a halibut sideboard to the deep-water complex (including rockfish in West Yakutat and the Western GOA) raises the question of whether the halibut sideboard should also be applied to the rockfish fisheries in those areas. Since the rockfish fisheries are responsible for substantial halibut catch in those areas and that halibut catch would be included in the sideboard, it could be logically consistent to apply the halibut sideboard to the rockfish fisheries, as well as the flatfish fisheries. The halibut sideboard limit for deep-water complex applies both to rockfish and flatfish fisheries. **To be consistent with rockfish pilot program and if the sideboard calculation is adjusted to account for halibut usage in the**

⁸⁰ The deep-water complex includes sablefish, rockfish, deepwater flatfish, rex sole, and arrowtooth flounder. The shallow-water complex includes flathead sole, shallow water flatfish, pollock, and Pacific cod.

rockfish fisheries, the Council may also wish to adjust the language in the motion to apply the sideboard limit for deep-water complex to also include rockfish fisheries.

Estimated sideboard limits for 1996 to 2002 are from the current rockfish pilot program sideboard limits, which are presented in Table 2-34 and Table 2-79. Table 2-80 and Table 2-81 show July halibut mortality in the Western GOA, Central GOA, and West Yakutat during the qualifying years 1998-2006 and 2000-2006. The tables show substantial halibut mortality in rockfish fisheries and shallow water flatfish, arrowtooth flounder, flathead sole, and rex sole fisheries.

Table 2-80. July halibut mortality in Gulf of Alaska trawl fisheries during the 1998-2006

	Western GOA	Central GOA	West Yakutat
Rockfish	173.9	1,965.0	71.6
Deep Water Flatfish	0.0	*	14.6
Shallow Water Flatfish	13.5	939.8	0.0
Flathead Sole	**	22.9	0.0
Arrowtooth Flounder	164.0	362.0	***
Rex Sole	36.0	103.6	***

Source: NMFS PSC data

*Deep water flatfish included with arrowtooth due to confidentiality concerns

**Flathead sole included with shallow water flatfish due to confidentiality concerns

***Rex sole and arrowtooth flounder included in deep water flatfish due to confidentiality concerns

Table 2-81. July halibut mortality in Gulf of Alaska trawl fisheries during the 2000-2006

	Western GOA	Central GOA	West Yakutat
Rockfish	165.1	1,524.7	26.2
Deep Water Flatfish		0.0	**
Shallow Water Flatfish	13.5	783.1	0.0
Flathead Sole	***	5.3	0.0
Arrowtooth Flounder	160.7	406.1	0.0
Rex Sole	*	*	0.0

Source: NMFS PSC data

*Rex sole included with arrowtooth due confidentiality concerns

**Deep water flatfish and arrowtooth flounder included with rockfish due to confidentiality concerns

***Flathead sole included with shallow water flatfish due to confidentiality concerns

The second step in estimating halibut mortality is to estimate the amount of halibut historically used by catcher processors eligible for the CGOA rockfish program. To estimate the amount of halibut used in a fishery, the percentage of total retained catch of each target species in July by eligible catch processors during the qualifying years was determined. This percentage was multiplied by the average annual halibut usage in that target fishery. Estimates arrived at using this method are shown in Table 2-82 and Table 2-83 Sideboard estimates for 1996-2002 are from the rockfish pilot program and are shown in Table 2-79 and Table 2-84. Sideboard estimates are separated into the deep-water complex and shallow-water complex, with estimates of halibut amounts to support the Western GOA and West Yakutat rockfish fisheries. As noted earlier, halibut to support the Central GOA rockfish harvests are allocated under the program, and therefore are not included in the sideboard amounts.

Table 2-82. Estimated catcher processor July halibut mortality sideboard amounts using 1998-2006 qualifying years

		Number of eligible catcher processors with July catch	July retained catch of eligible catcher processors (mt)	Total retained July catch (mt)	Percent of retained July catch by eligible catcher processors	July halibut mortality sideboard amount (mt)
Central Gulf						
Deep water complex	Arrowtooth flounder	10	4,645	9,836	47.2%	19.0
	Deep water flatfish	4	83	548	15.2%	*
	Rex Sole	10	415	2,308	18.0%	2.1
	Total deep water					21.1
Shallow water complex	Flathead sole	8	126	1,598	7.9%	0.2
	Shallow water flatfish	5	7	8,143	0.1%	0.1
	Total shallow water					0.3
Western Gulf						
Deep water complex	Arrowtooth flounder	10	1,103	5,072	21.8%	4.0
	Deep water flatfish	3	7	10	66.8%	0.0
	Rex Sole	9	414	811	51.0%	2.0
	Rockfish	10	12,609	20,720	60.9%	11.8
	Total deep water					17.8
Shallow water complex	Flathead sole	5	175	291	60.2%	**
	Shallow water flatfish	5	109	152	72.1%	1.1
	Total shallow water					1.1
West Yakutat						
Deep water complex	Arrowtooth flounder	3	93	110	84.9%	***
	Deep water flatfish	2	53	86	61.4%	1.0
	Rex Sole	2	37	65	57.8%	***
	Rockfish	2	8,490	9,264	91.6%	7.3
	Total deep water					8.3
Shallow water complex	Flathead sole	1	3	8	38.1%	0.0
	Shallow water flatfish	0	0	3	0.0%	0.0
	Total shallow water					0.0

Source: NMFS PSC, WPR, and ADF&G Fish Tickets

*Deep water flatfish included with arrowtooth due to confidentiality concerns

**Flathead sole included with shallow water flatfish due to confidentiality concerns

***Rex sole and arrowtooth flounder included in deep water flatfish due to confidentiality concerns

Table 2-83. Estimated catcher processor July halibut mortality sideboard amounts using 2000-2006 qualifying years

		Number of eligible catcher processors with July catch	July retained catch of eligible catcher processors (mt)	Total retained July catch (mt)	Percent of retained July catch by eligible catcher processors	July halibut mortality sideboard amount (mt)
Central Gulf						
Deep water complex	Arrowtooth flounder	10	4,203	8,599	48.9%	28.4
	Deep water flatfish	1	12	298	3.9%	0.0
	Rex Sole	10	281	1,885	14.9%	*
	Total deep water					28.4
Shallow water complex	Flathead sole	8	85	1,240	6.8%	0.1
	Shallow water flatfish	4	1	7,304	0.0%	0.0
	Total shallow water					0.1
Western Gulf						
Deep water complex	Arrowtooth flounder	10	923	4,382	21.1%	4.8
	Deep water flatfish	3	7	8	89.4%	0.0
	Rex Sole	9	411	630	65.2%	*
	Rockfish	10	10,730	18,457	58.1%	13.7
	Total deep water					18.5
Shallow water complex	Flathead sole	5	175	285	61.4%	***
	Shallow water flatfish	5	108	151	72.0%	1.4
	Total shallow water					1.4
West Yakutat						
Deep water complex	Arrowtooth flounder	1	18	22	83.7%	0.0
	Deep water flatfish	0	0	4	0.0%	**
	Rex Sole	0	0	2	0.0%	0.0
	Rockfish	1	7,294	7,667	95.1%	3.6
	Total deep water					3.6
Shallow water complex	Flathead sole	0	0	1	0.0%	0.0
	Shallow water flatfish	0	0	0	0.0%	0.0
	Total shallow water					0.0

Source: NMFS PSC, WPR, and ADF&G Fish Tickets

*Rex sole included with arrowtooth due confidentiality concerns

**Deep water flatfish and arrowtooth flounder included with rockfish due to confidentiality concerns

***Flathead sole included with shallow water flatfish due to confidentiality concerns

Similar to Western GOA and West Yakutat rockfish sideboards, the Council included an option to remove July halibut PSC sideboard limits for the catcher processor sector given that the sector is already limited to their historic GOA halibut PSC usage from the Amendment 80 program. Implemented in 2008, Amendment 80 program includes sideboards for GOA halibut PSC for Amendment 80 vessels in addition to limiting participation in the GOA flatfish fishery to historical participants. GOA halibut PSC sideboards are set based on historic usage of halibut PSC by the Amendment 80 fleet from 1998 to 2004. In addition to halibut PSC sideboard limits, Amendment 80 also limits participation in the GOA flatfish fishery to those Amendment 80 vessels that participated for more than 10 weeks in the GOA flatfish fisheries from 1998 to 2004. Of the 11 Amendment 80 vessels that are permitted to participate in directed GOA flatfish fisheries, seven of these participants are also eligible license holders in the rockfish program. The remaining Amendment 80 vessels that are also eligible license holders in the proposed rockfish program are restricted from directed fishing in GOA flatfish fisheries. The Amendment 80 program also includes an exemption from GOA halibut sideboards if a vessel had fished 80 percent of their weeks in the GOA flatfish fisheries during the 2000 to 2003 period. Exempt vessels would be prohibited from directed fishing for all other sideboarded species in the GOA (rockfish, Pacific cod, and pollock). The Golden Fleece was the only Amendment 80 vessel that qualified for this exemption. The historic catch of Golden Fleece does not contribute to the halibut sideboard limit calculation and the halibut PSC usage of the Golden Fleece does not count towards the halibut sideboard limit.

Differences between the two halibut sideboard limitations are similar to those noted in the general rockfish sideboards. Proposed halibut sideboards from the rockfish program would be based on halibut usage in July, while Amendment 80 halibut sideboards are based on halibut usage throughout the entire year. Table 2-84 shows the rockfish program's estimated halibut PSC sideboard limits for the deep water complex and the shallow water complex for the month of July, in addition to Amendment 80 halibut sideboard limits for both of these complexes by season.

Table 2-84. Estimated halibut PSC sideboard limits for the rockfish program and Amendment 80 program

Fishery Complex	AM-80 3rd season (July 1 - Sept 1) sideboard amount (mt)	Rockfish program sideboard percentages		
		1996-2002 (mt)*	1998-2006 (mt)	2000-2006 (mt)
Shallow water complex	29	11	1.4	1.5
Deep water complex	104	80	47.2	50.5

Source: NMFS PSC, WPR, and ADF&G Fish Tickets

* The 1996-2002 sideboard percentages are current rockfish pilot program sideboard percentages

There are also differences in participation between the two programs that ultimately affect the number of eligible license holders in the sector that would still be sideboarded on their halibut usage through Amendment 80 if halibut limits were not included in the proposed rockfish program. As noted in the above discussion on rockfish sideboards, nearly all of the eligible license holders in the rockfish program are already limited on their halibut usage through the Amendment 80 3rd season halibut sideboard limit. By including July halibut sideboards in the rockfish program, nearly all of the eligible license holders would be limited by both the rockfish program July halibut sideboards and Amendment 80 3rd season halibut sideboard limits. However, absent any halibut sideboard limit from the rockfish program, three license holders would not be limited in their halibut usage. The Golden Fleece is exempt from Amendment 80 GOA halibut sideboards.

Similar to Western GOA and West Yakutat rockfish fisheries, the Council could include a halibut PSC sideboard limit for the three eligible licenses not limited by Amendment 80 sideboard limits. As for the Golden Fleece, a halibut PSC sideboard limit specific to this license and vessel may not be necessary. As

noted above, the Golden Fleece is limited to the GOA flatfish fisheries only. Any halibut mortality from the Golden Fleece does not count against the Amendment 80 3rd season halibut PSC sideboard limit. Given the prohibition on targeting GOA rockfish and other groundfish fisheries, the Golden Fleece is limited in its ability to redistribute its effort to other fisheries in which the vessel has limited or no history. Given this limited ability to negatively impact other fisheries, halibut PSC sideboards for the Golden Fleece are likely not necessary. As for the three licenses that are not limited by Amendment 80 3rd season halibut PSC sideboard limit, the simplest approach would be to prohibit these eligible licenses from participating in deep water and shallow water complex fisheries during the month of July given their extremely limited catch history in these fisheries. This sideboard approach would simplify management by eliminating the need to publish the annual sideboard limits for these fisheries followed by a closure notice for these sideboard fisheries since the sideboard limit would not be a sufficient to conduct a directed fishery.

Overall, the July halibut sideboard limits that are proposed in the rockfish program are also captured in the Amendment 80 3rd season halibut sideboard limit since the sideboard calculation under the two programs are roughly based on the same halibut usage by the eligible license holders during the July period. As a result, including July halibut sideboard limits in the rockfish program would only duplicate sideboard limits thus increasing the cost of managing these limits and increasing the complexity of these limits. As noted above in the discussion on rockfish sideboards, those most impacted by no halibut PSC sideboard would be Amendment 80 participants that are not qualified for the rockfish program and have historically participated in shallow and deep water complex fisheries. In general, there have been four or fewer active participants in the shallow and deep water complex fisheries in any given year during the July period in the five years leading up to implementation of the rockfish pilot program. Participation since implementation of pilot program has shifted away from historical participants to new participants.

The Council also included an option that would prohibit all eligible license holders from participating in shallow water complex fisheries for the month of July. The shallow water complex includes flathead sole, shallow water flats, pollock, and Pacific cod. Relative to historical catch in the deep water complex, catch in the shallow water complex has been minimal for the sector as a whole. As seen in Table 2-84, the halibut PSC sideboard limit for shallow water complex would be 11 metric tons using 1996-2002 qualifying years and slightly over 1 metric tons using the 1998-2006 and 2000-2006 qualifying periods. These low halibut PSC sideboard limits for shallow water complex fisheries is an indication of the level of effort by the catcher processors sector compared to the deep water complex fisheries. Overall, a prohibition on participating in the shallow water complex fisheries during July would likely impact those license holders that tend to target shallow water species in greater proportion to deep water complex fisheries.

Eligible licenses holders that elect to participate in the cooperative program could be limited by a cooperative sideboard and standdowns. Most participants would be expected to opt for a cooperative, under which a cooperative would be limited to its historic catch in sideboarded fisheries. These limitations should be sufficient to prevent participants from encroaching on other fisheries by increasing their efforts. In addition, catcher processors may also be required to participate in a number of different standdowns. However, if all vessels in the cooperative develop an adequate monitoring plan that has been approved by NOAA Fisheries and maintain the plan during all fishing in CGOA rockfish sideboard fisheries, cooperative members would be exempt from any standdown in the GOA groundfish fisheries. Again, recognizing that most of the rockfish qualified catcher processors are restricted by Amendment 80 sideboards in the GOA, the Council can choose to not require standdowns from other GOA groundfish fisheries for cooperative members. Likely impacts from these standdowns would be increased sideboard complexity and increased burden on management from monitoring standdowns. Not including standdowns could impact those Amendment 80 catcher processors that are not rockfish qualified who participate in Western GOA and West Yakutat groundfish fisheries. As noted above, there were

approximately four historical participants that were active in the GOA July groundfish fisheries prior to the rockfish pilot program. Since implementation of the pilot program, few pre-pilot participants have continued in the July GOA groundfish fisheries, while other Amendment 80 qualified vessels have entered the July groundfish fisheries. Given the limited number of participants affected and all but three of the qualified catcher processors would be limited by Amendment 80 sideboards, the standdowns may not be necessary.

Eligible license holders could elect to fish in a limited access fishery, instead of joining a cooperative or opting-out of the program. Participants that choose to enter the limited access fishery that have in excess of 5 percent of the sector's qualified catch of Pacific ocean perch would be required to stand-down in the GOA groundfish fisheries, until 90 percent of the limited entry allocation is harvested. Seven licenses are estimated to have history in excess of the 5 percent threshold using 1996-2002 qualifying period. Five licenses are estimated to have history in excess of the 5 percent threshold using 1998-2006 and 2000-2006 qualifying periods. Participants with less than 5 percent of the Pacific ocean perch qualified history would not be subject to any stand-down requirement. The intent of the stand-down was to prevent eligible license holders with large Pacific ocean perch allocations from using the benefits of the rockfish program to retain their historic catch of CGOA Pacific ocean perch, while also expanding their effort into other groundfish fisheries thereby impacting historical participants in those fisheries.

Since the implementation of the rockfish pilot program, the number of eligible license holders that have elected to participate in the limited access fishery has ranged from four in 2007 to seven in both 2008 and 2009. Of those participants, the number of eligible licenses that have been required to stand-down due to having more than 5 percent of the CGOA Pacific ocean perch qualified history has ranged from 2 in 2007 to 3 in 2008 and 2009. During the July fishery, these eligible license holders have fished their CGOA rockfish allocation during the first two-weeks then moved into other GOA groundfish fisheries. Participants in the limited access fishery have also worked more as a cooperative and less as a limited access fishery. Given the limited access group appears to be working together, removing the stand down for licenses with greater than 5 percent of the CGOA Pacific ocean perch qualified history would potentially allow those license holders to redistribute their effort into other GOA fisheries thereby impacting other rockfish program participants.

In general, the standdown would likely increase the complexity of the program and increase the management burden necessary to monitor individual participants. However, standdowns could be used to limit those rockfish participants with large Pacific ocean perch allocation from impacting Amendment 80 participants that are not rockfish qualified that historically participated in GOA groundfish fisheries during the first two weeks in July. However, as noted above, there were very few historical participants and since implementation of the pilot program in 2007, participation patterns for July GOA groundfish fisheries appears to be shifting away from historical participants to newer participants. Given the limited number of participants affected and all but three of the qualified catcher processors would be limited by Amendment 80 sideboards, the standdowns may not be necessary.

Eligible license holders that opt out of the program would be prevented from fishing in any fishery that the license holder did not participate in the first week of July during at least two of qualifying years. This provision is intended to prevent participants with multiple licenses and substantial history from opting out of the program with one license and entering other fisheries in which the license holder has no history. The history from the "opt out license" would be reallocated within the sector, including to other licenses also held by the holder of the "opt out license". In the rockfish pilot program, the qualifying years are from 1996 to 2002. Under the proposed rockfish action, there are three qualifying years and they are 1996-2002, 1998-2006, and 2000-2006. The current language in the proposed action was inadvertently not updated to reflect the addition of the new qualifying years. Since the addition of the new qualifying years simply adds new qualifying years to the already existing 1996-2002 qualifying years, the analysis

was expanded to include these new qualifying years. The language in the motion should be adjusted to reflect these new qualifying years in the subsequent analysis.

To determine whether an eligible license holder participated in another fishery in the first week of July will require identification of the operative first weeks for each year. Table 2-85 shows the weekend dates from the first two weeks of July in each of the qualifying years. The bolded weekend dates in the table below are those dates that should be used for identifying participation in the first week of July. Because of the choice of eligible license holders to opt-out of the rockfish program is uncertain, no estimation of the extent to which vessels will enter other fisheries under this provision can be provided. In the current rockfish pilot program, the number of eligible license holders that opted-out ranged from 6 in 2007 to 3 in 2008 and 2009. Whether this provision can effectively prevent participants from increasing participation in non-rockfish fisheries to the detriment of other persons eligible for the program cannot be determined with any certainty. The standdown would likely increase the complexity of the program and increase the management burden necessary to monitor individual participants. In addition, the standdown would likely only be protecting a few Amendment 80 participants that are not qualified for rockfish and most catcher processor qualified rockfish participants would be limited by Amendment 80 sideboards, the standdown may not be necessary.

Table 2-85. Rockfish opening dates and weekend dates for federal data (1996-2006)

Year	Opening	1st Weekend date	2nd Weekend date
1996	1-Jul	6-Jul	13-Jul
1997	1-Jul	5-Jul	12-Jul
1998	1-Jul	4-Jul	11-Jul
1999	4-Jul	3-Jul	10-Jul
2000	4-Jul	8-Jul	15-Jul
2001	1-Jul	7-Jul	14-Jul
2002	30-Jun	6-Jul	13-Jul
2003	29-Jun	5-Jul	12-Jul
2004	4-Jul	3-Jul	10-Jul
2005	5-Jul	2-Jul	9-Jul
2006	1-Jul	1-Jul	8-Jul

Bolded dates are to be used for identifying participation in the first week of July for sideboard purposes.

Another possible effect of the rockfish program on other fisheries could arise from the allocation of shorttraker and rougheye to program participants. Whether the portion of the TAC remaining after the allocations to the rockfish fisheries will be adequate to support catch of shorttraker and rougheye in other fisheries is not certain.

2.4.20 Duration and Review

Provisions for program review and duration of shares and the program are contained in two sections of the Council motion. Analysis of these provisions and options are consolidated in this section. Section 15 and 16 of the Council motion contains the following provisions concerning duration and review of the new rockfish management program:

15 Program review

A formal detailed review of the program shall be undertaken 5 years after implementation. The review shall assess:

- 1) the progress of the program in achieving the goals identified in the purpose and need statement and the MSA, and

- 2) whether management, data collection and analysis, and enforcement needs are adequately met. Additional reviews will be conducted every 7 years there after coinciding with the fishery management plan policy review.

16 Duration

Share Duration

The duration of all CGOA rockfish LAPP program permits are 10 years. These permits shall be renewed before their expiration, unless the permit has been revoked, limited, or modified.

Option: Program Duration

Absent Council review and recommendation to extend, the CGOA rockfish LAPP program expires 10 years after implementation.

In the NRC study, “Sharing the Fish” points out that LAPPs that are stable and in which persons are able to make long-term investments will achieve greater benefits. While the MSA provides that LAPPs create a revocable privilege that is not permanent, the creation of long-term interests is argued by some to create a stewardship and conservation interest by giving participants a more direct stake in the condition of the stock.

The Council is considering an option that would sunset the program in 10 years after the date of implementation absent Council review and recommendation to extend the program. By not selecting the option, the program would be indefinite (subject to modification as the Council deems necessary) with reviews set at specific times. Program reviews would be conducted 5 years after implementation and every 7 years there after coinciding with the fishery management plan policy review. Reviews would be designed to attempt to objectively measure the success of the program by addressing issues raised in the amendment’s problem statement and the standards set forth in the MSA, including the impact of action on harvesting and processing sectors, and communities. After reviewing the impacts of the program, the Council would have the option of taking corrective action.

Review of a new program can be important to the program’s success. A review process would allow for a full evaluation of whether the program is serving intended objectives and could provide guidance to the Council for correcting the program to mitigate harmful or unexpected consequences. Early review of a program can be used to determine that the program is functioning as intended. Periodic reviews can be used to determine whether circumstances have changed in a fishery that would justify amending a management program. A well conducted and fully evaluated review often requires extensive staff time, consultants, and Council time. Reviews are important to ensuring the success of management programs but should be undertaken on a schedule such that the need and utility of the information in the review are likely to outweigh the costs.

Including a sunset date in the program could have various impacts on the benefits of the new rockfish program. This sunset is likely to affect the value of the licenses that qualify for the program, as the nature of the fishing privilege associated with the license will be uncertain. This limited duration is likely to affect planning by both sectors, as uncertainties will arise concerning future management of the fishery. In such an environment, it is possible that participants may choose not to invest in improvements that are beneficial in the share-based management of the cooperative alternatives, but less useful under LLP management. Although the proposed sunset would ensure that program participants cannot lay claim to their allocations in perpetuity, the sunset is likely to intensify lobbying efforts in the future, as participants work to maintain their interests. In addition, mandating Council recommendation to extend the CGOA rockfish program would substantially increase Council and staff workloads, as an extension of the

program would require if the Council follow the normal process for amending its FMP. Although some of the work for such an amendment package would be derived from the reviews of the program, substantial administrative and analytical burdens will arise from any action to extend the program. In addition, advancing a comprehensive analytical package of this type through the Council will likely affect the Council's ability to address other needs, including possible amendments to the existing program. For example, minor modifications of the rockfish pilot program have been incorporated into this package, rather than advanced more quickly in a separate package.

Finally, as part of the new rockfish program is a share duration limit of all CGOA rockfish program permits, which would be 10 years. These permits would be renewed before their expiration, unless the permit has been revoked, limited, or modified. NOAA Fisheries would have full discretion in determining which permits would be subject to revocation, limitation, or modification.

2.4.21 Cost Recovery Fee

The Council motion includes a cost recovery fee, not to exceed 3 percent of ex vessel value will be charged to cover the costs of administration of the rockfish program. Section 304(d) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) authorizes and requires the collection of fees for limited access privilege based programs, such as the rockfish program. NOAA Fisheries currently administers several cost recovery fee collection programs in the North Pacific including the halibut/sablefish IFQ cost recovery, BSAI crab cost recovery, and three fishing capacity reduction program loan repayment fees (AFA inshore, BSAI hook and line catcher /processors, and BSAI crab).

The halibut and sablefish IFQ program currently includes a cost recovery component, which was implemented in 2000. The program requires the payment of up to 3 percent of the ex vessel value of all IFQ landings to RAM to defer costs of administering the program. Twenty five percent of the fee collections are required to be used to fund a low interest loan program for IFQ purchases. Payments are made by the IFQ holder and must be made on or before January 31 in the year after the landings. To determine ex-vessel value of the fishery each year, IFQ registered buyers are required to report the total ex-vessel value of landings by October 15th.⁸¹ NOAA Fisheries uses the registered buyer value information to determine a fee percentage for the current fishing year – not to exceed 3 percent. The IFQ permit holders are then sent billings for the percentage calculated for that fishing year, based on standard prices applied to each landing on his/her permit. Persons may pay a lower amount provided they can demonstrate the actual price paid for landings. The fee can be adjusted downward by NOAA Fisheries in the event that recovered fees exceed the management and enforcement costs in the fishery.

For the crab program, a payment of up to 3 percent of the ex vessel value of all IFQ landings is also collected for cost recovery. By statute, fees must be shared equally by the harvesting and processing sectors; by regulation, processors assume the fee liability and remit the fees to the Government. Catcher processors, who catch and process their catch, do not split the fee, but pay the full amount directly to NOAA Fisheries. At the start of each season, NOAA Fisheries publishes a fee percentage in the Federal Register, based on the previous year's ex vessel prices and management and enforcement costs. NOAA Fisheries typically publishes the fee percentage in July or early August, in time for participants in the Aleutian Islands golden king crab fishery to collect fees on their first landing.

Market and stock uncertainties, as well as variation in management costs, mean that the fees may not precisely cover management costs. TAC announcements for the largest fisheries (Bristol Bay red king crab, and Bering Sea *C. opilio*) are not made until after the fee percentage is set. In addition, ex vessel prices will fluctuate with market conditions, so the basis that the fee percentage is applied to will change

⁸¹ The registered buyers report ex-vessel value paid on all pounds landed from October 1 of the prior fishing year through September 30 of the current fishing year.

throughout the season. Fees are due by July 31st (the end of the crab fishing year. NOAA Fisheries cannot assess penalties until at least 30 days after a payment is due. For example, although NOAA Fisheries collected more than the amount required to cover program costs for the 2007-2008 season, the specific amount of fees collected was not fully known prior to the publication of the fee percentage notice for the 2008-2009 season. Because of these uncertainties, a formulaic approach to setting the fee percentage is used. Regulations require that NOAA Fisheries establish the fee percentage based on the prior year's costs and ex vessel values, instead of projections which can be highly subjective.

Although, NOAA Fisheries cannot adjust the fee percentage at the end of a season, regulations require that any debit or credit to the fee collection account must be carried forward and applied toward the fee percentage calculations for future years. Because fee collection for the 2008-2009 season exceeded costs, NOAA Fisheries will have to subtract the remaining balance from the estimated costs, prior to calculating the fee percentage for the 2009-2010 season (effectively reducing the fee percentage for the 2009-2010 season).

For the rockfish program, any participant granted a limited access privilege would be responsible for cost recovery. A limited access privilege is a Federal permit, issued as part of a limited access system under Section 303A of the MSA to harvest a quantity of fish, which represent a portion of the total allowable catch of a fishery that may be received or held for exclusive use by a person. In the case of the rockfish program⁸², QS holders hold a permit that allows that person to join a cooperative and receive an exclusive harvest privilege even if those participants choose not fish in a cooperative. Participants fishing in either the limited access fishery or under a cooperative would be subject to cost recovery fees based on their catch. Those participants that do not fish, (e.g., those participants that opt-out) would not be subject to cost recovery fees because they are not harvesting species that are managed under the program subject to fees. Entry level participants, who do not hold a limited access privilege would not be responsible for cost recovery fees.

Similar to crab program and the halibut and sablefish program, NOAA Fisheries would use average ex vessel value and standard price for the allocated species and management cost for that year to determine the fee. Allocated species would differ by sector. For the catcher processors, allocated species would include the three primary rockfish species and allocated secondary species shortraker, rougheye, and thornyhead. The Council could choose to allocate sablefish to the catcher processor sector, and if so, would also be included in the fee program. For catcher vessels, allocated species would include the primary rockfish species and secondary species thornyheads and potentially sablefish and Pacific cod if the Council selects the option to allocate these species to the sector. The recovery fee would be applied to total catch of allocated species since no discards of allocated species are permitted in the rockfish program.

⁸² Section 3(26) of the MSA

The term 'limited access privilege'--

(A) means a Federal permit, issued as part of a limited access system under section 303A to harvest a quantity of fish expressed by a unit or units representing a portion of the total allowable catch of the fishery that may be received or held for exclusive use by a person; and

(B) includes an individual fishing quota; but

(C) does not include community development quotas as described in section 305(i)."

3 Environmental Assessment

In 2003, the U.S. Congress directed the Secretary of Commerce to establish, in consultation with the North Pacific Fishery Management Council (the Council), a pilot program for management of the Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish fisheries (the target rockfish fisheries) in the CGOA. Following this directive, in 2005, the Council adopted a share-based management program under which the total allowable catch is apportioned as exclusive shares to cooperatives based on the catch history of the members of those cooperatives. Although originally subject to a sunset after 2 years, the 2007 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (the MSA) extended the term of the program to 5 years. Under this extension, the program is scheduled to sunset after the 2011 season. The reauthorization also developed new requirements for share-based management programs, now referred to as Limited Access Privilege Programs (or LAPPs) by the MSA.

After review of the program, at its October 2008 meeting, the Council requested staff to develop a discussion paper addressing certain concerns with the program by stakeholders. On receiving that discussion paper in February 2009, the Council elected to consider a process to develop comprehensive management for the fishery that could include modifications to address shortcomings in the existing program. This comprehensive management program could be implemented at the time the pilot program expires. To begin this process, the Council tasked staff to provide a description of four alternatives that range from taking no action and allowing the program to redesigning elements of the existing program to satisfy concerns expressed by stakeholders. These alternatives specifically include:

1. no action, under which the fishery would revert to management under the License Limitation Program,
2. the current rockfish pilot program,
3. a variation on the existing program with changes to address issues that arise under the new MSA limited access privilege program requirements, and
4. a variation on the existing program with changes to address concerns of various interests.

Following the June 2009 meeting, the Council developed a number of different alternatives for analysis purposes. Given the different characteristics of the catcher vessel fleet and the catcher processor fleet, the Council in June 2009 developed separate, but closely related alternatives for the catcher vessel and catcher processor sectors. In the case of the catcher vessel sector, the Council developed for analysis three new approaches in addition to including the current management structure to provide a wide range of relationships between participating catcher vessels and shore processors. In the case of the catcher processor sector, the Council focused on the current management structure as the alternative for analysis. For the entry level fishery, the Council developed a new alternative in addition to including the current management structure as an alternative for analysis.

This section of the document contains an environmental assessment of the proposed program alternatives and the status quo addressing the requirements for a regulatory impact review of E.O.12866

3.1 Problem Statement

Recognizing the management, economic, safety and conservation gains created by the Rockfish Pilot Program, the Council developed a problem statement defining its purpose for development of a new CGOA rockfish program:

The intent of this action is to retain the conservation, management, safety, and economic gains created by the Rockfish Pilot Program to the extent practicable, while also considering the goals

and limitations of the Magnuson-Stevens Fisheries Conservation and Management Act Limited Access Privilege Program (LAPP) provisions.

The existing CGOA Rockfish Pilot Program (RPP) will sunset after 2011. Consequently, if the management, economic, safety and conservation gains enjoyed under the RPP are to be continued, the Council must act to create a long term CGOA rockfish LAPP. For both the onshore and offshore sectors, the RPP has improved safety at sea, controlled capacity of the fleets, improved NMFS' ability to conserve and manage the species in the program, increased vessel accountability, reduced sea floor contact, allowed full retention of allocated species and reduced halibut bycatch. In addition, the rockfish fishery dependent communities in the CGOA and qualified processors have benefited from stabilization of the work force, more shoreside deliveries of rockfish, additional non-rockfish deliveries with the RPP halibut savings, and increased rockfish quality and diversity of rockfish products. Moreover, the CGOA fishermen and qualified processors have benefited from the removal of processing conflicts with GOA salmon product. The Council needs to resolve identified issues in the management and viability of the entry level fishery.

The design of new program is to replace the short-term demonstration program with a long-term program. Similar to the demonstration program, the fishing fleets have had little experience with cooperative fishery management and thus need to continue the educational process. In addition, all aspects of the economic portfolio of the fishery need to be recognized in order for the fishery to be rationalized. Similar to the current demonstration program, all the historical players – harvesters (both catcher vessels and catcher processors) and processors need to continue to be recognized in a meaningful way. One aspect highlighted in the problem statement is the entry level program. The Council recognizes that the current entry level fishery has some trouble spots that need to be addressed in the new long-term program.

3.2 The Alternatives

To address its problem statement, the Council has adopted, for analysis purposes, alternatives for each of the different sectors. These program alternatives are derived from a common set of elements and options with differences that reflect the different operations of the three sectors. The specific elements and options that define the alternatives follow the description of the alternatives (including the status quo) below.

For the **entry-level sector**, three alternatives have been defined. The first is the no action alternative, under which management would revert to the LLP, under which any holder of an LLP license could enter a vessel in the rockfish fishery. The second alternative is the current entry level management structure under the pilot program. Under this alternative, catcher vessel license holders that do not qualify for participation in catcher vessel program can participate in a derby fishery for 5 percent of the target rockfish TAC. This entry level TAC is divided equally with half available to trawl gear participants and half available to fixed gear participants. The third entry level alternative would provide for only fixed gear entry level fishery.

Two alternatives are defined for the **catcher processor sector**. The first is the no action alternative, under which the fishery would revert to LLP management. The second alternative is the existing pilot program structure, which allocates to the trawl catcher processor sector target rockfish and secondary species (historically harvested in conjunction with target rockfish) and halibut prohibited species catch (PSC) based on the harvest history of sector members. Eligible sector participants could then access exclusive allocations through cooperative membership.

Four alternatives are defined for the **catcher vessel sector**. The first is the no action alternative, under which the fishery would revert to LLP management. The second alternative would establish a cooperative program for catcher vessel sector under which eligible catcher vessels could participate in the fishery only

by joining a cooperative, which would receive an allocation of target rockfish, secondary species, and halibut PSC based on historic catches. The third alternative would divide harvest share allocations of target rockfish, secondary species, and halibut PSC between historic catcher vessel participants and historic processing participants, with allocations within each sector based relative historic participation within that sector. Under the final alternative, a harvester must join a cooperative in association with a processor. The harvester has full discretion in choosing a cooperative both initially and annually thereafter and may change cooperatives (and accompanying processor associations) with forfeiture of harvest quota.

3.3 Affected Environment

This section describes the environment (including the human environment) that would be affected by the proposed action. The section begins with a description of the physical environment of the CGOA rockfish fisheries. The section describes the stocks and biology of the various species that could be affected by the action and provides a brief fishery overview for each species. The section also describes various other species that could be affected by the rockfish fisheries, such as marine mammals and seabirds. The section concludes by very briefly describing the GOA marine ecosystem and the economic and socioeconomic conditions in the human environment that would be affected by the proposed action.

3.3.1 Physical Environment

The Fishery Management Unit (FMU) for the GOA includes all waters in the EEZ along the southeastern, southcentral and southwestern coasts of Alaska from Dixon entrance to Unimak Pass. While depths in this region are as great as 7,000m in the western region near the Aleutian Trench, it is the continental shelf area which is of greatest importance in the context of fishery management. The continental shelf in the GOA is narrowest in southeast Alaska, and broadens to 100-200 km along the southcentral coast. South of Kodiak Island it reaches its broadest point (approximately 200km) at Portlock Bank. Along the Alaska Peninsula and proceeding westward the shelf narrows to 50 km at Unimak Pass.

Circulation in the GOA is dominated by the Alaska Coastal Current (ACC), a fast moving westward trending coastal current. Coastal circulation in the GOA is driven in the winter by anti-clockwise wind stress over the GOA region and in the summer by the freshwater inputs along the coast. To the west of Kodiak Island where freshwater input is reduced, the circulation is driven by prevailing winds.

Along the continental shelf, seasonal variations in water properties are driven by differential wind stress. During the winter, southwesterly winds bring convergence and downwelling (Royer 1981) together with winter cooling and replacement of the warm, high saline bottom waters. During the summer the wind field is reversed resulting in the upwelling of warmer, higher saline nutrient rich waters from the central GOA onto the shelf break.

The GOA FMU is subdivided for management purposes into three regions, Western GOA, Central GOA and Eastern GOA. For purposes of this analysis it is the Central GOA subregion that is of interest. This region includes the regulatory areas of 620 and 630.

3.3.2 Target Rockfish Stocks

The principle target rockfish species for this proposed action are Pacific Ocean Perch, Northern rockfish, and the pelagic shelf rockfish assemblage. Pertinent information on the biology, ecological relationships and fishery information on each species is summarized below.

Pacific Ocean Perch

Pacific ocean perch (*Sebastes alutus*) is a demersal rockfish species with a wide geographic distribution from California to the North Pacific and the Bering Sea to the Kuril Islands (Hanselman et al 2003). They

are a long-lived, slow-growing rockfish species, with maximum age estimated to be in excess of 90 years (Leaman 1991). There is a great deal of uncertainty about the early life history of the species given that larval identification is difficult and infrequent (Gharret et al 2001). Larvae are hypothesized to stay at depth of release for several months then move to shallower waters. Larvae are pelagic and do not become demersal for approximately 2-3 years (Gunderson 1977, Haldorson and Love 1991) Pacific Ocean perch juveniles have some of the slower daily growth rates of all the rockfish species. After recruitment, juveniles settle on hard low-relief sediments while older fish are generally found between 150-350 meters in the summer and deeper in the winter (Love et al. 1991).

Pacific ocean perch abundance is influenced by periodically abundant year classes. Availability of abundant zooplanktonic prey for Pacific Ocean perch larvae or post-larvae may be an important determining factor in year class strength (Hanselman et al 2003). However, there is no information on food habits of larval or post-larval rockfish thus it is difficult to draw a relationship between food availability and year class strength. Some juvenile rockfish in inshore habitat have been found to prey on shrimp, amphipods, other crustaceans, mollusks and some fish (Byerly 2001). Adult Pacific Ocean perch feed primarily on euphausiids which is also a major prey item for walleye pollock, thus changes in walleye pollock population could impact the population of euphausiids and thus impact the Pacific Ocean perch populations as well (Hanselman et al 2003).

Pacific Ocean perch are preyed upon by a variety of other fish at all life stages and to some extent marine mammals as well during late juvenile and adult stages (Hanselman et al 2003). Documented predators include Pacific halibut and sablefish and it is likely that Pacific cod and arrowtooth flounder also prey upon Pacific Ocean perch (NMFS 2004). Pelagic juveniles are consumed by salmon and benthic juveniles are consumed by lingcod and other demersal fish (NMFS 1997). The relative population impact of predators is unknown, although it is presumed predation would have a larger impact at the larval, post-larval and juvenile life stages. Information on these life stages and their related predators however is unknown.

The majority of the historical commercial catch of Pacific Ocean perch has been taken by bottom trawls, although in recent years a portion of the catch has been taken by pelagic trawls. The percentage of the POP Gulfwide catch taken in pelagic trawls increased from 2-8% during 1990-1995 to 14-20% during 1996-1998 (Hanselman et al 2003). In the most recent period from 1999-2002, annual percentages have ranged from 10.3-17% (Hanselman et al 2003).

The Pacific Ocean perch ABC, OFL and TAC are apportioned over the three areas of the GOA (western, central and eastern) based upon a proportional weighting scheme which considers the proportion of biomass in each region as well as the relative variability in survey biomass estimates. The ABC, OFL and TAC and catch for the CGOA Pacific Ocean perch stock from 1996 to 2009 are included in Table 3-1.

Recent data from 1997-2002 (Gaichas and Ianelli summaries of Observer data) indicate that bycatch in the combined rockfish trawl fishery is predominantly arrowtooth flounder, Pacific cod and sablefish. The only non-rockfish fishery catching a major amount of Pacific Ocean perch as bycatch is in the rex sole fishery, averaging 280 metric tons per year, while smaller amounts are taken in the other flatfish, pacific cod and sablefish fisheries (Gaichas and Ianelli summary, in Hanselman et al 2003).

Additional information on the GOA Pacific ocean perch biology and fishery can be found in the Final PSEIS (NMFS 2004) as well as the annual Stock Assessment and Fishery Evaluation reports.

Table 3-1 Overfishing limit, allowable biological catch, total allowable catch, and catch of CGOA Pacific Ocean perch (1996-2009)

Year	Overfishing Level	ABC	TAC	Catch
1996	10,165	3,860	3,333	5,145
1997	19,760	6,690	5,352	6,720
1998	18,090	6,600	6,600	7,452
1999	18,490	6,760	6,760	7,910
2000	15,390	9,240	9,240	8,379
2001	11,350	9,610	9,610	9,249
2002	9,760	8,220	8,220	8,262
2003	10,120	8,510	8,510	8,106
2004	9,960	8,390	8,390	8,446
2005	10,226	8,535	8,535	8,064
2006	8,806	7,418	7,418	8,282
2007	8,922	7,612	7,612	7,280
2008	9,717	8,185	8,185	7,682
2009	9,790	8,246	8,246	

Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications 1996-2009

Northern Rockfish

The northern rockfish, *Sebastes polyspinis*, are a semidemersal long-lived rockfish species. Their distribution ranges from northern British Columbia across the Pacific Rim to eastern Kamchatka and the northern Kurile Islands to the eastern Bering Sea (Allen and Smith 1988). They are most abundant throughout their northerly range in Alaskan waters from the western end of the Aleutian Islands to Portlock Bay in the Central GOA (Clausen and Heifetz 2004). There is little known about the life history of northern rockfish.

While there is limited information on the habitat preference of juvenile northern rockfish, trawl surveys and commercial fishery data have indicated that adult northern rockfish prefer relatively shallow banks on the outer continental shelf at depths between 75-150 m (Clausen and Heifetz 2004). These data also indicate that within this habitat adult northern rockfish have patchy, localized distributions (Clausen and Heifetz 2004). This may be a result of the prey availability of euphausiids. Offshore euphausiids are not directly associated with the bottom but are presumed to be advected onshore near bottom at the upstream ends of underwater canyons (Brodeur 2001). This distribution of prey may help to explain the observed patchy distribution of northern rockfish.

Northern rockfish feed primarily on euphausiids but have also been shown to feed on copepods, hermit crabs and shrimp in smaller quantities (Yang 1993, 1996, Yang and Nelson 2000). Predators of northern rockfish are not well documented. Predators of other rockfish species, such as Pacific halibut, are presumed likely to prey upon northern rockfish. Rockfish in general are preyed upon by a variety of other fish at all life stages and to some degree marine mammals during late juvenile and adult stages. Predator effects are likely to be more important on the earlier life stages of northern rockfish but actual information on these life stages and their relative predators is unknown. The influence of predator-prey relationships on the population dynamics of northern rockfish is likewise unknown.

The majority of the commercial catch of northern rockfish in the fishery is taken with bottom trawl gear in the Central GOA management area, where the majority of the exploitable biomass is concentrated. Most of the catch has been taken during July, as the directed rockfish trawl fishery in the GOA has traditionally opened around July 1. Prior to CGOA rockfish pilot program in 2007, rockfish trawlers usually direct their efforts first toward Pacific ocean perch because of its higher value relative to other rockfish species. After the TAC for Pacific ocean perch has been reached and NMFS closes directed

fishing for this species, trawlers switch and target northern rockfish. With the implementation of CGOA rockfish pilot program, catches have been spread out more throughout the year. The OFL for northern rockfish is Gulfwide over the three management areas. The ABC, OFL and TAC and catch for the CGOA northern stock from 1996 to 2009 are included in Table 3-2.

Based on observer program data from 1990-1998, 80 percent of the catch of northern rockfish came from the directed fishery while 18% came as bycatch in other fisheries (Clausen and Heifetz 2004), and (Courtney et al 2003). Bycatch in the directed northern rockfish fishery was predominantly dusky rockfish, followed distantly by “other slope rockfish”, Pacific Ocean perch, and arrowtooth flounder (Ackley and Heifetz 2001). This study was based on observer program data from 1993-1995 and represents the only detailed study to date of bycatch in the slope rockfish fishery in the GOA. Additional information on the GOA northern rockfish biology and fishery can be found in the Final PSEIS (NMFS 2004) as well as the annual Stock Assessment and Fishery Evaluation reports.

Table 3-2. Overfishing limit, allowable biological catch, total allowable catch, and catch of CGOA northern rockfish (1996-2009)

Year	Overfishing Level*	ABC	TAC	Catch
1996	9,926	4,610	4,610	3,146
1997	9,420	4,150	4,150	2,870
1998	9,420	4,150	4,150	2,967
1999	9,420	4,150	4,150	4,825
2000	7,510	4,490	4,490	2,578
2001	5,780	4,280	4,280	2,588
2002	5,910	4,170	4,170	2,999
2003	6,560	4,640	4,640	4,810
2004	5,790	4,100	4,100	3,711
2005	7,673	3,608	3,608	3,947
2006	6,050	4,283	4,283	3,985
2007	5,890	4,938	4,938	3,076
2008	5,430	2,408	2,408	2,135
2009	5,120	2,302	2,302	

Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications 1996-2009

* OFL is gulfwide over the 3 management areas

Pelagic Shelf Rockfish

The pelagic shelf rockfish are a managed assemblage of mid-water, schooling rockfish which inhabit the continental shelf area of the GOA. The assemblage is comprised of three species: dusky rockfish, *Sebastes ciliatus*, yellowtail rockfish, *S. flavidus*, and widow rockfish, *S. entomelas*. Of these three, dusky rockfish is the most important species Gulfwide in the assemblage while the other two species are minor parts of the assemblage in Alaskan waters. Dusky rockfish has the northernmost distribution of all rockfish species in the Pacific Ocean. While the species range extends from British Columbia north to the Bering Sea and west to Hokkaido Island, Japan, the species appears to be abundant only in the GOA.

There are two distinct species of dusky rockfish in the GOA, a lighter-colored species (light dusky), found in more offshore waters and a darker-colored species found in shallow waters closer inshore (Clausen, et al. 2003). The majority of available data on dusky rockfish from trawl surveys and the commercial fishery are on light dusky rockfish. Currently an annual stock assessment with an age-structured model is being done for light dusky rockfish. In March 2007, the North Pacific Fishery Management Council took final action to remove dark rockfish from both the GOA FMP (PSR Complex) and BSAI FMP (other rockfish complex). Removing the species from the Federal FMP serves to turn full management authority of the

stock over to the State of Alaska in both regions (NMFS 2008). The effective date of these FMP amendments was January 30, 2009.

The stock condition of dusky rockfish is influenced by periodically abundant year classes. As with the other rockfish species, the availability of zooplankton prey may play an important role in year class strength, however there is insufficient information available on food habits to determine this. Euphausiids are important in the diet of adult rockfish thus any change in the abundance of euphausiids based on climatic conditions or predation by other fish species could impact food availability for rockfish.

Pelagic shelf rockfish are caught almost exclusively with bottom trawl gear although some small amounts of reported catch are caught with longline gear. The vast majority of the catch is composed of light dusky rockfish (see table below). Catch of light dusky rockfish occurs in July following the close of the Pacific Ocean perch target fishery. Catches are concentrated on shallow, offshore banks of the continental shelf, specifically the areas west of Yakutat, Portlock Bank northeast of Kodiak Island and around Albatross Bank southeast of Kodiak Island (Clausen et al. 2003). The highest CPUE in the commercial fishery tends to be within the 100-149m depth range (Reuter 1999).

In a recent study on localized depletion of Alaska rockfish, it was found that dusky rockfish were rarely depleted in areas 5,000-10,000 km², except during 1994 in one area know as the “Snakehead” outside Kodiak Island in the GOA. This area was heavily fished for northern rockfish in the 1990s and both fishery and survey catch-per-unit-effort have consistently declined in this area since 1994. In general, however, there is little evidence for localized depletion of dusky rockfish in the GOA. Potential reasons for this may include 1) the local populations may be large enough compared to the existing catch limits that significant depletions do not occur, 2) there is insufficient data for a less targeted species like dusky rockfish to detect real depletions that are happening, or 3) the data selection criteria were aimed at the complex of targeted rockfish. If the fishery concentrates on harvesting Pacific ocean perch until the catch limit is reached, then subsequently targets northern rockfish then dusky rockfish, depletion would be exaggerated for the first target and then underestimated for the final target. (NMFS, 2008)

The ABC and TAC for pelagic shelf rockfish assemblage are apportioned over the three areas of the GOA (western, central, eastern). In the Eastern GOA, West Yakutat and South East Outside are split with separate ABCs and TACs for each region. The OFL for the complex is Gulfwide. The ABC, OFL and TAC for the complex from 1996-2009 are included in Table 3-3.

Bycatch in the directed pelagic shelf rockfish fishery tends to be largely northern rockfish and “other slope” rockfish, with smaller amounts of Pacific Ocean perch (Ackley and Heifetz 2001). Catch data from a different study also showed that dusky rockfish were most commonly associated with northern rockfish, Pacific Ocean perch and harlequin rockfish (Reuter 1999). No information is available on bycatch of pelagic shelf rockfish in the non-rockfish fisheries, however it is presumed to be small (Clausen et al 2003).

Additional information on the GOA pelagic shelf rockfish biology and fishery can be found in the Final PSEIS (NMFS 2004) as well as the annual Stock Assessment and Fishery Evaluation reports.

Table 3-3. Overfishing limit, allowable biological catch, total allowable catch, and catch of CGOA pelagic shelf rockfish (1996-2009)

Year	Overfishing Level*	ABC	TAC	Catch
1996	8,704	3,200	3,200	1,849
1997 (Nearshore)		260	260	199
1997/(Offshore)	8,400	3,320	3,320	1,760
1998	8,040	3,260	3,260	2,477
1999	8,190	3,370	3,370	3,835
2000	9,040	4,080	4,080	3,074
2001	9,040	4,080	4,080	2,436
2002	8,220	3,480	3,480	2,680
2003	8,220	3,480	3,480	2,209
2004	5,570	3,010	3,010	2,158
2005	5,680	3,067	3,067	1,897
2006	6,662	3,262	3,262	1,715
2007	6,458	3,325	3,325	2,479
2008	6,400	3,626	3,626	2,870
2009	6,294	3,566	3,566	

Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications 1996-2009

* OFL is gulfwide over the 3 mangement areas

3.3.3 Allocated Secondary Species Stocks and Prohibited Species Catch

The following section summarizes biological, ecosystem, and fishery information concerning other species that caught incidentally in the CGOA rockfish fisheries, including sablefish, shortraker rockfish, rougheye rockfish, thornyhead rockfish, and Pacific cod.

Sablefish

Sablefish (*Anoploma fimbria*) are distributed from northern Mexico to the GOA, westward to the Aleutian Islands and into the Bering Sea (Wolotira et al 1993). Adult sablefish are found along the continental slope, gullies and deep fjords generally at depths greater than 200m. Sablefish that were observed from a manned submersible were found within 1m of the bottom (Krieger 1997).

Sablefish are assessed as a single population in Federal waters off Alaska because northern sablefish are highly migratory for at least part of their life (Heifetz and Fujioka, 1991; Maloney and Heifetz, 1997; Kimura et al, 1998). Sablefish are managed by discrete regions to distribute exploitation throughout their wide geographical range. There are four management areas in the GOA; Western, Central, West Yakutat, and East Yakutat/Southeast Outside (SEO) and two management areas in the Bering Sea/Aleutian Islands.

Spawning is pelagic at depths of 300 to 500 meters near the edges of the continental slope (McFarlane and Nagata, 1988), with eggs developing at depth and larvae developing near the surface as far offshore as 180 miles (Wing, 1997). Average spawning (date based on otolith analysis) is March 30 (Sigler, et al., 2001). During surveys of the outer continental shelf, most young-of-the-year sablefish are caught in the central and eastern GOA (Sigler et al., 2001). Near the end of the first summer, pelagic juveniles less than 20 cm drift inshore and spend the winter and following summer in inshore waters, reaching 30 to 40 cm by the end of their second summer (Rutecki and Varosi, 1997). After their second summer, they begin moving offshore, typically reaching their adult habitat, the upper continental slope at 4 to 5 years.

Young-of-the-year sablefish prey mostly on euphausiids (Sigler, et al., 2001). Juvenile and adult sablefish are opportunistic feeders. Diet studies have found that three-fourths of stomach content weight is fish, with the remainder invertebrates (Yang and Nelson, 2000). Because of their opportunistic feeding practices, juveniles and adults are unlikely to be affected by availability and abundance of individual prey

species, but overall changes in ecosystem productivity could affect growth and survival rates. The main sablefish predators are adult coho and Chinook salmon, which prey on young-of-the-year.

Water mass movements and temperature appear related to recruitment success (Sigler, et al., 2001). Above average recruitment is somewhat more likely with northerly winter currents and much less likely for years when the drift is southerly. Growth rate of young-of-the-year sablefish is higher in years when they are more abundant.

Fishing effects of the current management regime are either minimal or temporary based on the criteria that sablefish are currently above MSST. Sablefish are substantially dependent on benthic prey, which may be adversely affected by fishing. Little is known about sablefish spawning habitat and the effects of fishing on that habitat. Habitat requirements for growth to maturity are better known, but this knowledge is incomplete. Although sablefish do not appear dependent on physical structure, living structure and coral are substantially reduced in much of the area where sablefish are concentrated.

U.S. and Canadian fishermen have exploited sablefish since the end of the 19th century. The fishery developed as a secondary fishery for participants in the U.S. and Canadian halibut fisheries. The fishery developed off the Washington and British Columbia, spreading north to Alaska in the 1920s. Until the late 1950s, the fishery was exclusively U.S. and Canadian ranging from northern California to the GOA off Kodiak Island (Low, et al., 1976).

In the late 1950s, Japanese longliners entered the sablefish fisheries in the eastern Bering Sea. Japanese fishing quickly expanded to the GOA, where catches peaked at almost 37,000 metric tons in 1972. This heavy fishing led to a substantial population decline and a sharp reduction in catch. Japanese trawlers also caught sablefish incidentally in the Gulf Pacific Ocean perch fishery until 1972, when directed trawl fishing for sablefish developed (Sasaki, 1973).

The U.S. longline fishery began expanding substantially in 1982. By 1988 almost all Gulf sablefish were taken by U.S. fishermen, with the exception of minor harvests by some remaining joint venture participants. The fishery expanded rapidly through the 1980s, prompting the development the IFQ program. IFQ management has increased fishery catch rates and decreased the harvest of immature fish (Sigler and Lundsford, 2001).

In addition to the directed longline fishery, sablefish are caught incidentally in Gulf trawl fisheries, primarily fisheries for rockfish and deep-water flatfish. In addition, five State longline fisheries land sablefish outside of the IFQ program. A switch by some fishermen to pot gear for sablefish in the Bering Sea and Aleutian Islands has been prompted by killer whale depredation of longline catch. Pot gear is not permitted in the GOA.

The longline fishery catches mostly medium and large fish which are typically mature. The trawl fishery, which accounts for a small part of the total catch, occurs along the continental shelf where catches medium and small fish are often made. Catching these fish as juveniles, likely reduces the yield available from each recruit, though the shift is likely small because trawl harvests are a small portion of the total catch.

The ABC and TAC for sablefish are apportioned over the four areas of the GOA: the Western Gulf, the Central Gulf, West Yakutat, and East Yakutat/South East Outside with separate ABCs and TACs for each region. The OFL for sablefish is Gulfwide. The ABC, OFL and TAC for the sablefish from 1996-2009 are included in Table 3-4.

The sablefish quota in the CGOA is allocated 80 percent to hook and line gear and 20 percent to trawl gear. Current MRAs vary by directed basis species. The MRA for pollock, Pacific cod, Atka mackerel, shallow water flatfish, skates, arrowtooth flounder, “other species,” and aggregated amounts of non-groundfish species is 1 percent. Deep water flatfish, rex sole, flathead sole, Pacific Ocean perch, shortraker rockfish, rougheye rockfish, northern rockfish, pelagic shelf rockfish, thornyheads, and other rockfish have an MRA of 7 percent.

Table 3-4 Overfishing limit, allowable biological catch, total allowable catch, and catch of CGOA pelagic shelf rockfish (1996-2009)

Year	Gear	Overfishing Level (mt) (Gulfwide)	ABC (mt)	TAC (mt)	Catch (mt)
1996	Hook & Line	22,800	6,900	5,520	5,122
	Trawl			1,380	1,650
1997	Hook & Line	39,950	6,410	5,128	4,935
	Trawl			1,282	1,302
1998	Hook & Line	23,450	6,320	5,056	4,674
	Trawl			1,264	1,245
1999	Hook & Line	19,720	5,590	4,472	4,557
	Trawl			1,118	1,316
2000	Hook & Line	16,600	5,730	4,584	4,786
	Trawl			1,146	1,386
2001	Hook & Line	15,720	54,101	4,328	4,434
	Trawl			1,082	1,084
2002	Hook & Line	19,350	5,430	4,344	4,611
	Trawl			1,086	1,569
2003	Hook & Line	20,020	6,440	5,152	5,661
	Trawl			1,288	1,429
2004	Hook & Line	22,160	7,300	5,840	6,096
	Trawl			1,460	989
2005	Hook & Line	15,940	7,250	5,800	5,672
	Trawl			1,450	1,015
2006	Hook & Line	14,840	6,370	5,096	5,186
	Trawl			1,274	844
2007	Hook & Line	14,239	6,190	4,952	4,793
	Trawl			1,238	392
2008	Hook & Line	15,040	5,500	4,400	4,660
	Trawl			1,100	633
2009*	Hook & Line	11,160	4,990	3,992	3,529
	Trawl			998	256

Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications 1996-2009

* 2009 catch was as of July 6, 2009

Shortraker/Rougheye Rockfish

As with most other rockfish, shortraker rockfish (*Sebastes borealis*) and rougheye rockfish (*Sebastes aleutianus*) are slow growing and long-lived. They inhabit waters of the outer continental shelf and continental slope. Shortraker are consistently most abundant in the Yakutat area. Rougheye are typically most abundant in the Southeastern area. Estimates of maximum age of shortraker rockfish is 120 years, while estimates of maximum age of rougheye rockfish range from 90 years to 140 years.

As with other slope rockfish, shortraker and rougheye appear to be influenced by periodic abundant year classes. Availability of suitable zooplankton prey in sufficient quantity for larval and post-larval rockfish

may be an important determining factor of year class strength. Information is unavailable to further assess this relationship. Adult shortraker and rougheye are thought to opportunistically feed on mollusks and fish. Little is known about the abundance trends of rockfish prey items. Rockfish are preyed on by a variety of other fish at all life stages, and to some extent marine mammals during late juvenile and adult stages. Whether any particular predator has a significant or dominant effect is unknown. Predators also affect larval, post-larval, and small juvenile fish, but these effects are unknown.

Shortraker and rougheye rockfish have traditionally been combined for management purposes. Prior to 2004 there was no requirement to report catches of these two species separately and fishermen and processors could report shortraker, rougheye or shortraker/rougheye catch. In 2004, shortraker rockfish and rougheye rockfish were divided into separate subgroups. These subgroups were established to protect these species from possible overfishing. Although TACs of the two species are separated, in most fisheries they remain subject to an “aggregate rockfish” MRA that limits retained catch to 5 percent or 15 percent of catch of species for which directed fishing is permitted. Under this rule, ‘aggregate rockfish’ catch includes catch of all *Sebastes* and *Sebastes* excluding black rockfish and blue rockfish.

In 2007, the CGOA Rockfish Pilot Program was implemented. To avoid possible overharvest of shortraker and rougheye rockfish by program participants, the Council elected to use more precise and limiting management in the rockfish pilot program. Catcher processor cooperatives are limited by constraining allocations with no discards permitted.⁸³ Catcher processors in the limited access fishery and all catcher vessels are limited by a 2 percent MRA, applicable to shortraker and rougheye in the aggregate. This more species specific reduced MRA is intended to limit any potential incentive to ‘top off’ on these two species.

The ABC and TAC for shortraker and rougheye are apportioned by each of the three GOA areas, while the OFL is managed Gulfwide. The relative proportions by areas are calculated based on comparison with the three most recent trawl survey results (2003, 2005, and 2007). The ABC, OFL and TAC for the complex from 1996-2009 are included in Table 3-5.

⁸³ The allocations of shortraker and rougheye to the catcher processor sector are based on specific percentages of the TAC selected by the Council determined after considering historic catches by catcher processors in the rockfish fishery (i.e., 30.03 percent of the Central Gulf shortraker TAC and 58.87 percent of the Central Gulf rougheye TAC). Each catcher processor cooperative receives a percentage of each of those allocations equal to its percentage of the sector’s primary rockfish species quota shares.

Table 3-5. Overfishing limit, allowable biological catch, total allowable catch, and catch of CGOA shortraker/rougheye rockfish (1996-2009)

Year	Species*	Overfishing			
		Level (mt) (Gulfwide)	ABC (mt)	TAC (mt)	Catch (mt)
1996	Shortraker/rougheye	2,925	1,210	1,210	941
1997	Shortraker/rougheye	2,740	970	970	931
1998	Shortraker/rougheye	2,740	970	970	868
1999	Shortraker/rougheye	2,740	970	970	580
2000	Shortraker/rougheye	2,510	930	930	887
2001	Shortraker/rougheye	2,510	930	930	998
2002	Shortraker/rougheye	2,340	840	840	631
2003	Shortraker/rougheye	2,340	840	840	949
2004	Shortraker/rougheye	2,510	656	656	343
1999	Shortraker/rougheye	2,740	970	970	580
2000	Shortraker/rougheye	2,510	930	930	887
2001	Shortraker/rougheye	2,510	930	930	998
2002	Shortraker/rougheye	2,340	840	840	631
2003	Shortraker/rougheye	2,340	840	840	949
2004	Shortraker/rougheye	2,510	656	656	343
2005	Shortraker	982	324	324	223
	Rougheye	1,531	557	557	121
2006	Shortraker	1,124	353	353	302
	Rougheye	1,180	608	608	134
2007	Shortraker	1,124	353	353	158
	Rougheye	1,148	611	611	181
2008	Shortraker	1,197	315	315	248
	Rougheye	1,548	834	834	191
2009	Shortraker	1,197	315	315	199
	Rougheye	1,545	833	833	100

Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications 1996-2009

*Starting 2005, shortraker and rougheye were managed separately

Thornyhead Rockfish

Thornyhead rockfish are long-lived, slow-growing high value rockfish species in Alaskan waters. The shortspine thornyheads, *Sebatolobus alaskanus*, are abundant in the GOA and are of commercial importance as a high value rockfish species. Longspine thornyheads, *S. altivelis*, as well as another thornyhead species common off Japan, *S. macrochir*, are infrequently encountered in the GOA, thus annual assessments focus upon the shortspine thornyhead.

Shortspine thornyheads are a demersal species found in deep waters from 92m to 1460 m with a geographic distribution extending from the Bering Sea and GOA to Baja California (Gaichas and Ianelli 2003). Thornyhead life history is not well known. The maximum recorded age is in excess of 50 years (NMFS 2004). Shrimp had been noted to be the most important food in the thornyhead diet (Yang 1993, 1996 and Yang and Nelson 2000, In, NMFS 2004) Other important prey items include Tanner crabs, Pollock, capelin, sculpins, polychaetes, mysids, amphipods and other crabs (Yang 1993, 1996 and Yang and Nelson 2000, In, NMFS 2004). California sea lion (Lowry et al 1990) and sablefish (Orlov 1997) are documented predators of shortspine thornyheads.

Shortspine thornyhead rockfish are caught with both trawl and hook and line gear. In the past, this species was seldom the target of a directed fishery. Today thornyheads are one of the most valuable of the

rockfish species, with most of the domestic harvest exported to Japan. Thornyheads are nearly always taken in fisheries directed at sablefish and other rockfish. The incidental catch of shortspine thornyheads in these fisheries has been sufficient to capture a substantial portion of the thornyhead quota established in recent years, so directed fishing on shortspine thornyheads exclusively is not permitted.

In 2007, the CGOA Rockfish Pilot Program was implemented to enhance resource conservation and improve economic efficiency for harvesters and processors who participate in the CGOA rockfish fishery. Thornyhead rockfish are a secondary species that has an allocation of quota share which can be caught while fishing for the primary management groups.

The ABC and TAC for thornyheads are apportioned by each of the three GOA areas while the OFL is managed Gulfwide. The ABC, OFL and TAC for the complex from 1996-2009 are included in Table 3-6.

Additional information on thornyhead rockfish biology and fishery can be found in the Final PSEIS (NMFS 2004 as well as the annual Stock Assessment and Fishery Evaluation reports.

Table 3-6. Overfishing limit, allowable biological catch, total allowable catch, and catch of CGOA thornyhead (1996-2009)

Year	Overfishing Level (mt) (Gulfwide)	ABC (mt)	TAC (mt)	Catch (mt)
1996 (Gulfwide)	2,200	1,560	1,248	1,132
1997 (Gulfwide)	2,400	1,700	1,700	1,240
1998	2,840	710	710	716
1999	2,800	700	700	583
2000	2,820	990	990	551
2001	2,770	970	970	523
2002	2,330	840	840	505
2003	3,050	840	840	745
2004	2,590	1,940	1,940	405
2005	2,590	1,010	1,010	390
2006	2,945	989	989	400
2007	2,945	989	989	196
2008	2,540	860	860	302
2009	2,540	860	860	

Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications 1996-2009

Pacific Cod

Pacific cod (*Gadus macrocephalus*), also known as grey cod, are moderately fast-growing and short-lived fish. Females reach 50 percent maturity of about 67 cm, at an age of 6.7 years and are highly fecund. Annual natural mortality of adults is estimated to be 0.37. Cod are demersal fish and in the winter and spring concentrate on the shelf edge and upper slope at depths of approximately 100 to 200 meters. They spawn from January through April, then move to shallower waters (less than 100 meters) in the summer. Cod recruit to trawl fisheries at approximately 3 years, but are not fully recruited to all fisheries until 7 years.

Pacific cod is a transoceanic species, occurring at depths from shoreline to 500 meters. The southern limit of the species distribution is about 34 N latitude, with a northern limit of about 63 N latitude. Pacific cod is distributed widely over the GOA, as well as the Eastern Bering Sea and Aleutian Islands area. Tagging studies have demonstrated significant migration both within and between the eastern Bering Sea, Aleutian Islands, and GOA. Genetic studies have failed to show significant evidence of stock structure within these

areas. Pacific cod is not known to exhibit any special life history characteristics that require it to be assessed or managed differently from other groundfish stocks in the GOA.

A primary ecosystem phenomenon affecting Pacific cod seems to be the periodic occurrence of “regime shifts” (Livingston, ed. 2002). Additional study of the relationship between ecology of Pacific cod and these regime changes is necessary to fully understand the implications of these changes. Major trends in predators and prey can be expected to affect Pacific cod dynamics. Small Pacific cod feed mostly on invertebrates, while large Pacific cod are mainly piscivorous. Predators for Pacific cod include halibut, salmon shark, northern fur seals, Steller sea lions, harbor porpoises, various whale species, and tufted puffin.

Potentially, fisheries for Pacific cod can have effects on other species in the ecosystem through a variety of means. Pitcher (1981) showed that Pacific cod is important winter prey for Steller sea lions. Sinclair and Zeppelin (2002) reinforced this finding, showing that Pacific cod was one of the four most important prey items of Steller sea lions, based on frequency of occurrence averaged over years, seasons, and sites, and was particularly important in winter. Size ranges of Pacific cod harvested commercially overlap with those consumed by sea lions, and to some extent commercial fisheries share geographic regions with sea lions (Livingston, ed., 2002).

Prior to adoption of the MSA in 1976, the Pacific cod fishery was relatively small, averaging approximately 3,000 metric tons per year in the two previous decades. In the late 1970s the fishery grew, mostly through foreign participation, which peaked in 1981 with a catch of almost 35,000 metric tons. The domestic fishery grew slowly through the early 1980s, and then jumped sharply in 1987 to approximately 31,000 metric tons, as the foreign fishery was eliminated. The current fishery is prosecuted by three gear types: trawl gear, hook and line gear, and pot gear. Traditionally trawl gear has taken the largest share of the catch, although in the last two years, pot gear has accounted for the largest share.

The ABC and TAC for Pacific cod are apportioned by each of the three GOA areas (Western Gulf, Central Gulf, Eastern Gulf), while the OFL is managed Gulfwide. In addition, Pacific cod is allocated between processor components (inshore/offshore) and season. Ninety percent of the TAC is allocated to the inshore component and 10 percent to the offshore component. The Central Gulf allocation is further allocated at 60 percent of each component’s quota to the A season (January 1 to June 10), while the remainder is allocated to the B season (June 11 to December 31). Directed fishing in the B season opens September 1. Historically, the majority of the Gulf catch of cod has come from the Central Gulf. This distribution of effort has resulted, to some extent, from catch limits established for the different areas. Area specific allocations have varied with estimates of the distribution of biomass and management responses to local concerns. The ABC, OFL and TAC for Pacific cod from 1996-2009 are included in Table 3-7.

Table 3-7. Overfishing limit, allowable biological catch, total allowable catch, and catch of CGOA Pacific cod (1996-2009)

Year	Gear	Overfishing Level (mt) (Gulfwide)	ABC (mt)	TAC (mt)	Catch (mt)
1996	Inshore	88,000	42,900	38,610	42,213
	Offshore			4,290	5,351
1997	Inshore	180,000	51,400	42,321	43,406
	Offshore			1,369	271
1998	Inshore	141,000	49,080	37,548	38,031
	Offshore			4,172	3,405
1999	Inshore	134,000	53,170	38,642	40,928
	Offshore			4,293	3,619
2000	Inshore	102,000	43,550	30,672	30,257
	Offshore			3,408	1,928
2001	Inshore	91,200	38,650	27,225	25,255
	Offshore			3,025	2,066
2002	Inshore	77,100	31,680	22,311	22,665
	Offshore			2,479	2,393
2003	Inshore	70,100	29,000	20,421	22,584
	Offshore			2,269	2,159
2004	Inshore	102,000	35,800	27,116	25,419
	Offshore			2,712	1,931
2005	Inshore	86,200	33,117	22,577	22,344
	Offshore			2,509	361
2006	Inshore	95,500	37,873	25,565	21,627
	Offshore			2,840	1,402
2007	Inshore	97,600	37,873	25,565	24,860
	Offshore			2,840	1,138
2008	Inshore	88,660	37,901	25,583	26,565
	Offshore			2,843	1,262
2009*	Inshore	66,600	31,521	21,277	14,847
	Offshore			2,364	1,322

Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications 1996-2009

* 2009 catch was as of July 6, 2009

Halibut

Pacific halibut (*Hippoglossus stenolepis*) range from the Eastern Bering Sea to Oregon, with the center of abundance in the GOA. Spawning takes place in the winter months from December to February, mostly off the edge of the continental shelf at depths of 400 to 600 meters. Male halibut become sexually mature at 7 or 8 years of age; females become sexually mature at 8 to 12 years. In the 1970s, 10-year old males averaged 9.1 kilograms, and females averaged 16.8 kilograms. Males can grow to approximately 35 kilograms and live up to approximately 30 years; females can grow to over 225 kilograms and live up to approximately 40 years. Females can produce up to 3 million eggs annually. Fertilized eggs float free for about 15 days before hatching. Larvae drift free for up to 6 months and can be carried great distances to shallow waters by prevailing currents. Most young halibut spend 5 to 7 years in shallow waters. At about 35 centimeters, these fish begin life as bottom dwellers. Up to age 10, halibut in the Gulf are highly migratory, generally migrating clockwise throughout the Gulf. Older halibut are much less migratory. Halibut prey on variety of fish, crab, and shrimp, at times leaving the bottom to feed on fish, such as herring and sand lance.

The catch of halibut in directed fisheries is managed under a treaty between the U.S. and Canada, through the International Pacific Halibut Commission. Pacific halibut are considered a single interrelated stock, but are regulated by quotas at the subarea level. Both commercial and recreational fisheries date back to the 1800s.

Currently, regulations limit catch of halibut as PSC. NOAA Fisheries annual sets PSC limits under 50 CFR 679.21 through the annual TAC-setting process. Halibut PSC limits are apportioned by gear group, fishery categories, and season to create more refined PSC limits.

Table 3-8 and Table 3-9 show the halibut PSC limits by gear, seasons, and fisheries. The purpose of the seasonal apportionment is to maximize the ability of the fleet to harvest the available groundfish TAC and to minimize halibut PSC. NOAA fisheries will base any seasonal apportionment of the halibut PSC on 1) seasonal distribution of halibut, 2) seasonal distribution of target groundfish species, 3) PSC bycatch needs on a seasonal basis, 4) expected variations in bycatch rates throughout the fishing year, 5) expected changes in directed groundfish fishing season, 6) expected start of fishing effort, and 7) economic effects of establishing seasonal halibut allocations on segments of the target groundfish industry.

For the GOA trawl fisheries, the halibut PSC limit is 2,000 metric tons. The 2,000 metric tons are then apportioned among seasons (currently five⁸⁴) and fishery complexes (shallow water and deep water species) through the annual specification process. The shallow water fishery complex includes pollock, Pacific cod, flathead sole, Atka mackerel, and “other species.” The deep water complex includes all rockfish species, rex sole, deep water flatfish, sablefish, and arrowtooth flounder. There is no apportionment between shallow-water and deep-water fishery complexes during the 5th season.

Unused seasonal apportionment of halibut PSC will be added to the respective seasonal apportionment for the next season during the current fishing year. If a seasonal apportionment of halibut PSC is exceeded, that amount of halibut limit will be deducted from the next season’s apportionment during the current fishing year. Unused halibut PSC that has been allocated to a rockfish cooperative is added to the last seasonal apportionment for trawl gear after November 15 or after the effective date of a declaration to terminate fishing by the rockfish cooperative during that fishing year.

If, during the fishing year, NOAA Fisheries determines the trawl vessels will catch the halibut PSC limit for that fishery category, NOAA Fisheries will close the entire GOA or regulatory area to directed fishing with trawl gear for that species complex.⁸⁵ NOAA Fisheries currently apportions 800 metric tons of halibut PSC to the deep-water complex. This apportionment is split among the five seasons, with the third season (starting in July, when the rockfish fisheries open) being apportioned 400 metric tons.

Prior to implementation of the rockfish program, if the halibut mortality limit was reached prior to catch of the rockfish TAC, the rockfish fisheries were closed for the season and reopened when the next apportionment came available in September. Since implementation of the pilot program, cooperatives receive exclusive allocations of halibut PSC from the third quarter deep water apportionment that constrain their fishing activity. Participants in the limited access fishery (who elected not to join a cooperative) are subject to the same limitation as participants in the rockfish fisheries prior to the pilot program. In other words, if the third season halibut PSC apportionment is fully used prior to harvest of the applicable limited access rockfish TAC, that fishery will be closed until the next season’s apportionment comes available in September.

⁸⁴ Season 1: January 20 – April 1; Season 2: April 1 – July 1; Season 3: July 1- September 1; Season 4: September 1 – October 1; Season 5: October 1 – December 31.

⁸⁵ Trawl vessels fishing for pollock with pelagic gear may continue despite closure of shallow-water fisheries.

Table 3-8. Final 2009 and 2010 Pacific halibut PSC limits, allowances, and apportionments (all values are in metric tons)

Trawl gear		Hook-and-line gear ¹			
Season	Amount	Other than DSR		DSR	
		Season	Amount	Season	Amount
January 20–April 1	550 (27.5%)	January 1–June 10	250 (86%)	January 1–December 31	10 (100%)
April 1–July 1	400 (20%)	June 10–September 1	5 (2%)	.....	.....
July 1–September 1	600 (30%)	September 1–December 31	35 (12%)	.....	.....
September 1–October 1 ..	150 (7.5%)	n/a	n/a	.....	.....
October 1–December 31	300 (15%)	n/a	n/a	.....	.....
Total	2,000 (100%)	n/a	290 (100%)	.....	10 (100%)

¹ The Pacific halibut PSC limit for hook-and-line gear is allocated to the demersal shelf rockfish (DSR) fishery and fisheries other than DSR. The hook-and-line sablefish fishery is exempt from halibut PSC limits.

Table 3-9. Final 2009 and 2010 apportionment of Pacific halibut PSC trawl limits between the trawl gear deep-water species complex and the shallow-water species complex (values are in metric tons)

Season	Shallow-water species complex	Deep-water species complex ¹	Total
January 20–April 1	450	100	550
April 1–July 1	100	300	400
July 1–September 1	200	400	600
September 1–October 1	150	Any remainder	150
Subtotal January 20–October 1	900	800	1,700
October 1–December 31 ²	n/a	n/a	300
Total	n/a	n/a	2,000

¹ Vessels participating in cooperatives in the Central Gulf of Alaska Rockfish Pilot Program will receive a portion of the third season (July 1–September 1) deep-water category halibut PSC apportionment. At this time, this amount is unknown but will be posted later on the Alaska Region Web site at <http://www.alaskafisheries.noaa.gov> when it becomes available.

² There is no apportionment between shallow-water and deep-water fishery complexes during the 5th season (October 1–December 31).

Estimated annual halibut catch and mortality for catcher processors and catcher vessels in the CGOA rockfish fisheries from 1996 to 2006 are provided in Table 3-10.

Table 3-10. Halibut mortality of trawl vessels in the Central Gulf directed rockfish fishery (1996-2006)

Year	Catcher processors			Catcher vessels		
	Halibut PSC mortality (pounds)	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish retained catch	Halibut PSC mortality (pounds)	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish retained catch
1996	117,064.3	4,456.4	26.3	204,983.7	3,445.9	59.5
1997	328,198.8	5,899.6	55.6	109,215.9	3,297.9	33.1
1998	322,643.2	6,680.7	48.3	191,447.5	5,156.5	37.1
1999	372,511.3	8,532.4	43.7	274,097.9	5,877.8	46.6
2000	105,732.6	4,591.2	23.0	300,861.8	8,577.5	35.1
2001	243,916.9	6,301.8	38.7	454,742.8	6,656.4	68.3
2002	244,909.0	4,782.1	51.2	209,657.5	8,051.9	26.0
2003	144,423.1	4,148.7	34.8	340,930.7	9,728.1	35.0
2004	107,653.0	4,977.7	21.6	474,015.4	8,548.7	55.4
2005	150,053.8	5,506.0	27.3	306,010.6	7,445.8	41.1
2006	127,343.3	5,558.0	22.9	165,482.1	6,839.4	24.2

Source: CP data from Catch Accounting/Blend and CV data from ADF&G Fish Tickets

In 2007, the CGOA Rockfish Pilot Program was implemented. The intention of the program is to enhance resource conservation and improve economic efficiency for harvesters and processors who participate in the program. Under the pilot program, allocations of the primary rockfish (Pacific ocean perch, Northern Rockfish, and Pelagic rockfish) and important incidental catch species (i.e., sablefish, Pacific cod, shorttraker and rougheye rockfish, and thornyhead rockfish) are divided between the catcher vessel sector and the catcher processor sector. In addition, each sector is also allocated halibut PSC based on historic catch of halibut in the target rockfish fisheries. Under the program, participants in each sector can either fish as part of a cooperative or in a competitive, limited access fishery. As seen from Table 3-11, annual

halibut catch and mortality in the CGOA rockfish fishery has declined since the implementation of the pilot program in 2007 and 2008.

In the years leading up to the pilot program, vessels in the rockfish fishery averaged in excess of 20 pounds of halibut mortality for each metric ton of primary rockfish species. In the first two years of the program, vessels fishing in cooperatives and the limited access fishery under the program cut halibut mortality rates substantially. Vessels in the catcher processor limited access fishery reduced their catch to approximately 13 pounds of halibut per ton of primary rockfish catch in 2007, while in 2008 the halibut mortality rate was 16.5 pounds per ton of primary rockfish catch.⁸⁶ For catcher processor cooperative, the single vessel fishing in 2007 reduced its halibut mortality to less than 9 pounds of halibut per metric ton of primary rockfish catch, while the two participating vessels in 2008 had a halibut mortality of 10.5 percent. The catcher vessel sector reduced its halibut mortality to slightly more than 4 pounds of halibut per ton of primary rockfish species catch in 2007, while the halibut mortality in 2008 for this sector was roughly 8 pounds per metric ton of primary rockfish.⁸⁷

Table 3-11 Halibut mortality of vessels in the Central Gulf rockfish pilot program (2007 and 2008)

Year	Fishery	Vessels	Halibut PSC mortality (pounds)**	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish catch	Allocation including transfer of halibut PSC mortality (pounds)	Unused allocation (pounds)
2007	Catcher processor limited access	3	26,312.8	2,063.3	12.8	NA	NA
	Catcher processor cooperative*	1	16,623.3	1,933.1	8.6	77,760.7	61,137.3
	Catcher vessel cooperative	25	32,710.1	7,746.0	4.2	309,816.8	277,106.7
	Total	29	75,646.3	11,742.4	6.4	387,577***	338,244+
2008	Catcher processor limited access	4	47,624.4	2,892.1	16.5	NA	NA
	Catcher processor cooperative*	2	19,332.0	1,836.4	10.5	44,092.0	24,760.0
	Catcher vessel cooperative	23	60,622.0	7,446.7	8.1	331,906.9	271,284.9
	Total	29	127,578.4	12,175.2	10.5	375,998.9***	296,044.9+

Source: NMFS Catch Accounting Data

*Data are not confidential because of disclosure in cooperative reports.

** Includes all halibut mortality under the primary program (i.e., excludes entry level fishery).

*** Includes allocation to catcher processor cooperative that did not fish. No allocation is made to the limited access fishery.

+ Includes all allocations and only catches by vessels subject to those allocations.

The drastic reduction in halibut mortality (particularly in the catcher vessel sector) likely arises from several factors. First, vessels have exclusive allocations, allowing them to move from areas of high halibut catch without risking loss of catch of the primary rockfish. Second, exclusive allocations also increase the incentive for participants to communicate with each other concerning catch rates, improving information concerning areas of high halibut incidental catch in the fleet, and preventing repeated high halibut mortality among vessels exploring fishing grounds. Third, several vessels have begun employing new pelagic gear that limits bottom contact and halibut incidental catch. These gear changes are apparent when comparing the percentage of catch using pelagic trawl gear and non-pelagic gear in the first two years of the program with catch by those gear types in the preceding years (see Table 3-12). In the second year of the program over 40 percent of primary rockfish catch was with pelagic trawl, in comparison to less than 25 percent in 2006 and 6 percent or less in the preceding years. In the second year of the program, nearly 85 percent of the catcher vessel fleet used pelagic gear for some of its catch, in comparison to slightly more than half of that fleet in 2006 and less than 20 percent in the preceding years. In the catcher processor sector, two of the four active vessels used pelagic gear in the first year of the program, in comparison to no pelagic trawl gear prior to implementation of the program. Catch data by gear type cannot be revealed for the catcher processor sector because of confidentiality protections. Participants in the program report that a primary motivation for these changes in gear types is

⁸⁶ In assessing the change in catch rate in the catcher processor limited fishery access, it should be borne in mind that (although not fishing as a cooperative) the vessels fishing in that fishery did not compete for the allocations of pelagic shelf rockfish, reducing the pressure to race for fish.

⁸⁷ These calculations include all halibut mortality of vessels fishing allocations under the program, including mortality in trips targeting Pacific cod and sablefish.

constraining halibut allocations, which could jeopardize cooperative catches in the event that halibut bycatch exceeds allocations.

Table 3-12. Catch by gear by sector in the Central Gulf of Alaska rockfish fishery (2003-2008)

Year	Catcher processors		Catcher vessels					
	Non-pelagic trawl	Pelagic trawl	Non-pelagic trawl			Pelagic trawl		
	Number of vessels	Number of vessels	Number of vessels	Catch of primary rockfish species (in metric tons)	Percentage of catch of primary rockfish species	Number of vessels	Catch of primary rockfish species (in metric tons)	Percentage of catch of primary rockfish species
2003	5	0	31	9,396.6	99.0	1	95.6	1.0
2004	6	0	28	7,875.0	100.0	0	0.0	0.0
2005	6	0	24	6,702.4	94.0	4	429.2	6.0
2006	4	0	23	5,153.2	76.4	13	1,590.0	23.6
2007	4	2	24	4,813.0	62.1	19	2,933.0	37.9
2008	6	1	26	4,230.2	56.8	22	3,216.5	43.2

Source: NMFS Catch Accounting.

The incentive for halibut mortality reductions is increased by the rollover of saved halibut mortality to other fisheries late in the year, allowing the trawl sector as a whole (including vessels that did not qualify for the pilot program) to benefit from these halibut mortality reductions. As seen in the three years of the pilot program, any unused halibut PSC that has been allocated to the cooperatives that has not been used by a cooperative before November 15 or after a declaration to terminate fishing by the cooperative, will be added to the last seasonal apportionment for trawl gear during the current fishing year. On November 13, 2007, 128 metric tons of unused rockfish cooperative halibut PSC was reallocated to the trawl gear, on November 13, 2008, 135 metric tons was reallocated, and on November 15, 2009, 139 metric tons was reallocated. In all three years, the reallocation of halibut PSC from the rockfish pilot program to the GOA trawl fisheries allowed the trawl GOA groundfish fisheries to remain open until December 31. As demonstrated in Table 3-13, in the five years previous to implementation of the rockfish pilot program, the trawl GOA groundfish fisheries were closed to directed fishing prior to the end of the season so as not to exceed the halibut PSC limit. In two of those years, 2004 and 2005, the trawl GOA groundfish fishery was closed to direct fishing on October 1.

Table 3-13. Season duration of the trawl Central Gulf of Alaska groundfish fisheries from October 1 to December 31, 2000 to 2009

Year	October				November				December				
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
2000													
2001													
2002													
2003													
2004													
2005													
2006													
2007													
2008													
2009													

Source: NOAA Fisheries status reports and groundfish closure summaries

* Gaps are approximate closure periods

Catch of groundfish late in the year has fluctuated both before and after implementation of the rockfish pilot program. Table 3-14 below shows vessel count, total catch, and halibut PSC by target for trawl vessels during the October 1 to December 31 period from 2000 to 2009. As seen in the table, in the two years preceding the program, no harvest of groundfish occurred, as all fisheries were closed because no halibut PSC was available. In earlier years, halibut PSC was primarily caught in the shallow-water flatfish, Pacific cod, and arrowtooth flounder fisheries. Smaller amounts of halibut PSC were caught in the rex sole and flathead sole fisheries. In years since the rockfish pilot program, halibut PSC was primarily caught in the shallow-water flatfish fishery, while a smaller amount of halibut PSC was caught

in the Pacific cod and arrowtooth flounder fisheries. The rollover, 128 metric tons in 2007, 135 metric tons in 2008, and 139 metric tons in 2009 has clearly supported additional fishing activity, but the degree of the change is uncertain and appears to depend on target preferences, which have varied year-to-year.

Table 3-14. Vessel count, total catch, and halibut PSC by target for trawl vessels in central and western GOA during the 5th season (Oct 1 – Dec 31) from 2000 - 2009

Species Complex	Target		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Shallow-water	Shallow-water flatfish	Vessel Count	16	9	26	2	0	0	7	7	7	24
		Target catch	1,711	183	3,518	*	0	0	1,776	3,204	5,773	5,970
		Halibut PSC	82	9	213	*	0	0	210	208	238	138
	Pacific cod	Vessel Count	1	53	9	3	0	0	3	6	9	6
		Target catch	*	10,166	170	*	0	0	*	710	2,170	392
		Halibut PSC	*	437	6	*	0	0	*	15	56	7
	Flathead sole	Vessel Count	2	4	2	2	0	0	1	0	2	5
		Target catch	*	194	*	*	0	0	0	0	*	1,320
		Halibut PSC	*	4	*	*	0	0	0	0	*	13
Deep-water	Rex sole	Vessel Count	4	1	2	1	0	0	1	1	0	3
		Target catch	1,353	*	*	*	0	0	*	*	0	*
		Halibut PSC	38	*	*	*	0	0	*	*	0	*
	Arrowtooth	Vessel Count	2	1	8	13	0	0	7	6	8	8
		Target catch	*	*	2,702	6,700	0	0	2,095	1,808	2,025	1,098
		Halibut PSC	*	*	70	186	0	0	122	38	45	12
	Deep-water flatfish	Vessel Count	2	0	0	0	0	0	0	0	0	0
		Target catch	*	0	0	0	0	0	0	0	0	0
		Halibut PSC	*	0	0	0	0	0	0	0	0	0
	Rockfish	Vessel Count	0	0	0	1	0	0	3	7	5	4
		Target catch	0	0	0	*	0	0	*	973	1,392	458
		Halibut PSC	0	0	0	*	0	0	*	9	23	1
Days open during 5th season**			92	20	16	14	0	0	7	82	82	92

Source: Target catch was from Blend data/Catch Accounting, while halibut PSC was from NMFS PSC data

* Withheld for confidentiality

** All closures during the 5th season were to prevent exceeding halibut PSC limit

3.3.4 Unallocated Prohibited Species Catch

In prosecuting the targeted rockfish fishery in the CGOA, participating catcher processors and catcher vessels in the fishery also catch prohibited species. Retention of prohibited species is not allowed in the GOA groundfish fisheries, including the trawl rockfish fishery. The Magnuson-Stevens Act prohibition on retention of prohibited species harvests was intended to eliminate any incentive that groundfish fishermen might otherwise have to target these species: Pacific halibut (*Hippoglossus stenolepis*), Pacific salmon (*Oncorhynchus spp.*), steelhead trout (*Oncorhynchus mykiss*), Pacific herring (*Clupea pallasii*), red king crab (*Paralithodes camtschaticus*), blue king crab (*P. platypus*), golden or brown king crab (*Lithodes aequispinus*), bairdi Tanner crab (*Chionoecetes bairdi*) and opilio Tanner crab (*C. opilio*).

Prohibited species harvest data were obtained from National Marine Fisheries Service (NMFS) for the CGOA trawl rockfish fishery. NMFS uses observer data to calculate prohibited species harvests. For prohibited species other than halibut, 100 percent mortality is assumed.

Table 3-15 provides an overview of the prohibited species catch that has resulted from the CGOA rockfish fishery over the thirteen year period from 1996-2006. The total annual amount of targeted groundfish (reported in metric tons) is shown in the second column of the table. For the prohibited species, the figures show the number caught, not the weight of the catch, with the exception of herring. The last column in the table shows the catch of herring in kilograms.

Table 3-15. Prohibited species catch in the targeted CGOA rockfish fishery (1996-2006)

Year	Sector	Targeted groundfish (mt)	Halibut mortality (mt)	Bairdi mortality (count)	Red king crab mortality (count)	Chinook salmon mortality (count)	Other salmon mortality (count)	Other king crab mortality (count)	Other tanner crab mortality (count)	Herring mortality (kgs)
1996	CP totals	7,225.3	53.1	84.8	0.0	17.1	11.4	423.3	394.0	20.4
1997	CP totals	10,543.8	148.9	94.8	0.0	2,316.4	368.1	456.3	0.0	0.0
1998	CP totals	10,753.0	146.4	19.2	0.0	51.8	145.6	276.7	0.0	0.0
1999	CP totals	11,404.4	169.0	173.5	226.1	141.2	619.7	333.4	1.6	0.0
2000	CP totals	6,883.4	48.0	0.2	0.0	905.7	81.5	279.2	0.0	57.5
2001	CP totals	8,941.9	110.6	1,615.1	0.0	177.0	129.9	324.7	36.0	0.0
2002	CP totals	7,420.0	111.1	726.2	0.0	1,141.6	671.5	354.3	0.0	0.0
2003	CP totals	7,218.2	65.5	0.1	57.0	0.4	29.9	1.6	0.0	0.0
2004	CP totals	6,954.6	48.8	0.0	253.7	75.1	136.0	237.7	0.0	0.0
2005	CP totals	7,973.1	68.1	0.0	0.0	361.8	0.0	0.0	0.0	0.0
2006	CP totals	7,725.6	57.8	34.5	0.0	0.0	195.1	0.0	0.0	0.0
1996	CV totals	7,340.2	93.0	4,172.4	0.0	121.2	49.7	75.4	163.8	0.0
1997	CV totals	4,908.3	49.5	6,770.8	0.0	0.0	0.0	0.0	0.0	0.0
1998	CV totals	6,225.3	86.8	2,727.0	0.0	55.4	207.7	82.4	0.0	0.0
1999	CV totals	10,492.3	124.3	384.5	5.2	328.0	909.4	130.6	0.0	0.0
2000	CV totals	12,816.5	136.5	224.6	0.0	212.5	485.5	0.2	0.3	0.0
2001	CV totals	10,101.6	206.3	778.8	0.0	0.0	254.7	0.0	0.0	91.4
2002	CV totals	11,330.4	95.1	178.4	0.0	107.9	222.9	21.1	0.0	0.0
2003	CV totals	13,565.9	154.6	171.0	0.0	800.3	2,150.1	0.0	0.0	0.0
2004	CV totals	12,760.7	215.0	1,517.2	0.0	809.5	311.2	52.9	0.0	0.0
2005	CV totals	10,026.1	138.8	1,575.1	0.0	98.3	3,270.1	0.0	0.0	0.0
2006	CV totals	9,195.3	75.1	795.2	0.0	263.4	1,062.2	0.0	0.0	0.0

Source: NMFS PSC data for PSC data and Catch Accounting/Blend Data for targeted groundfish data

3.3.5 Other Unallocated Species

All non-allocated secondary species harvested in the CGOA rockfish fishery will be managed by MRA, the same as under current management. These non-allocated species include arrowtooth flounder, deep water flatfish, shallow water flatfish, flathead sole, rex sole, pollock, other species, Atka mackerel and other rockfish.

Table 3-16 shows the annual harvest of the non-allocated secondary species for the period from 1996 through 2006 for the catcher processor sector and the catcher vessel sector. The data source for all of the tables is the same, NMFS blend data 1996-2002 and NMFS catch accounting data 2003-2006.

Table 3-16. Incidental catch of unallocated species by sector in the Central Gulf of Alaska target rockfish fishery (1996-2006)

Year	Atka Mackerel			Arrowtooth flounder			Flathead sole			Other flatfish		
	Sector Harvest (mt)		Total CGOA harvest (mt)	Sector Harvest (mt)		Total CGOA harvest (mt)	Sector Harvest (mt)		Total CGOA harvest (mt)	Sector Harvest (mt)		Total CGOA harvest (mt)
	CP	CV		CP	CV		CP	CV		CP	CV	
1996	1	3	8.98	271	1,507	19,740	7	100	2165.69	60	579	10853.83
1997	1	0	7.43	525	477	12,620	14	32	1933.59	116	159	9984.81
1998	0	0	38.19	774	664	9,610	6	13	1168.12	39	98	5388.44
1999	0	0	0.73	938	1,233	11,902	7	51	686.76	33	157	4163.35
2000	0	1	2.57	589	1,660	17,640	2	72	1273.65	28	491	7136.32
2001	7	0	17.93	341	1,035	13,442	20	71	1311.06	70	460	6622.67
2002	11	15	29.59	394	747	14,895	3	17	1725.1	49	155	7444.54
2003	130	19	161.386	328	884	22,149	5	73	1934.299	60	176	5360.603
2004	30	6	39.402	266	1,473	16,169	6	50	2472.616	46	148	3657.729
2005	379	1	387.019	212	606	17,379	0	70	1940.88	42	75	5078.649
2006	272	22	317.139	151	733	25,579	0	23	2678.86	23	93	7782.798

Year	Other rockfish			Other species			Pollock			Rex sole		
	Sector Harvest (mt)		Total CGOA harvest (mt)	Sector Harvest (mt)		Total CGOA harvest (mt)	Sector Harvest (mt)		Total CGOA harvest (mt)	Sector Harvest (mt)		Total CGOA harvest (mt)
	CP	CV		CP	CV		CP	CV		CP	CV	
1996	490	28	618	54	65	3,700	27	49	25,654	41	202	5,202
1997	844	33	1,185	98	64	4,510	130	47	57,978	87	52	2,438
1998	574	58	851	65	46	2,704	37	48	88,136	28	25	2,195
1999	253	307	689	60	76	3,130	19	31	68,274	32	116	2,393
2000	222	62	553	55	124	4,991	17	117	47,690	12	73	2,702
2001	221	35	462	118	179	4,406	12	53	37,664	65	152	2,507
2002	366	50	601	116	103	3,445	8	93	31,438	56	163	2,619
2003	486	51	704	30	134	4,917	26	41	32,078	59	70	2,727
2004	390	98	536	50	58	3,997	49	80	39,014	27	44	940
2005	431	41	516	63	60	4,226	89	89	47,243	17	40	1,603
2006	398	54	607	57	49	6,037	49	123	44,237	20	53	2,944

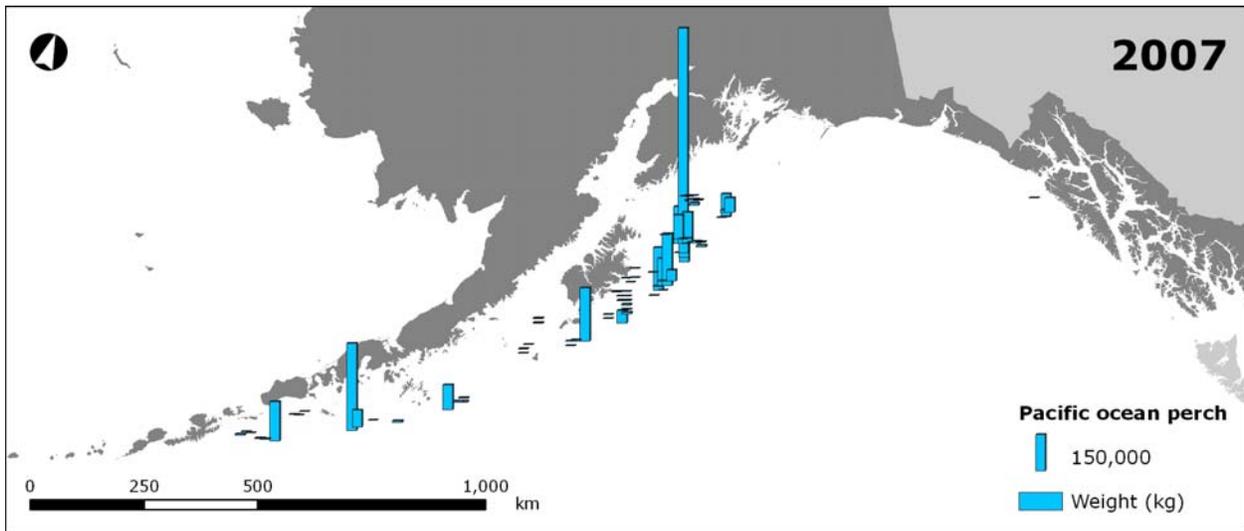
Source: Catch accounting and Blend Data

3.3.6 Benthic Habitat and Essential Fish Habitat

Section 303(a)(7) of the Magnuson-Stevens Act requires all FMPs to describe and identify Essential Fish Habitat (EFH), defined as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.” In addition, FMPs must minimize to the extent practicable adverse effects of fishing on EFH and identify other actions to conserve and enhance EFH. To this end, the Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska (NMFS, 2004) provides a detailed analysis of the interactions between fisheries and EFH. Most of the controversy surrounding EFH concerns the effects of fishing activities on sea floor habitats. The analysis concludes that there are long term effects of fishing on benthic habitat features off Alaska and acknowledges that considerable scientific uncertainty remains regarding the consequences of those effects on the sustained productivity of managed species. Based on the best available scientific information, the EIS concludes that the effects on EFH are minimal because the analysis finds no indication that continued fishing activities at the current rate and intensity would alter the capacity of EFH to support healthy populations of managed species over the long term. The analysis concludes that no Council-managed fishing activities have more than a minimal and temporary adverse effect on EFH, which is the regulatory standard requiring action to minimize adverse effects under the MSA. Notwithstanding these findings, the Council elected to adopt a variety of new measures to conserve EFH, which have been implemented over the past few years.

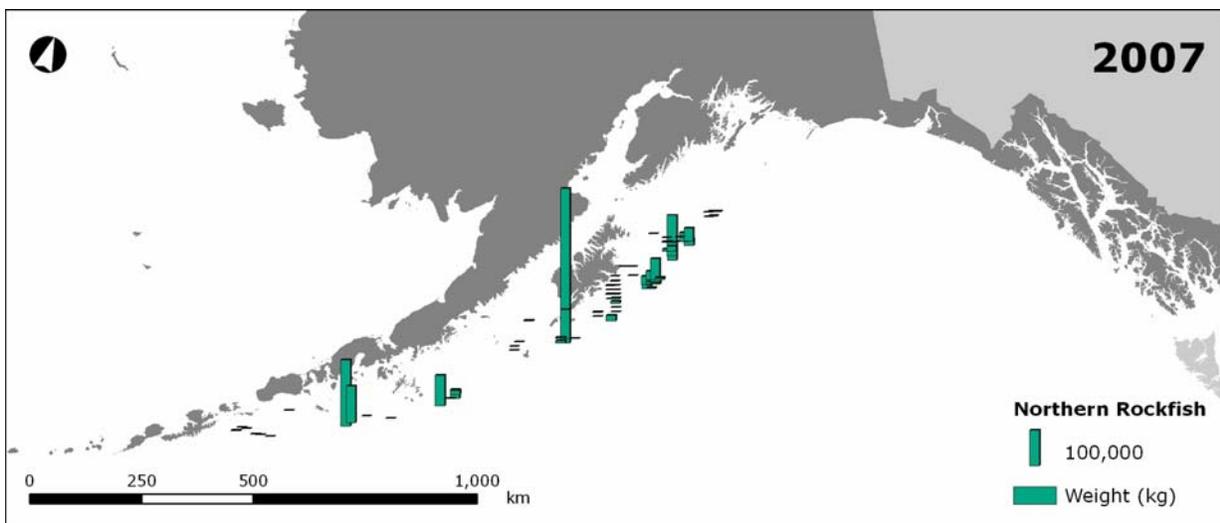
Figure 3-1, Figure 3-2, and Figure 3-3 show the concentration of observed rockfish trawl hauls for 2007. The areas of greatest concentration are on the slope south of the Kenai Peninsula, with fewer areas of concentration south of Kodiak Island and south of the Alaska Peninsula. The Pacific Ocean perch fishery occurs over sand, gravel, and mud at depths of 90 to 200 fathoms. The northern rockfish and pelagic shelf rockfish fisheries occur over rock, gravel, and hard sand at depths of 40 to 80 fathoms. The analysis of the EIS provides detailed descriptions of EFH and the effects of fishing on EFH (NMFS, 2004).

Figure 3-1. Pacific ocean perch catch based on observer data (100 square kilometer blocks) for 2007



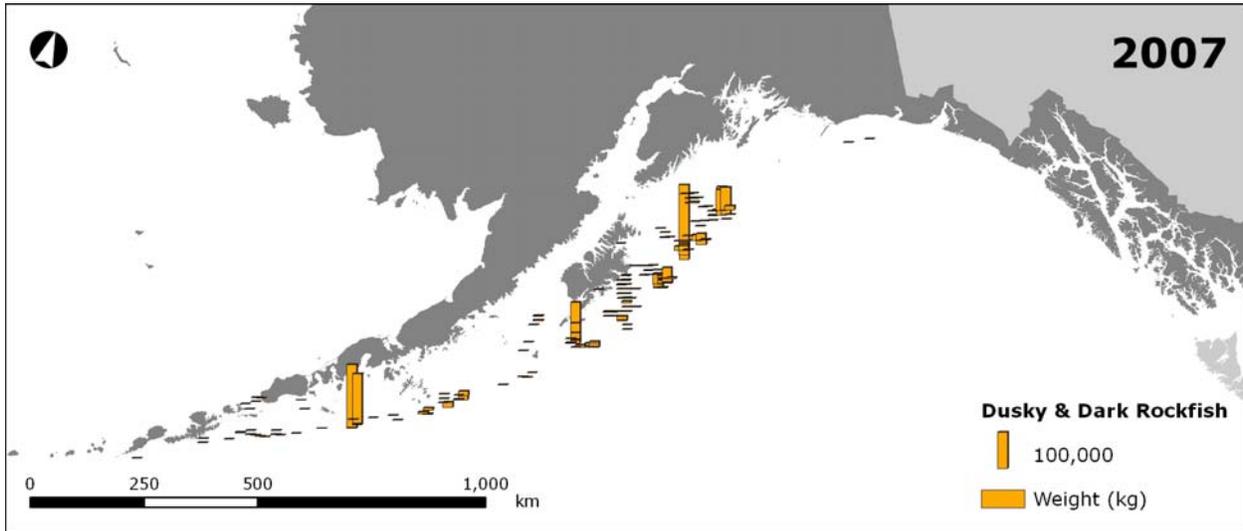
Source: Dana Hanselman

Figure 3-2. Northern rockfish catch based on observer data (100 square kilometer blocks) for 2007



Source: Dana Hanselman

Figure 3-3 Pelagic shelf rockfish catch based on observer data (100 square kilometer blocks) for 2007



Source: Dana Hanselman

3.3.7 Endangered or Threatened Species

The Endangered Species Act of 1973 as amended [16 U.S.C. 1531 et seq; ESA], provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered jointly by the NMFS for most marine mammal species, marine and anadromous fish species, and marine plants species and by the USFWS for bird species, and terrestrial and freshwater wildlife and plant species.

The designation of an ESA listed species is based on the biological health of that species. The status determination is either threatened or endangered. Threatened species are those likely to become endangered in the foreseeable future [16 U.S.C. § 1532(20)]. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range [16 U.S.C. § 1532(20)]. Species can be listed as endangered without first being listed as threatened. The Secretary of Commerce, acting through NMFS, is authorized to list marine fish, plants, and mammals (except for walrus and sea otter) and anadromous fish species. The Secretary of the Interior, acting through the USFWS, is authorized to list walrus and sea otter, seabirds, terrestrial plants and wildlife, and freshwater fish and plant species.

In addition to listing species under the ESA, the critical habitat of a newly listed species must be designated concurrent with its listing to the "maximum extent prudent and determinable" [16 U.S.C. § 1533(b)(1)(A)]. The ESA defines critical habitat as those specific areas that are essential to the conservation of a listed species and that may be in need of special consideration. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans, which were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.

Species listed as endangered and threatened under the ESA that may be present in the Federal waters off Alaska include:

Common Name	Scientific name	ESA status
Northern Right Whale	<i>Balaena glacialis</i>	Endangered
Bowhead Whale ¹	<i>Balaena mysticetus</i>	Endangered
Sei Whale	<i>Balaenoptera borealis</i>	Endangered
Blue Whale	<i>Balaenoptera musculus</i>	Endangered
Fin Whale	<i>Balaenoptera physalus</i>	Endangered
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered
Snake River Sockeye Salmon	<i>Onchorynchus nerka</i>	Endangered
Short-tailed Albatross	<i>Phoebastria albatrus</i>	Endangered
Steller Sea Lion	<i>Eumetopias jubatus</i>	Endangered and Threatened ²
Snake River Fall Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Snake River Spring/Summer Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Puget Sound Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Lower Columbia River Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Upper Willamette River Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Upper Columbia River Spring Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Endangered
Upper Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Endangered
Snake River Basin Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Lower Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Upper Willamette River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Middle Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Spectacled Eider	<i>Somateria fishcheri</i>	Threatened
Steller Eider	<i>Polysticta stelleri</i>	Threatened

¹ The bowhead whale is present in the Bering Sea area only.

² Steller sea lion are listed as endangered west of Cape Suckling and threatened east of Cape Suckling.

Direct and indirect interactions between those species listed under the ESA and groundfish harvest activity may occur due to overlap of groundfish fishery activities and habitat of listed species. Section 7 consultations with respect to the actions of the Federal groundfish fisheries have been done for all the species listed above, either individually or in groups. Additional information on endangered and threatened species appears in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (NMFS 2004).

3.3.8 Forage Fish

Forage fish are those species that are a critical food source for many marine mammal, seabird, and fish species. Biomass estimates of forage fish are uncertain because independent surveys for forage fish have not been implemented. Preliminary estimates from ecosystem models suggest that stocks of forage fish are stable. Catch of forage fish by commercial fisheries is small and results in insignificant forage fish mortality. Additional detail analysis of the effects of commercial fisheries on forage fish appears in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (NMFS 2004).

3.3.9 Marine Mammals

Marine mammals not listed under the ESA that may be present in the BSAI and GOA include cetaceans [minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), Dall's porpoise (*Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*) and the beaked whales (e.g., *Berardius bairdii* and *Mesoplodon* spp.)] and pinnipeds [northern fur seals (*Callorhinus ursinus*) and Pacific harbor seals (*Phoca vitulina*)] and the sea otter (*Enhydra lutris*).

Direct and indirect interactions between marine mammals and groundfish harvest occur due to overlap in the size and species of groundfish harvested in the fisheries that are also important marine mammal prey and due to temporal and spatial overlap in marine mammal foraging and commercial fishing activities. A detailed analysis of the effects of commercial fisheries on marine mammals appears in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (NMFS 2004).

3.3.10 Seabirds

Many seabirds occur in Alaskan waters indicating a potential for interaction with commercial fisheries. The most numerous seabirds in Alaska are northern fulmars, storm petrels, kittiwakes, murrelets, auklets, and puffins. These groups, and others, represent 38 species of seabirds that breed in Alaska. Eight species of Alaska seabirds breed only in Alaska and in Siberia. Populations of five other species are concentrated in Alaska but range throughout the North Pacific region. Marine waters off Alaska provide critical feeding grounds for these species as well as others that do not breed in Alaska but migrate to Alaska during summer, and for other species that breed in Canada or Eurasia and overwinter in Alaska. A detailed analysis of the effects of commercial fisheries on seabirds appears in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (NMFS 2004).

3.3.11 The Ecosystem

An ecosystem is a spatially explicit area that includes all organisms and components of the abiotic environment within its boundaries. The GOA is a large marine ecosystem, identified by its distinct geographical and biological features (see the Alaska Groundfish Fisheries Programmatic SEIS).

Three natural processes underlie changes in population structure of species in marine ecosystems: competition, predation, and environmental disturbance. Natural variations in recruitment, survivorship, and growth of fish stocks are consequences of these processes. Human activities, such as commercial fisheries, can also influence the structure and function of marine ecosystems. Fishing may affect ecosystems by altering energy flows, change predator-prey relationships and community structure, introducing foreign species, affecting trophic or functional diversity, alter genetic diversity, and alter habitat, and damage benthic organisms or communities. An assessment of the effects of commercial fishing on marine ecosystems off Alaska is contained in the Alaska Groundfish Fisheries Programmatic SEIS.

3.3.12 Environmental justice

Environmental justice requires that federal agencies address any disproportionately high, adverse environmental or health effects of on minority or low-income populations. Environmental justice includes not only effects on the natural and physical environment, but also related social, cultural, and economic effects (see Executive Order 12898).

To assess the environmental justice of the alternatives, the demographics of the geographic areas affected by the action are examined to determine the extent of minority or low-income populations and the degree to which those populations could be affected. The connection of these populations to the fishery resource is examined to determine the degree to which the alternatives are likely to disproportionately affect those populations.

The city most affected by this action is Kodiak, where all of the eligible processors operate and several of the owners of eligible catcher vessels reside. The 2000 U.S. census estimated the population of Kodiak at 6,334. Of this population, approximately 30 percent are estimated to be of Asian descent, while another 10 percent are estimated to be Native American or Native Alaskan and slightly less than 10 percent are estimated to be Hispanic. An additional 10 percent are estimated to be of mixed race, making approximately 50 percent of the community minority or mixed race. The U.S. census also estimated approximately 7.4 percent of the population to be at or below the poverty level (U.S. Bureau of the Census, 2000).

The Kodiak minority and low income population that is likely to be affected by the alternatives are employees of the processing facilities in the community. As recent as 2002, approximately 1,000 persons were estimated to be employed by Kodiak shore-based processing facilities. A large portion of this workforce is believed to be drawn from the local, minority populations (EDAW, Inc, 2005). Consequently, any differential impacts of the alternatives on processing employment are likely to have some environmental justice implications. Additional information concerning Kodiak-based processing can be found in the Comprehensive Baseline Community Profiles (EDAW, Inc., 2005). Although no crew specific data are available, if catcher vessel crews are assumed to mirror the local population demographics, Kodiak catcher vessels likely employ a substantial number of minority crew.

While most of the eligible catcher vessel and shore-based processing activity is based in Kodiak, a large portion of the eligible catcher processor fleet is based in Seattle. No specific minority or low population community is known to depend substantially on the catcher processor fleet for employment. As a result, no environmental justice considerations arise with respect to the Seattle-based catcher processor fleet.

3.3.13 Economic and Socioeconomic Factors

A comprehensive description of the social and economic conditions of the fisheries is contained in Section 2.43 of the Regulatory Impact Review above.

3.4 Analysis of the Alternatives

This section analyses each of the alternatives comparing the alternatives to each other and to the baseline condition in the fishery. Assessing the effects of the alternatives involves some degree of speculation. In general, the effects arise from the actions of individual participants in the fisheries under the incentives that arise under the different alternative. Predictability of these individual actions and their effects is constrained by the novelty of the alternatives under consideration and incompleteness of information concerning the fisheries, including the absence of complete economic information and well-tested models that predict behavior under different institutional structures. In addition, unpredictable factors, such as conditions in different fisheries and of the different stocks and condition of the overall economy, could influence the responses of participants under the alternatives.

To examine the impacts of the alternatives, the analysis begins by considering the changes in practices and participation in fishing and processing that are likely to arise under the various management systems proposed by the different alternatives. These differences in fishing and processing practices, together with the management changes, drive environmental, economic, and socioeconomic impacts. Through this methodology, all of the different impacts are brought to light allowing the reader to determine the significance of impacts of the different alternatives.

3.4.1 Effects on Implementation, Management, Monitoring, and Enforcement

Status Quo

Under status quo, the rockfish fisheries would revert back to a managed limited access race for fish. Managers would manage the LLP, under which license holders must declare their intention to use a license

on a vessel with the NOAA Fisheries. The rockfish fisheries would be managed at the fleet level. The trawl season would be expected to open in early July. Managers would monitor fleet harvest in attempt to time their closure announcement with full harvest of the TAC, reserving a relatively minor amount of rockfish to support incidental catch of rockfish in fisheries later in the year.

Observer coverage would revert to the level prior to implementation of the rockfish pilot program in 2007. During that period, observer coverage varied with vessel size. In general, vessels that are 125 feet or longer LOA are required to have 100 percent observer coverage. Vessels under 125 feet and 60 feet or greater in length are required to have 30 percent observer coverage. Vessels under 60 have no observer requirement. Shoreside and floating processors that process in excess of 1,000 metric tons of groundfish in calendar month are required to maintain 100 percent coverage to observe landings. Shoreside and floating processors that process less than 1,000 metric tons and more than 500 metric tons of groundfish in a calendar month are required to maintain 30 percent observer coverage (CFR §679.50).

Program Alternatives

The proposed rockfish program is very similar in its implementation, management, monitoring, and enforcement program developed under the rockfish pilot program. Because of the similarities between the two programs, there is no apparent reason to develop different standards for the new rockfish program.

In general, catcher processors monitoring requirements are:

- all hauls must be observed by a NMFS-approved observer (200% observer coverage or an alternative fishing plan)
- an observer work area is required
- all catch must be weighted on NOAA Fisheries approved scales
- no catch may be on deck when fish are moving from the bins or tanks to the factor or when fish are passing across the scale
- vessels must implement a vessel specific monitoring plan that will help to ensure unbiased sampling, and provide additional sorting space for observers

For catcher vessels, a NMFS-approved observer must be on the vessel while participating in a rockfish cooperative, rockfish limited access fishery, or rockfish sideboard fishery. Participating vessels would be required to carry and use a VMS (Vessel Monitoring System) transponder. Use of VMS will allow NOAA Fisheries to monitor standdown vessels, track harvest location, ensure that deliveries are made to participating processors and facilitate general enforcement. With the exception of some vessels that may choose to participate in the entry level fishery, all of the vessels that are eligible for this program are currently required to use VMS during most of the fishing year. Thus, this requirement will have little or no impact on the participating fleet.

With the exception of accounting for halibut PSC, catch accounting for shoreside deliveries will take place shoreside. Standards are:

- From the observation area¹, an observer must be able to monitor the entire flow of fish and ensure that no removals of catch have occurred between the delivery point² and a location where all sorting has taken place and each species has been weighed.
- All catch delivered to the plant must be sorted and weighed by species. The Catch Monitoring

¹ The observation area is a location designated in the CMCP where an observer monitors the flow of fish during a delivery.

² The delivery point is the first location where fish removed from a delivering catcher vessel can be sorted or diverted to more than one location.

Control Plan (CMCP) must detail the amount and location of space for sorting catch, the number of staff, devoted to catch sorting and the maximum rate that catch will flow through the sorting area.

- The observation point must be located where it is convenient to the observer work station. An observer in average physical condition must be able to walk between the work station and the observation point in less than 20 seconds without encountering safety hazards.
- The observer workstation must be located where the observer has access to unsorted catch.
- An observer work station, for the exclusive use of the observer, must provide: a platform scale of at least 50 kg capacity; an indoor working area of at least 4.5 square, meters, a table, and a secure and lockable cabinet.
- A plant liaison, designated by name, that would be responsible for orienting new observers to the plant, ensuring that the CMCP is implemented, and assisting in the resolution of observer concerns.

All deliveries made to shoreside processors under this project will have to be observed. This will require that an observer be on duty whenever program deliveries are made. Because observers will not be allowed to work more than 12 hours per day, processors that wish to take deliveries around the clock would be required to provide more than one observer. NOAA Fisheries also wishes to ensure that full coverage of rockfish deliveries does not adversely affect shoreside coverage for other fisheries that may be taking place at the same time. In order to prevent this, observer coverage for rockfish deliveries will not count towards meeting a processor's observer coverage obligations in other fisheries.

For the entry level fishery, monitoring protocols would need to be in place for all participants. Implementing a monitoring program in the entry level fishery could include high costs relative to gross revenues particularly for trawl vessels and may preclude participation by some eligible vessels. However, these measures would be necessary to adequately measure small levels of catch in a sector where there is a high potential for exceeding quota levels. Because participants in the entry level fishery are allocated only primary species, only 30 percent observer coverage will be necessary for this fleet. Because catch accounting will take place shoreside, participating entry level processors will be required to meet the same standards as other program processors. Vessels would also be required to carry and use a VMS system when participating in the program.

Processors will need to continue developing the implementing the Catch Monitoring and Control Plan (CMCP) and NOAA Fisheries will need time to review and approve those plans before fishing starts. The CMCP standards allow processors to use a range of monitoring tools in meeting performance standards, so it is not possible to estimate the time needed for processors to develop and implement plans. NOAA Fisheries requires approximately 14 business days to review and approve a CMCP and an additional 10 business days to arrange for a plant inspection.

Given the rockfish program is very similar to the rockfish pilot program, changes to the catch accounting system should be limited. Leasing of catch history by cooperatives must continue to be tracked in the accounting system. Leasing will require receipt of lease information, incorporation of lease information for reassignment, readjustment of accounts, and most likely reporting for both lessee and lessor.

The entry-level fishery will require annual receipt of applications, calculation of allocations, and establishment of individual accounts. Separate accounts would be necessary for each vessel for northern rockfish, Pacific ocean perch, and pelagic shelf rockfish. The number of entries each year unknown, and it will require additional amount of time to create these annual accounts.

Permitting and quota determination process can also be staff intensive. These processes include receiving applications for quota, calculating allocations based on history, accounting for catch history transfers, and distributing annual quota to cooperatives. Time would be needed for the completion of these processes prior to the beginning of fishing. The initial allocation process would be subject to requirements for appeals of disputed catch history claims.

Given the complexity of the program and the limited time period for its effectiveness, NOAA Fisheries intends to continue to manage the fishery to reduce costs and the complexity of quota management. First, similar to the rockfish pilot program, the initial allocation process would be simplified. Eligible LLP holders would be provided with a summary of their catch history and would have an opportunity to dispute claims and present evidence to support their claims, but NOAA Fisheries would not require a formal application period with a specific deadline as was required under the BSAI crab rationalization program.

Second, NOAA Fisheries intends to use the analytical database developed by the Council for determining catch history allocations. The Council data are the most recent available, and are the best available information for assessing catch history. Further, relying on these data will reduce confusion that may arise if NOAA Fisheries and Council data sources differ in their estimates of catch history by vessel. If necessary, appeals would require NOAA Fisheries to consult original source data.

Third, cooperatives would be required to notify NOAA Fisheries annually which LLP holders are in a cooperative prior to the annual harvest specification process. An deadline of October 15 will be established for this notification to provide adequate time to allocate catch history to specific cooperatives through the specification process. Those LLP holders not in a cooperative would have their catch history assigned to the limited access pool under most of the options.

Fourth, for vessels subject to standdown provisions, NMFS would continue to impose a check-in and check-out requirement for vessel operators to ensure adequate compliance with standdown provisions.

3.4.2 Effects on Fishing Patterns

Patterns and levels of harvester participation in the CGOA rockfish fisheries are likely to vary under the different alternatives. The following summarizes changes in fishing patterns that are pertinent to the analysis of this environmental assessment. Additional information on fishing patterns is contained in the RIR above.

Status Quo

Under the status quo alternative, fishing patterns would likely revert back to similar fishing patterns before the implementation of the Pilot Program in 2007. During that period, trawl catch dominated the fisheries, with catch concentrated shortly after the early July opening.

Catch of catcher vessels would likely occur close to port because of the need to offload harvests and return to the fishing grounds to maximize total catch. In addition, processors would likely require fishermen to limit trips to less than 72 hours as a means of ensuring quality of catch. This limitation on fishing trip time would effectively limit the spatial distribution of catch for catcher vessels. Since Kodiak processors process the great majority of catch from the rockfish fisheries, catch of the catcher vessel sector would likely be concentrated in the grounds surrounding Kodiak. While catcher processors would also be subject to the time limitation of the season, their fishing activity would likely not be spatially limited in the same manner as catcher vessels since catcher processors process their catch on board.

Participants would like revert to catching valuable secondary species (Pacific cod, sablefish, thornyhead rockfish, shortaker rockfish, and roughey rockfish) at levels approaching the MRA. Catch of these species is likely to be limited because of the race for the target rockfish. Participants would try to strike a balance of time harvesting target rockfish and valuable secondary species in an attempt to maximize their total revenues.

Program Alternatives

For the most part, fishing patterns are likely to be similar under all of the program alternatives, so those patterns are summarized in this single discussion.

Given the proposed rockfish program alternatives would continue to allocate cooperative fishing privileges, which may be fished during an extended season, participants in the program are likely to continue the current rate of harvest, which is slower than status quo. In addition, participants would likely continue to distribute harvest over a greater time and a larger area when compared to status quo.

Changes in activities across the two sectors would likely continue to differ somewhat because of operational requirements. Catcher vessels, given their limited range of fishing activity, will likely continue to be concentrated in areas that are in relatively close proximity to Kodiak, where all of the qualified processors are located. Catcher processors, on the other hand, are not constrained by shore-based processing, and thus would likely continue to distribute their catch over larger areas of the grounds.

Both sectors would likely continue to distribute catch over extended time periods, as the longer season allows. The extent to which catch is temporally distributed depends on both operational needs of participants and bycatch considerations. Most participants would likely schedule fishing to avoid conflicts with their participation in other fisheries. At a minimum, one would expect fishing continue to occur prior to and after the July season to allow participants to fish in other July fisheries. Participants may also be distributed throughout the season (by catcher vessels particularly) to continue to develop markets for fresh fish. Other market demands and scheduling preferences are likely to occur, but depend on individual circumstances and cannot be predicted.

Bycatch considerations could also to affect the temporal distribution of fishing effort. Participating fishermen will be limited by allocations of the three rockfish species, three or four secondary species and halibut PSC. All of the allocations are based on historic catch that occurred in the traditional July season. Attempting to fully harvest all of these allocations could be challenging, if catch composition changes substantially outside of the traditional July season.

3.4.3 Effects on Target Rockfish Stocks

Status Quo

Management of the target rockfish fisheries and associated fishing patterns would return to pre rockfish pilot program period. Prior to implementation of the rockfish pilot program, the rockfish fishery was managed as a limited entry derby style fishery. The season for all three rockfish species opened near the first of July. Under this alternative, directed fishing for each species would remain open until the TAC was estimated to have been fully harvested, at which time a closure would be announced. Under status quo, there is some potential for localized depletion of target rockfish stocks due to concentrated effort as a result of participants attempting to maximize their catch. However, it is unlikely that under status quo that allowable biological catch limits are rarely, if ever exceeded, and therefore it can be expected that overfishing limits will not be exceeded.

Program Alternatives

The program alternatives should have no negative impact on stocks of target rockfish populations. These species will continue to be managed by conservatively set TACs. Cooperative allocations in the fisheries should effectively limit catch to the TACs. More precise management of the TACs should be possible under program alternatives, as individuals within a cooperative will be responsible for any overage.

Some potential benefit could arise, if participants distribute catch over larger areas or time periods, reducing any potential local depletion that could occur under the status quo alternative. Any beneficial effect from greater distribution of catch spatially is likely to be limited, if participants perceive a benefit to concentrating catch to reduce costs or increase revenue. For catcher vessels, concentration of catch in close proximity to processors could improve quality of landings, as needed to serve some high valued markets. For catcher processors, concentration of catch spatially and temporally could reduce costs, if consistent high catch rates are observed at particular times and locations.

The May 1st opening date of the fishery could result in some harvests in the fishery prior to completion of rockfish reproduction. The exploitation rates for rockfish in the GOA are conservative, largely due to the lack of definitive biological information on many of the species. It is not likely that allowing the fishery to occur prior to larvae release would create a biological concern.

3.4.4 Effects on Allocated Secondary Species and Prohibited Species Catch

Four or five secondary species, depending on the sector, are allocated under the rockfish program. Those species are Pacific cod, sablefish, shortraker rockfish, roughey rockfish, and thornyhead rockfish. In addition, halibut mortality will be allocated under the program alternatives. This section briefly examines the effects of the program on the stocks of those species.

Status Quo

Under the status quo management, the rockfish fishery will revert to limited access management. Catch of secondary species in the target rockfish fishery will be limited by MRAs and TACs that limit overall catch from all fisheries. Incidental catch of Pacific cod and sablefish in the rockfish fishery were approximately 2.5 and 10 percent of the respective TACs of those species in the CGOA prior to implementation of the rockfish pilot program in 2007. Incidental catch of thornyheads by the rockfish fisheries during the qualifying years of the rockfish pilot program were approximately 25 of the Central Gulf total catch, while incidental catch of shortraker/roughey (under the combined TAC) was over half of the total harvest from the Central Gulf. Although this catch is substantial, each of these species is managed under conservative TACs. Retained catch under an LLP rockfish fishery would be limited by MRA, with total catch limited by the current system of putting species on PSC status, if the TAC is reached and closing fisheries that incidentally catch the species, if the ABC is to be reached. In addition, the separation of shortraker rockfish and roughey rockfish into separate TACs (established in 2005) should ensure the stock integrity of these two species.

Halibut is managed as PSC in the CGOA rockfish fisheries. Catch of halibut is required to be discarded and would be accounted for against the deep-water complex PSC allocation if the Council selected status quo. Although halibut PSC has occasionally required the closure of the target rockfish fisheries prior to the implementation of the rockfish pilot program in 2007, the fishery does not have negative effects on halibut stocks.

Program Alternatives

Similar to the target rockfish stocks, no negative effects on secondary species stocks are expected to occur under the program alternatives. Catch of these species will be limited by cooperative allocations and

reduced MRAs.⁸⁸ In addition, discards are not permitted for allocated species under the program. Overall harvests will continue to be limited by TACs that apply to total catch from all fisheries.

Some rockfish participants could elect to participate in a limited access fishery under some of the options. Secondary species harvests from any such limit access fishery will be constrained by reduced MRAs. These reduced MRAs may be a disincentive for participation in the limited access fishery. In any case, harvests of secondary species will be limited by the constraining allocations to cooperatives and by reduced MRAs, which should ensure that overall TAC is not exceeded.

In development of the pilot program, additional attention was given to shortraker and rougheye rockfish to ensure that the change in management would not negatively affect those stocks. The species were historically managed under an aggregate MRA; however, managers believe that catches of shortraker exceeded rougheye catches, while shortraker stocks were less abundant. To adequately protect shortraker, the maximum catcher processor cooperative allocations were reduced from their historic catches to approximately 30 percent of the shortraker TAC, while rougheye maximum allocations were set at slightly less than 60 percent of the rougheye TAC. Both catcher processor limited access participants and all catcher vessels in the rockfish pilot program are limited by a reduced MRA of 2 percent of target rockfish catches. Under these rules, (as shown in Table 3-17 and Table 3-18) allowable catches of shortaker and rougheye by catcher processors in the program differs with catcher processor sector choices of whether to enter a cooperative or fish in the limited access fishery. Generally, catcher processors are permitted to retain more shortaker rockfish and rougheye rockfish, if they join cooperatives. So, maximum retained catch by the sector would be permitted, if all catcher processors chose to join cooperatives. Yet, since discards are permitted by participants in the limited access, it is possible that total catches of shortraker rockfish and rougheye rockfish could be greater if a large number of catcher processors chose to join the limited access, and participants in the limited access have substantial discards. Since all catcher vessels in the program are subject to an aggregate MRA that limits only retained catch and does not distinguish catch by species, no such difference in allowable retention arises in that sector. To ensure that shortraker catch is constrained, the Council included a provision in the program alternatives that would require shortraker to be put on PSC status for catcher vessels in the program in the event that their catch exceeds 9.72 percent of the CGOA TAC for the species.

Table 3-17. Maximum permitted catches and actual catch of shortaker and rougheye rockfish in 2007

shtrkrngheye 2007		Catcher processor	Catcher vessels	Total
Maximum permitted catches under various co-op membership scenarios	Maximum sector shortraker allocation	106*	NA	
	Maximum sector rougheye allocation	360*	NA	
	Maximum sector catch of MRA shortraker and rougheye - aggregate	192**	204	
	Maximum retained catch of shortraker and rougheye			669
Maximum permitted catches under first year co-op memberships	Allocation of shortraker to cooperatives	60		
	Allocation of rougheye to cooperatives	203		
	Maximum MRA catch of shortraker and rougheye - aggregate	41	204	
	Maximum retained catch of shortraker and rougheye			508
Catches in the first year	Total catch of shortraker by cooperatives	44	9	
	Total catch of rougheye by cooperatives	11	10	
	Total catch of shortraker and rougheye by limited access	32		
	Total catch of shortraker and rougheye			106

Sources: NMFS Catch Accounting data and cooperative reports

Notes: MRA amounts assume that allocations of primary species are harvested in their entirety. MRAs limit only retained catch, so maximum catch under an MRA excludes potential discards. Total catch amounts include discards and retained catch.

* Maximum allocation to cooperatives, if all catcher processors join a cooperative.

** Maximum possible MRA catch, if all catcher processors join the limited access fishery.

⁸⁸ For the catcher processor sector, an MRA will apply to Pacific cod harvests that will limit catch to 4 percent of the harvest of target rockfish. In addition, an option would create an MRA for shortraker and rougheye rockfish for catcher vessel sector.

Table 3-18. Maximum permitted catches and actual catch of shortaker and rougheye rockfish in 2008

shtrkrngheye 2008		Catcher processor	Catcher vessels	Total
Maximum permitted catches under various co-op membership scenarios	Maximum sector shortraker allocation	95.0*	NA	
	Maximum sector rougheye allocation	491.0*	NA	
	Maximum sector catch of MRA shortraker and rougheye - aggregate	123.8**	132.5	
	Maximum retained catch of shortraker and rougheye			718.5
Maximum permitted catches under second year co-op memberships	Allocation of shortraker to cooperatives	48.0		
	Allocation of rougheye to cooperatives	251.0		
	Maximum MRA catch of shortraker and rougheye - aggregate	57.8	132.5	
	Maximum retained catch of shortraker and rougheye			489.3
Catches in the second year	Total catch of shortraker by cooperatives	28.7	32.0	
	Total catch of rougheye by cooperatives	6.9	15.0	
	Total catch of shortraker and rougheye by limited access	54.4		
	Total catch of shortraker and rougheye			106.2

Source: NMFS Catch Accounting data

Notes: MRA amounts assume that allocations of primary species are harvested in their entirety. MRAs limit only retained catch, so maximum

* Maximum allocation to cooperatives, if all catcher processors join a cooperative.

** Maximum possible MRA catch, if all catcher processors join the limited access fishery.

In the first year of the rockfish pilot program, catcher processors participated in both cooperatives and the limited access fishery. The choice of some catcher processors to participate in the limited access fishery reduced the permitted retained catch of the two species by over 150 metric tons. Yet, some catcher processors are reported to have been reluctant to join cooperatives because of the potential that the constraining shortaker and rougheye rockfish allocations would limit their ability to harvest primary species. Included in the proposed action is an option to increase the allocation of shortraker to cooperatives from 30.03 percent to 50 percent or to manage shortraker and rougheye rockfish under a combined MRA of 2 percent for catcher processors fishing in a cooperative. This change in the management of shortraker and rougheye rockfish could eliminate any perceived constraint these species' allocations could have on the harvest of the primary species.

Notwithstanding the reluctance of some catcher processors to join a cooperative, during the first two years of the pilot program, total catch of shortraker and rougheye in the limited access was approximately 10 metric tons less than the amount that could be retained under the MRA – substantially less than would have been permitted had these catcher processors elected to participate in cooperatives. In the first year of the program, catcher vessels harvested less than 10 percent of the maximum amount permitted by the MRA, but in the second year the sector's catches increase to almost one-third of the amount permitted by the MRA. Overall, catches of both species under the program's allocations and MRAs during the first two years of the pilot program were less than historical catches in the rockfish fishery (see Table 3-19). In addition catches in the first two years of the program were a relatively smaller portion of the total allowable catch, although the distribution of that catch between the two sectors varied across years. Also, total catches of shortraker rockfish and rougheye rockfish in all fisheries relative to their TACs do not suggest a risk of overharvest in those years (see Table 3-20), but in 2008 catch of shortraker outside of the rockfish fishery increased substantially over historic levels.

Under the first option for modifying management of shortraker, the maximum allocation to catcher processor cooperatives would be increased to 50 percent of the shortraker TAC. In the second year of the program, catches of shortraker by catcher vessels in the rockfish fishery were 10 percent of the TAC,⁸⁹ while catches outside of the program were approximately 50 percent of the shortraker TAC. Both catcher vessel rockfish fishery catches and catches outside of the rockfish fishery reached their highest percentage of the shortraker TAC since management of shortraker was separated from rougheye management in

⁸⁹ This catch of shortraker rockfish effectively equals the maximum percent permitted by the sector prior to managers putting the species on PSC status for the catcher vessels sector (i.e., 9.72 percent).

2005.⁹⁰ At these catch levels, if catcher processors were to receive an increased allocation in the program and all vessels joined cooperatives, catches by non-rockfish fisheries would need to be constrained to prevent overharvest of the shortraker TAC. In all likelihood, managers would put shortraker on PSC status, if needed to limit total catch, to prevent any retention of shortraker in non-rockfish fisheries (and possibly in the catcher vessel sector of the rockfish fishery). In season managers regularly take such actions to manage catches, so such a limitation would not be extraordinary. Although these measures are believed to effectively protect stocks from overharvest, they also can result in discards of the species, an undesirable consequence, especially for a species of concern with a relatively high value, such as shortraker.

Under the second option for shortraker management, all participants in the catcher processor sector would be subject to an aggregate shortraker/rougheye MRA of 2 percent. The reduced MRA would have a few effects on catcher processor cooperatives. First, allowable retention of shortraker would be reduced from the level allowed by the current allocation.⁹¹ Despite this reduction in allowable retention, the risk of being shutdown for fully harvesting the allocation of shortraker (or rougheye) would be removed, as the consequence of catch exceeding an MRA is a discard requirement.

Table 3-19. Total allowable catches and total catches of shortraker rockfish and rougheye rockfish in the Central Gulf rockfish fisheries (2005-2008)

Year	Species	Total allowable catch	Catcher processor sector		Catcher vessel sector		Total	
			Catch (in metric tons)	Percent of the total allowable catch	Catch (in metric tons)	Percent of the total allowable catch	Catch (in metric tons)	Percent of the total allowable catch
2005	Shortraker rockfish	324	127	39	19	6	146	45
	Rougheye rockfish	557	48	9	9	2	57	10
2006	Shortraker rockfish	353	145	41	14	4	159	45
	Rougheye rockfish	608	5	1	30	5	35	6
2007	Shortraker rockfish	353	63	18	4	1	67	19
	Rougheye rockfish	611	19	3	6	1	25	4
2008	Shortraker rockfish	315	57	18	32	10	89	28
	Rougheye rockfish	834	33	4	15	2	49	6

Source: NMFS Catch Accounting.

⁹⁰ Prior to separation of management of the two species, aggregate harvests of shortraker and rougheye outside the rockfish fishery never exceeded 50 percent of the aggregate TAC.

⁹¹ In addition, it is possible that harvests could be limited below the level permitted by the MRA, if overall harvests of shortraker approached the TAC. In which case, shortraker would be put on PSC status, preventing any retention. Allocations of shortraker, such as those currently made to catcher processor cooperatives, are less likely to be constrained, as those allocations would be considered in determining whether to impose PSC status.

Table 3-20. Catches and total allowable catches of shorttraker rockfish and rougheye rockfish in all Central Gulf fisheries (2005-2008)

Year	Shorttraker rockfish			Rougheye rockfish		
	Catch (in metric tons)	Total allowable catch (in metric tons)	Percent of total allowable catch harvested	Catch (in metric tons)	Total allowable catch (in metric tons)	Percent of total allowable catch harvested
2005	223	324	68.8	122	557	21.9
2006	303	353	85.8	134	608	22.0
2007	158	353	44.8	178	611	29.1
2008	244	315	77.5	190	834	22.8

Source: NMFS Catch reports (2005-2008).

Note: Prior to 2005, shorttraker rockfish and rougheye rockfish were managed using an aggregate total allowable catch

No negative effects are expected on halibut PSC under the program alternatives. The program alternatives will be prosecuted with cooperative allocations of halibut mortality. These allocations will constrain halibut bycatch and will prohibit participants in the program from fishing in excess of their halibut allocations. Although some fishing would likely take place out of the traditional July season, mortality will be constrained by the allocations of halibut mortality. Rockfish participants will likely have an incentive to reduce halibut mortality to reduce constraining halibut allocations that could jeopardize cooperative catches. The incentive for halibut mortality reductions is increased by the rollover of saved halibut mortality to other fisheries late in the year, allowing the trawl sector as a whole (including vessels that do not qualify for the new rockfish program) to benefit from these halibut mortality reductions. As a result, rockfish vessels will likely move from areas of high halibut bycatch, participants will continue to communicate with each other concerning catch rates of halibut at different fishing grounds, and vessels will use pelagic gear that limits bottom contact and halibut incidental catch all of which could result in halibut savings being passed on to all trawl vessels operating in the GOA during the final season of each year.

3.4.5 Effects on Stocks of Unallocated Prohibited Species Catch

In the current rockfish fishery, prohibited species harvests are not at levels that raise concern. Fishing patterns are not expected to differ under any of the alternatives (including that status quo and the proposed alternatives) in a manner that will affect prohibited species catch. Consequently, no adverse effects on prohibited species catch are expected under any of the alternatives.

In the GOA, the primary species of concern for trawl salmon bycatch is Chinook (*Onchrohynchus tshawytscha*). Other salmon appear in the trawl bycatch in much smaller numbers than Chinook and generally are not a bycatch concern (NPFMC, 2009). For the period from 2003 through 2008, the average bycatch of salmon for all groundfish trawl fisheries in the GOA was 23,750 (See Table 3-21 below). This is higher than the 1990-2008 average bycatch level 21,308 Chinook.

Most salmon bycatch in the GOA occurs in the CGOA management area. For the period from 2003 through 2007, for example, the average annual bycatch in the GGOA was 20,123 (79 percent of the Chinook bycatch for the entire GOA).

Chinook salmon bycatch in the GOA trawl fishery are harvested from the start of the pollock fishery in January, with the first peak period from mid-February through late March (NPFMC, 2009). The second peak activity period in the bi-modal bycatch pattern for chinook starts around the first of September and extends through the end of October. The first peak bycatch period is well outside of the proposed season

starting date for the rockfish program; therefore, an earlier opening should have little effect on chinook bycatch. The proposed ending dates for the rockfish program extend as late as November 15th, and therefore would encompass the second peak activity period for Chinook bycatch. However, the rockfish trawl fishery is most likely to occur prior to October since fish begin to move into deeper water as temperatures cool. Even if the fishing pattern associated with the rockfish program resulted in continuation of effort into September and October, the overall Chinook bycatch should remain a small portion of the overall trawl bycatch in the GOA due to the relatively small size of the fishery.

Table 3-21. Bycatch of Pacific salmon in GOA groundfish trawl fisheries, by species, 1990-2008

Year	Chinook	'Other' salmon ^a	Chum	Coho	Sockeye	Pink
1990	16,913		2,541	1,482	85	64
1991	38,894		13,713	1,129	51	57
1992	20,462		17,727	86	33	0
1993	24,465		55,268	306	15	799
1994	13,973		40,033	46	103	331
1995	14,647		64,067	668	41	16
1996	15,761		3,969	194	2	11
1997	15,119		3,349	41	7	23
1998	16,941	13,539				
1999	30,600	7,529				
2000	26,705	10,996				
2001	14,946	5,995				
2002	12,921	3,218				
2003	15,358	10,362				
2004	21,447	5,816				
2005	31,207	6,694				
2006	18,816	4,273				
2007	39,733	3,487				
2008	15,939	2,156				
Average 1990–2008	21,308	15,454 ^a				
Average 2003–2008	23,750	4,818				

^a Combines chum, coho, sockeye, and pink salmon.

^b Average combines chum, coho, sockeye, and pink salmon bycatch for 1990-1997.

Source: NMFS catch reports for 1990-2002 (all species) and 2003-2008 (non-Chinook); NMFS catch account PSC data for 2003-2008 (Chinook),

By fishery, the largest portion (73 percent) of the 2003-2007 Chinook salmon bycatch occurred while trawling for pollock (NPFMC, 2009). During that same period, the rockfish fishery averaged 839 Chinook (3 percent of the 25,323 average annual bycatch). Based on this respective contribution to total chinook bycatch, the trawl rockfish fishery appears to have had a very minor role. Even if the rockfish program extends into September and October, the overall level of salmon bycatch is likely to remain low due to the relatively small size of the fishery.

3.4.6 Effects on Stocks of Other Unallocated Species

Fishing pattern are not expected to differ under any of the alternatives (include the status quo and the rockfish program alternatives) in a manner that will affect catch of unallocated species. Consequently, no adverse effects on other unallocated species are expected under any the alternatives.

3.4.7 Effects on Benthic Habitat and Essential Fish Habitat

Status Quo

Under status quo, the rockfish fishery will revert to LLP management and fishing practices are likely to be those in the fishery prior to the rockfish pilot program. At that time, participants concentrated fishing activity both temporally and spatially. Under an LLP managed fishery, each vessel can be expected to race to maximize its harvest rockfish prior to full harvest of the TACs and closure of the fishery. Under a race for fish, many vessels would likely use bottom trawls to harvest rockfish, increasing the impact on habitat. It is possible that some vessels that converted to pelagic and semi-pelagic gear under pilot

program management might continue to use that gear, if they believe they can effectively compete with other vessels in the limited access fishery. Despite a possible increase in the use of bottom gear, effort levels under status quo would be low and would occur in areas considered to have less sensitive habitat (rock, gravel, mud, and sand). As a result, the status quo would have a minimal and temporary effect on benthic habitat and essential fish habitat (NMFS, 2005).

Program Alternatives

Under the program alternatives, rockfish fishing would likely continue to be distributed over a longer season and may disperse spatially, as a result of the removal of time constraints by the cooperative allocations. The relative low effort level of this fishery along slope areas is likely to continue. Concentrations of bottom trawl effort in the Central Gulf rockfish fishery would likely be reduced as trawl vessels continue to move towards pelagic and semi-pelagic trawls to reduce halibut bycatch. The need for catcher vessels to keep short trip lengths to maintain quality is likely to result in some continued concentration in areas proximate to Kodiak harbor. Overall, the rockfish fisheries are likely to continue to have minimal and temporary effects on the habitat. No negative impacts to habitat are likely under the program alternatives.

Reducing some of the benefits of the rockfish program on the GOA habit is the potential for increased GOA bottom trawling due to the rollover of halibut, which extends fishing in the 5th season. Since implementation of the rockfish pilot program, vessels fishing in cooperatives and the limited access fishery have cut halibut mortality rates substantially. The reduction in halibut PSC by rockfish program participants has resulted in rollovers of unused halibut PSC on or about November 15 during the 2007 and 2008 seasons. As a result of these rollovers of unused halibut PSC over the last two years, the GOA trawl groundfish fisheries have remained open for a significantly longer period of time when compared to recent years. In the six years leading up to the rockfish pilot program, the longest 5th season opening was 20 days in 2001. Since implementation of the rockfish pilot program, the 2007 and 2008 seasons remained open for 82 days for each of the two years. This extension of the 5th season in the Central and Western GOA has (and will continue to) increase bottom trawling in fisheries open because of the additional halibut PSC availability. These extended seasons have allowed continued fishing in the shallow water flatfish and Pacific cod fisheries. Assuming these targeting trends continue, habitats in these fisheries are likely to realize some additional impacts. The shallow water flatfish fishery is primarily limited to areas on south and east of Kodiak Island. The habit affected would be sand and sandy silt at depths of 80 to 250 fathoms (NMFS, 2005). The Pacific cod habit most likely to be affected by additional effort would also be in areas south and east of Kodiak, as well as to the east of Sanak Island. The habitat affected would be sand, sandy mud, cobble, and gravel bottoms, at depths of 100 to 600 feet (NMFS, 2005). Studies of habitat effects of fishing gear have found that trawls can alter or remove physical and biological structures, as well as other organisms. These changes may affect the ability of fish to use these areas for prey, shelter from predators, spawning substrate or for other functions (NMFS, 2005). In general, there is some potential an extended 5th season under the program alternatives that could impact the GOA habit of known shallow water flatfish and Pacific cod fisheries when compared to status quo. However, given the effort in these fisheries in other seasons, this effect is believed to be minimal.

3.4.8 Effects on Endangered or Threatened Species

None of the alternatives are expected to have negative impacts on endangered or threatened species beyond those identified in previous consultations under section 7 of the Endangered Species Act. Some spatial and temporal dispersion of rockfish catch could occur under the program alternatives. This change in the distribution of catch is expected to be minor and is not expected to have any affect on any endangered or threatened species.

3.4.9 Effects on Forage Fish

Catch of forage fish is expected to be unaffected by any of the alternatives. Consequently, no impacts on forage fish are expected under any of the alternatives.

3.4.10 Effects on Marine Mammals

Direct and indirect interactions between marine mammals and harvests from the rockfish fisheries are not expected to differ under any of the alternatives, as total catch is expected to be the same under all of the alternatives and the distribution of catch is not expected to differ in a way that will affect interactions.

3.4.11 Effects on Seabirds

Direct and indirect interactions between seabirds and harvests from the rockfish fisheries are not expected to differ under any of the alternatives, as total catch is expected to be the same under all of the alternatives and the distribution of catch is not expected to differ in a way that will affect interactions.

3.4.12 Effects on the Ecosystem

Effects of fishing on the GOA marine ecosystem are analyzed in detail in the Alaska Groundfish Fisheries Programmatic SEIS and Alaska Groundfish Harvest Specifications EIS. Although some temporal and spatial dispersion of catch in the rockfish fisheries could occur under the rockfish program alternatives, none of the alternatives are expected to have a negative effect on the GOA marine ecosystem.

3.4.13 Effects on the Economic and Socioeconomic Factors

Status Quo

Under status quo, the CGOA rockfish fishery would revert to LLP management. Reverting back to LLP management is likely to result in fishing practices and patterns similar to those prior to the pilot program. In that fishery, trawl vessels raced for catch of rockfish when the trawl season opened in July. Typically, Pacific ocean perch was caught first, followed by northern rockfish and pelagic shelf rockfish. The quality of fish harvest would likely suffer from a return to the race for fish. In addition, catcher processors must also process the rockfish rapidly to maintain quality and accommodate additional catch. Modest increase in participation might be expected, if the fishery reverts to LLP management.

Processing participation and practices are likely to be similar to those seen under LLP management prior to implementation of the rockfish pilot program. Catcher processors in the rockfish fisheries prior to the rockfish pilot program produced mostly whole and headed and gutted products, therefore these vessels would likely continue to process catch in similar manner under status quo. Production efficiency for the catcher processors sector would likely be limited slightly by the race for fish under an LLP managed fishery. Although catcher processors process their catch quickly relative to catcher vessels, the quality of harvests could suffer to some extent as participants race to maximize their catch rates. Diminishing quality dissipates a portion of the resource rents that would otherwise be available.

Production efficiency of catcher vessels under status quo would also be limited by the short, race for fish that will result under status quo. Increasing catch in each tow and filling holds can damage rockfish that are difficult to handle. Status quo would also likely extend trip lengths to increase catch per trip which can result in a decline in the quality of rockfish. Returns to catcher vessels under status quo would likely be limited both by the quality of their landings and the compressed time period in which those landings must be made. Most processors would likely process deliveries quickly to keep pace with the landings. These conditions could dampen competition for landings among the participating processors to some extent. Quality would likely suffer because of the rapid rate of harvest and processing, which would likely lead to the production of relatively lower value and lower quality products. Efficiency, both technical and

allocative, in the processing sector would suffer, as lower value products of lesser quality are likely to be produced in greater quantities. Technical efficiency would also be lost, as crews scale up for a short period of time to accommodate the rapid pace of landings during the brief season.

Consumers are likely to be supplied with products from the rockfish fishery similar to those supplied prior to pilot program. Catcher processors are likely to produce high quality frozen headed and gutted and whole fish. Production from catcher vessel catch is likely to suffer from poor handling.

Crew participation and compensation would likely revert to what it was before implementation of the rockfish pilot program. During that time, most crewmembers worked in several different fisheries on the vessel that they worked on during the rockfish season, while some moved to other vessels for particular fisheries. Crew members' compensation would likely revert to receiving a specific percent of the vessel's revenues.

For shore based processing crew, status quo would result in similar processing practices seen before implementation of the pilot program. During that period, most of the processing took place in Kodiak and was undertaken by resident crews. Crews were employed processing rockfish for a relatively short period of time. When rockfish was processed, relatively large crews were necessary to maintain a flow of fish through the plants. Because the fishery coincided with the pink salmon fishery, some plants employed substantially larger crews that were juggled between lines to process landings from both fisheries.

Catcher Processor Sector - Cooperative Only – CP-2

Under this alternative, eligible catcher processors could either join a cooperative or not participate in the Central Gulf rockfish fisheries. Within each cooperative, it is anticipated that each member would receive revenues based on the allocation that the person brings to the cooperative, with participants that fish shares of others receiving compensation for their fishing expenses. Persons eligible for the program that receive relatively small allocations could either choose to join a cooperative to allow other members of the cooperative to fish their allocations or choose to opt-out of the program for the year, forgoing the opportunity to fish CGOA rockfish. Other members of the sector could decide to consolidate their rockfish allocations to realize efficiencies in the rockfish fisheries and other fisheries. Whether some or all of these vessels would choose to remain out of cooperative cannot be predicted, and depends on their opportunity in other fisheries.

Allocations of secondary species should not constrain harvests of target rockfish, unless the rates of incidental catch of secondary species in the rockfish fishery change substantially. Cooperatives should prove useful for addressing any constraints arising from the secondary species allocations, given that cooperatives would allow for the redistribution of secondary species allocations among cooperative members. One factor some sector participants have sighted as creating an incentive for not joining cooperatives under the existing pilot program is the shorttraker rockfish allocation. Included in the proposed action is an option to increase the allocation of shorttraker to cooperatives from 30.03 percent to 50 percent or to manage shorttraker and roughey rockfish under a combined MRA of 2 percent for catcher processors fishing in a cooperative. It is possible that one of these suggested changes could eliminate any perceived constraint these species allocations have on the harvest of the primary species.

Processing by catcher processors under this alternative is likely to remain similar to the current (pilot program) processing by this sector. Most vessels in the sector are equipped for producing a few simple products (frozen whole and headed and gutted fish). Because of size limitations, it is unlikely that any of these vessels will change plant configurations to process higher-valued, more processed products. Although catcher processors product mix may not change from the status quo under this alternative, it is possible that some improvement in quality may be made by some participants. Generally, catcher

processors produce a relatively high quality product, so the ability to make quality improvements may be limited. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian consumers, as most of the production from this sector is sold into that market.

The primary efficiency gains in the catcher processor sector under this alternative will result from improvements in technical efficiency. Allocative efficiency gains are unlikely to occur since vessels participating in this sector are equipped to produce only whole and headed and gutted products and are unlikely to reconfigure for different production outputs. Technical efficiency gains should occur as participants are able to slow the pace of fishing and processing. In the slower fishery, participants may be able to reduce expenditures on inputs to some degree (possible scaling down crews slightly) and increasing outputs slightly (with less loss due to diminished quality). Additional technical efficiencies could arise because of the cooperative structure of the alternative. In a cooperative, participants will be free to consolidate fishing up to the 60 percent harvest cap. Consolidating catch on fewer vessels in the fishery could also reduce aggregate harvest costs.

Specific sideboard provisions include a limit on West Yakutat pelagic shelf rockfish, Pacific ocean perch, and Western GOA pelagic shelf rockfish, Pacific ocean perch, and northern rockfish. There would also be a limit halibut PSC to constrain harvest from fisheries that are typically halibut constrained. In addition, catcher processors that elect to fish in the limited access fishery (CP-3) that have in excess of 5 percent of the sector's qualified catch of Central GOA Pacific ocean perch are subject to additional limits from July 1 until 90 percent of the Central GOA Pacific ocean perch that is allocated to the catcher processor limited access fishery has been harvested. For qualified participants that choose to opt-out of the rockfish program, they would be prevented from participating in any directed fishery that the license holder did not participate in during the first week of July in at least two of seven qualifying periods.

Complicating the rockfish program sideboards for the catcher processor sector are Amendment 80 sideboards. Implemented in 2008, Amendment 80 program includes sideboards for pollock, Pacific cod, Pacific ocean perch, northern rockfish, pelagic shelf rockfish, and halibut PSC for the same catcher processor fleet that would likely be limited by sideboards in the new rockfish program. Amendment 80 GOA sideboards appear less restrictive relative to the proposed rockfish program sideboards, but rockfish program sideboards would apply only for the month of July, while the Amendment 80 sideboards apply all year. Given that both rockfish program sideboards and Amendment 80 sideboards are based on historical retained catch by the sector, it is likely that both sideboards are constraining of fishing effort in a similar fashion. Given that rockfish program and Amendment 80 sideboard limits would likely curtail the same catcher processor fleet from encroaching on other fisheries, it is likely that having both sets of sideboards would only duplicate management costs and increase the complexity of the sideboard fisheries with no added benefit.

Catcher Processor Sector - Cooperative or Limited Access – CP-3

This alternative differs from the cooperative only alternative only in that eligible catcher processors may choose to participate in a limited access fishery (instead of a cooperative). The catcher processor limited access fishery will be managed in a manner similar to the pilot program limited access fishery. Under the pilot program, several vessels have registered for the limited access fishery, with only a few vessels participating. As a result, no race for fish has developed. Instead participants have coordinated catch during allowing each to harvest an agreed share. Since most of the limited access vessels are members of a common cooperatives in the Bering Sea, it is possible that some vessels registered for the limited access that do not participate have chosen to register for the limited access to benefit their Bering Sea cooperative associates (rather than see their allocations redistributed among the rockfish cooperatives). As a result of these arrangements, the limited access fishery has functioned more like a cooperative than a limited access fishery. Limited access registered vessels, however, cannot begin harvests prior to the early July

opening and, under sideboards, cannot fish in other fisheries in early July until a large portion of the rockfish harvests are made. These limitations are intended to prevent encroachment of vessels in those other fisheries.

Processing by catcher processors under this alternative is likely to be the same as under the previous alternative where catcher processors will continue to produce a relatively high quality product, so the ability to make quality improvements may be limited. Catcher processors would likely to realize similar gains in production efficiency as the cooperative only alternative, with differences arising from the ability to participate in the limited access fishery. Catcher processors may receive a benefit under this alternative, if the MRA management in the limited access fishery removes a harvest constraint that would have affected vessels fishing in a cooperative. To date in the pilot program, no constraint appears to have arisen. Alternatively, periodic losses in efficiency could result under this alternative, if a race for fish develops in the limited access fishery.

Catcher Vessel Sector - Harvester Only Cooperative – CV-2

Under this alternative, eligible harvesters would receive exclusive allocations that can be accessed through cooperatives. These cooperatives will have the flexibility to make deliveries to any processor, which should ensure that harvester delivery preferences are recognized. It is possible that a harvester might make concessions to a processor in choosing delivery dates, but these concessions are likely to be compensated. Cooperatives will have the flexibility of delivering to multiple processors allowing the opportunity to choose fishing timing. Despite this flexibility, it is likely that established relationships will have an important influence on harvester delivery choices and cooperative membership (at least at the outset of the program). Over time, changes in delivery patterns may change as harvesters perceive better opportunities with other processors.

The structure of the market for landings would likely be competitive under this alternative, increasing the incentive for processors to aggressively pursue product improvements to attract additional landings. This competition should resolve delivery terms, including the timing of landings to accommodate processing schedules. This timing of landings could be critical to processors meeting some market demands, particularly if a fresh market were to develop.

Under this alternative, the ability to coordinate harvest activity and remove vessels from the fleet without loss of harvest share, together with a relative improvement in bargaining strength arising from no processor protection on processor entry should result in substantial improvements in harvest sector efficiency over the status quo. Fishing will be slowed, as cooperatives receive exclusive allocations. Technical efficiency in processing should improve as processors are better able to schedule crews to process landings. Allocative efficiency should also increase as processors improve product quality and produce higher quality products that cannot be produced under status quo management, because of the relatively low quality of landings and the need to process those landings rapidly. However, processors may experience little improvement in their overall efficiency under this alternative because of their relatively weak negotiating position in the market for landings.⁹² Instead, cooperatives (and their catcher vessel fleets) should receive most of the benefits of these improvements through ex vessel price negotiations. Notwithstanding the relatively strong position fishermen may have under this alternative, processors should obtain normal profits from their processing, and in some cases may be able to use relationships in other fisheries to leverage their negotiating position.

⁹² Although an option could require all landings to be made in Kodiak, since that community is home to several processors, it is unlikely that the limitation of landings to Kodiak would affect the degree of competition in the fishery.

All of the catcher vessel alternatives include an option for an individual use cap of between 3 and 5 percent of the catcher vessel shares. Under the various qualifying year options and proposed caps, a maximum of 14 license holders could be constrained by the individual use cap at the initial allocation. Given that between 42 and 50 license holders would be allocated primary rockfish depending on the qualifying years, between one-quarter and more than one-half of those license holders could leave the fishery before all owners reach the 3 percent cap. Another option considered in all of the catcher vessel alternatives would establish a cooperative use cap of 30 percent of the catcher vessel harvest share pool. The provision will prevent harvests from forming cooperatives beyond the cap of the threshold, which may prevent consolidation within cooperatives that could be detrimental to marginal processors in the fishery.

A vessel use cap of between 4 and 10 percent is also being considered for the catcher vessel alternatives. As many as 12 vessels in the catcher vessel sector have historically harvested more than 4 percent of the sector's total catch in a given year. Few vessels have historically exceeded the proposed 8 percent cap and in only one year did any vessels exceed the 10 percent cap. Finally, a processing cap of 20, 25, 30, or 33 percent is being considered for the catcher vessel alternatives. A processing cap would ensure that no processor purchases over the specific share of the landings in the fishery. Overall, processing caps would reduce production efficiency to the extent that competition for landings is decreased. Harvesters in the fishery would receive a lower price for landings to the extent that competition is constrained. This reduction in competition could, in turn, reduce the incentive for processors to improve products and enhance marketing efforts to maintain their competitiveness in product markets. Processors could derive a benefit from this provision to the extent that ex vessel price reductions occur, but those benefits will not necessarily accrue to historic processors.

The Council motion contains an option add a port delivery requirement for allocations of the primary and secondary species to the catcher vessel sector. The port delivery requirement is intended to protect the community of Kodiak from changes in the location of shore based processing activities that could occur in the rockfish program. If adopted, this option would ensure that Kodiak remains the processing base for the fishery and that Kodiak processors and the community continue to benefit from the fishery.

As would be applied to catcher processors, a general sideboard would limit catcher vessel participants, in the aggregate, to their historic harvests in other fisheries during the month of July. Given that NOAA Fisheries would likely close the WGOA and WYAK rockfish fisheries and the deep water complex to directed fishing for the catcher vessel sector due to insufficient catch history, prohibiting eligible catcher vessel license holders from directed fishing in these fisheries would likely reduce management costs, observer costs to the sector, and simplify sideboard regulations for the rockfish program.

Catcher Vessel Sector – Allocation of Harvester Shares to Processors – CV-3

Under this alternative, eligible processors would receive allocations of harvest shares from the catcher vessel harvest share pool under alternative. Allocations of target rockfish would be divided between eligible harvesters and eligible processors, with eligible processors receiving 10, 20, or 30 percent of the sector's pool of all allocated species based on processing in the fisheries during the qualifying period. In general the processors receiving these allocations will receive the resource rents associated with that allocation.

Catcher vessel efficiency gains under this alternative are likely to be different, with resource rents divided between catcher vessels and processors based on the division of the harvest share allocation between these sectors (i.e., 90/10, 80/20, or 70/30). The returns to participants in the catcher vessel sector may vary slightly depending on the approach taken by holders of processor allocations in using their harvester shares. These different methods are likely to result in a similar distribution of resource rents, but may

result in slightly different distributions of normal profits and operation levels of independent harvesters. If a processor elects to harvest its allocation on its own (or an affiliated vessel), the processor would receive resource rents and normal profits from the harvest annually.⁹³ If a processor elects to sell its allocation (i.e., long term share), the processor would receive the resource rents embodied in the allocation at the time of the sale. The purchaser would assume the risk associated with the allocation and gain any normal profits from the harvest of the shares over the long term. If a processor enters an arm's length lease for its allocation (or the annual allocation yielded by its allocation), it would receive the annual rents embodied in the allocation at the time of each lease, with the lessee gaining normal profits from the year's harvest. Lastly, a processor may use its shares as part of a broader negotiation with a cooperative (or vessels in a cooperative) to establish a relationship that extends to all (or a large segment of) the landings of the cooperative.

Under this alternative, processors that receive an allocation of harvest shares are likely to realize substantially greater benefits from the fishery, than under the other catcher vessel alternatives. This benefit would be derived from the share allocation, as opposed to operational efficiencies, as this alternative is likely result in similar operational efficiencies as other cooperative alternatives. Processors will have several choices for using their shares, including selling their long term shares, leasing annual allocations, and (in some cases) harvesting annual allocations on affiliated vessels. In most cases, it is likely that these processors will use their allocations. While each of these will bring the share holder the resource rent arising from the shares, it is likely that most processors holding harvest shares will negotiate the harvest of their allocations with cooperatives to gain additional landings and coordinate its processing activity in the fishery.

In addition to the many different caps included in the catcher vessel alternatives, this alternative would include an additional limit on processor holdings of harvest shares. Under one option, the general harvest share limits could be applied to all holdings, effectively constraining harvest share holdings. It is possible under this option that all processors initially allocated harvest shares could exceed the cap. A grandfather provision could allow these processors to maintain holdings on the allocation. A second option would establish a 10 percent use cap on processor holdings. If processors receive only 10 percent of the harvest share pool in the initial allocation, it would be possible for a single processor to acquire all of those shares, if the use cap is set at 10 percent. With the exception of a limit on processor holding of harvest shares, the effects of excessive share limits and sideboards noted in CV-2 would also apply to this alternative.

The specific effects of the processor allocations will also depend, in part, on the rules governing their use and transfer. A holder of quota shares originally allocated to a processor would be permitted to divide those quota shares on transfer. In addition, three options defining persons eligible to acquire shares have been proposed. The first option would qualify processors that meet a minimum processing threshold in the fishery to acquire these shares. The second option would allow processors receiving an initial allocation of shares to acquire additional shares. In general, opportunities for processor acquisition of shares are likely to be few. The third option would allow any qualified license holder to acquire shares initially allocated to a processor. Unless a processor is exiting the fishery, it is unlikely that a processor would wish to sell its shares to a possible processing competitor (or harvester). It is also likely that, if a processor were to exit, it would attempt to sell its entire operation, including any shares. This type of a transfer is unlikely to change the processing market, except when a plant is bought by a competitor who is consolidating processing. Depending on the excessive share cap, processors may not be permitted to consolidate in this manner.

Catcher Vessel Sector – Cooperative with Severable Processor Association (no forfeiture) – CV-4

⁹³ These profits might be captured only after sale of finished products by the processors.

Under this alternative, a cooperative would be required to annually associate with a processor to access its allocation. Harvester will have full discretion to choose a cooperative initially and may freely move among cooperatives annually thereafter. In addition, cooperatives are free to associate with any processor in the community in any year without forfeiture or penalty. The terms of the cooperative agreement, and consequently, the cooperative/processor association are subject to negotiation between the cooperative members and the processor. Given the flexibility of the harvesters to move among cooperatives and cooperatives to change associations, it is likely that any limitation established under the terms of an association (such as delivery requirements or terms) will be fully voluntary and harvesters will receive compensation for any concessions. Long term relationships and relationships in other fisheries are likely to be important factors that affect cooperative and processor association choices.

While some cooperatives may use the processor association to establish delivery relationships, it is possible that some cooperatives may minimally comply with the requirement by establishing a relationship on paper, but maintaining no operating relationship. With unlimited choice in processor associations, such an arrangement is plausible. In this case, the cooperative would be free to deliver to any processor and negotiate delivery arrangements independent of the processor association requirement.

It is expect that processors will pursue markets and production opportunities, to establish and maintain annual associations and to attract deliveries. Historic relationships will likely influence the formation of cooperative/processor associations, but these relationships are likely to be tested, if a processor fails to compete in product markets (or fails to match others' ex vessel prices).

Overall, the ability to coordinate harvest activity, together with a relative improvement in bargaining strength arising from no direct processor allocation, should result in substantial improvements in harvest sector efficiency over the status quo.

The effects of excessive share limits and sideboards noted in CV-2 and CV-3 would also apply to this alternative.

Entry Level Trawl/fixed Gear Fisheries – EL-2

Under this alternative, 5 percent of each of the target rockfish species is set aside for the entry level fisheries. This set aside is divided between the trawl and fixed gear sectors. With fixed gear vessels taking less than one percent of the TAC of any rockfish species historically, it is unlikely that the fixed gear allocation will constrain that fleet. To reduce the potential for the fixed gear allocation to go unharvested, that TAC is available for harvest by entry level trawl vessels late in the year.

The trawl allocation would be available for harvest by all applicants for the entry level program. Despite the large number of persons eligible for the fishery, the trawl fishery could draw few applicants as the allocation is relatively small and few potential participants have experience in the fishery. Given the potential for relatively small allocations to the fishery (approximately 350 tons of Pacific ocean perch), the ability of NOAA Fisheries to effectively manage the trawl portion of the entry level fishery could be limited, if a substantial number of applicants for the entry level trawl fishery are receive. If several vessels enter the fishery, it is likely that managers would have to close the fishery or use short openings of 24 hours or less. Management of the small allocation to trawl vessels in the entry level fishery is likely to be problematic under this alternative.

Entry Level Fixed Gear Only Fishery – EL-3

Under this alternative, only fixed gear sector would receive an entry level allocation of the primary rockfish species. The starting entry level set aside under this alternative would be between 1 and 10

metric tons of Pacific ocean perch, between 1 and 10 metric tons of northern rockfish, and between 10 and 30 metric tons of pelagic shelf rockfish.

Limiting the entry level fishery to non-trawl only and reducing the set aside for the non-trawl fishery would resolve complications associated with the entry level trawl fishery. Not including trawl participants in the entry level fishery eliminates the potential for that trawl effort to result in the TAC being exceeded. Reducing the set aside for the non-trawl CGOA rockfish could also reduce stranded CGOA rockfish TAC. Historically, non-trawl vessels have very minimal participation in the CGOA target rockfish fisheries. However, allocations less than 5 metric tons for Pacific ocean perch and northern rockfish could be very difficult to manage, so NOAA Fisheries would likely close those entry level fisheries. To avoid closures in the entry level program prior to the season opening, the Council would have to select Pacific ocean perch and northern rockfish allocations greater than or equal to 5 metric tons.

Included in the alternative is ability to expand the fixed gear entry level allocation as harvests increase. If the fixed gear entry level participants harvest 90 percent or more of their allocation of a rockfish species in a year, the set-aside would be increased by the amount of the initial allocation of the species. Allocation increases would be capped at a maximum of between 1 and 5 percent of Pacific ocean perch TAC, between 2 and 5 percent of northern rockfish TAC, and between 2.5 and 5 percent of pelagic shelf rockfish TAC. Overall, the use of a relatively small starting fixed gear allocation (more in line with historic catches) and a mechanism for increasing the allocations with growth in the sector could help prevent stranding a portion of the TAC, which would occur, if the allocation to the fixed gear sector was disproportionate to their catches.

A more detailed summary of the economic and socioeconomic impacts of the alternatives is contained in the Regulatory Impact Review in 2 above.

3.4.14 Effects on environmental justice

Under status quo, the management of the rockfish fishery would revert back to LLP management. Prior to implementation of the rockfish pilot program in 2007, there were no negative impacts on minority or low income populations identified. As a result, it is expected there would be no negative impacts on minority or low income populations if management reverted back to LLP management.

Under the rockfish program alternatives, some consolidation of fishing activity could occur in the rockfish fisheries despite already under cooperative management. This consolidation could affect income for participants on vessels that no longer participate in the rockfish fishery. However, this consolidation is unlikely to result in the removal of vessels from all fisheries and could lead to some of the vessels that leave the rockfish fisheries increasing their activities in other fisheries (to the extent permitted by sideboard limitations and cooperative agreements). As a result, the impacts to vessel owners and crewmembers may not be negative, even if rockfish fishing activity decreases. In addition, the degree to which any impacts will affect minority or low-income vessel owners or crewmembers cannot be determined because demographics of vessel owners and crewmembers are not available. If employment and vessel ownership of Kodiak resident owned vessels mirrors the local population, a substantial number of minority crew could be affected by this action. The overall effect of the action, however, is likely to be beneficial, as returns from the fishery are expected to improve. In addition, the program is likely to provide some additional stability to crew employment in the fishery.

Kodiak based processing crews, which include a substantial number of minority employees, are also likely to be affected by this action. In general the affects of the rockfish program alternatives are expected to be beneficial to those workers. The rockfish program alternatives are likely to continue the distribution of landings over a longer period of time, particularly when shore plants are not processing catch from

other fisheries. This distribution of landings could result in a loss of some seasonal positions, but will also result in greater stability for crews that are year round processing workers. This additional stability in employment is likely to benefit the minority populations that are employed by the processing facilities.

3.4.15 Cumulative Effects

This section describes the cumulative effects of the various alternatives. Cumulative effects of an alternative are the impacts on the environment resulting from the incremental effect of the alternative when added to other past, present, or reasonably foreseeable future actions (RFFA). The past and present actions are described in several documents and are incorporated by reference. These include PSEI (NMFS 2004), the EFH EIS (NMFS 2005) and the harvest specifications EIS (NMFS 2007a). This analysis provides a brief review of the RFFA that may affect environmental quality and result in cumulative effects. Future effects include harvest of federally managed fish species and current habitat protection from federal fishery management measures, harvests from state-managed fisheries and their associated protection measures, efforts to protect endangered species by other federal agencies, and other non-fishing activities and natural events.

The most recent analysis of RFFAs for the groundfish fisheries is in the Harvest Specifications EIS (NMFS 2007a). No additional RFFAs have been identified for this proposed action. The RFFAs are described in the Harvest Specifications EIS section 3.3 (NMFS 2007a), are applicable for this analysis, and are incorporated by reference. A summary table of these RFFAs is provided below (Table 3-22). The table summarizes the RFFAs identified applicable to this analysis that are likely to have an impact on a resource component within the action area and timeframe. Actions are understood to be human actions (e.g., a proposed rule to designate northern right whale critical habitat in the Pacific Ocean), as distinguished from natural events (e.g., an ecological regime shift). CEQ regulations require a consideration of actions, whether taken by a government or by private persons, which are reasonably foreseeable. This is interpreted as indicating actions that are more than merely possible or speculative. Actions have been considered reasonable if some concrete step has been taken toward implementation, such as Council recommendation or the publication of a proposed rule. Actions simply “under consideration” have not generally been included because they may change substantially or may not be adopted, and so cannot be reasonably described, predicted, or foreseen. Identification of actions likely to impact a resource component within this action’s area and time frame will allow the public and Council to make a reasoned choice among alternatives.

Table 3-22. Reasonable foreseeable future actions

Ecosystem-sensitive management	<ul style="list-style-type: none"> Increasing understanding of the interactions between ecosystem components, and on-going efforts to bring these understandings to bear in stock assessments, Increasing protection of ESA-listed and other non-target species components of the ecosystem, Increasing integration of ecosystems considerations into fisheries decision-making
Fishery rationalization	<ul style="list-style-type: none"> Continuing rationalization of Federal fisheries off Alaska, Fewer, more profitable, fishing operations, Better harvest and bycatch control, Rationalization of groundfish in Alaskan waters, Expansion of community participation in rationalization programs
Traditional management tools	<ul style="list-style-type: none"> Authorization of groundfish fisheries in future years, Increasing enforcement responsibilities, Technical and program changes that will improve enforcement and management
Other Federal, State, and international agencies	<ul style="list-style-type: none"> Future exploration and development of offshore mineral resources Reductions in United States Coast Guard fisheries enforcement activities Continuing oversight of seabirds and some marine mammal species by the USFWS Expansion and construction of boat harbors Expansion of State groundfish fisheries Other State actions Ongoing EPA monitoring of seafood processor effluent discharges
Private actions	<ul style="list-style-type: none"> Commercial fishing Increasing levels of economic activity in Alaska's waters and coastal zone

RFFA s that may affect target and prohibited species are shown in Table 3-22. Ecosystem management, rationalization and traditional management tools are likely to improve the protection and management of target and prohibited species and are not likely to result in significant effects when combined with the direct and indirect effects of the proposed action. The Council is pursuing a replacement program for the rockfish pilot program that retains to the extent practicable conservation, management, safety, and economic gains created by the pilot program. Other government actions and private actions may increase pressure on the sustainability of target and prohibited fish stocks either through extraction or changes in the habitat, but it not clear that these would result in significant cumulative effects. Any increase in extraction of target species would likely be offset by federal management. These are further discussed in Sections 4.1.3 and 7.3 of the Harvest Specifications EIS (NMFS 2007a).

4 Consistency with other Applicable Laws

This section of the analysis examines the consistency of the rockfish program alternatives with respect to the National Standards and Fishery Impact Statement requirements in the Magnuson-Stevens Act and Executive Order 12866.

4.1 National Standards

Below are the ten National Standards as contained in the Magnuson-Stevens Act, and a brief discussion of the consistency of the proposed alternatives with each of those National Standards, as applicable.

National Standard 1

Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery.

Nothing in the proposed alternatives would undermine the current management system that prevents overfishing. The proposed alternatives would result in annual allocations to cooperatives. Under status quo, management would be to a specified TAC, which can prove difficult. Managers would attempt to regulate harvests to the TAC by timing the closure of the fishery with the harvest of the rockfish TAC. The use of annual allocations to cooperatives would likely result in catch levels that are closer to the specified TACs in the fisheries.

National Standard 2

Conservation and management measures shall be based upon the best scientific information available.

The analysis draws on the best scientific information that is available concerning the CGOA rockfish fisheries. The most up-to-date information that is available has been provided by the managers of these fisheries, as well as by members of the fishing industry.

National Standard 3

To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The various stocks that are affected by this action are each managed as separate stocks. All interrelated stocks are managed as a unit or are managed in close coordination.

National Standard 4

Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocations shall be (a) fair and equitable to all such fishermen, (b) reasonably calculated to promote conservation, and (c) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The proposed alternatives would treat all participants in the rockfish fisheries the same, regardless of their residences. The allocations in the fisheries would be based on historical catch in the fisheries without discrimination among participants.

The total annual allocation in each fishery will be based on the fishery management plan that is developed to promote conservation of the resource. Any changes in a fishery, as a result of the new rockfish program, that impact conservation of the source will be taken into account when setting the TACs in a year. No changes are expected.

Limits on cooperative holdings, individual holdings or usage of allocations, and processing would prohibit any individual from acquiring an excessive share of harvest privileges or controlling an excessive share of processing in the fisheries.

National Standard 5

Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

The rockfish program alternatives are thought to improve the efficiency of utilizing the CGOA rockfish resources. Under a race for fish in the rockfish fishery, it is generally understood that both the harvest and

processing sectors would operate in an inefficient manner in comparison to a limited access privilege program. While the allocation of quota under all of the rockfish program alternatives would have economic consequences, the primary goals are to maintain or increase efficiency and equitably distribute interests in each of the fisheries. Additional benefits would continue to be realized through the direct allocation of catch of eight species under the continuation of the program. No discards of these species would be permitted, which should have the effect of allowing more precise management of catch and could contribute to further reductions in bycatch and discards.

National Standard 6

Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

Under all of the rockfish program alternatives, changes in the availability of the rockfish fishery resources each year would be addressed through changes in annual allocations. These changes in allocations will be used to ensure conservation of the resource in the future.

National Standard 7

Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

The rockfish program alternatives would, in general, continue the existing allocation of quota and cooperative management of the CGOA rockfish fisheries and would not duplicate any other laws. The costs of managing the fisheries under the new program would likely remain similar to those that occur in the rockfish pilot program.

National Standard 8

Conservation and management measures shall, consistent with conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities.

Implementing the new rockfish program alternatives is likely to have continued positive impacts on fishing communities. As a result of the rockfish pilot program, it is generally understood that rockfish communities have enjoyed increased efficiency. Quality of CGOA rockfish landings and products has improved as participants in both sectors have maximized production of harvest quota shares. Community participation in the fisheries is unlikely to change under the new rockfish program alternatives. Kodiak has historically been home to processors that have processed almost all of the rockfish landings. Under the new rockfish program alternatives, this should continue.

National Standard 9

Conservation and management measures shall, to the extent practicable, (a) minimize bycatch, and (b) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

The continued allocations of four or five species (depending on the sector) in addition to the target rockfish species should continue to maintain reduced bycatch or in some instances lower bycatch. Full retention of these species will be required, with the allocation operating as a hard cap, which requires participants to stop fishing when any allocation is fully harvested. This measure should continue to keep bycatch low or even lower the bycatch. In addition, limited access privileges should continue the ability of the crews to handle bycatch carefully to decrease bycatch mortality.

National Standard 10

Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

The rockfish program alternatives should maintain the incentives for rockfish fishermen to fish in inclement weather or fish in a manner that compromises safety. The removal of time pressures of the race for fish that would likely occur under status quo, could reduce fishing activity in bad weather and could improve safety in the fisheries.

4.2 Section 303(a)(9) – Fisheries Impact Statement

Section 303(a)(9) of the Magnuson-Stevens Act requires that any management measure submitted by the Council take into account potential impacts on the participants in the fisheries, as well as participants in adjacent fisheries. The impacts of the rockfish program alternatives on both participants in the rockfish fisheries and participants in other fisheries have been discussed in previous sections of this document. Under the program alternatives, rockfish allocations to cooperatives would be based on historical participation of eligible members of the cooperative. Persons without the qualifying history necessary to receive allocations could be negatively impacted.

Less obvious impacts from the rockfish program alternatives could accrue to participants in adjacent fisheries. The impacts would be in terms of “spillover” effects as rockfish fishery participants with limited access privileges are able to increase effort in other fisheries. To limit rockfish program participants to historic catch in adjacent fisheries, the rockfish program includes sideboard limitations. These sideboard limits should mitigate any negative spillover impacts in adjacent fisheries.

5 Regulatory Flexibility Analysis

5.1 Introduction

The Regulatory Flexibility Act (RFA), first enacted in 1980, and codified at 5 U.S.C. 600-611, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: 1) to increase agency awareness and understanding of the impact of their regulations on small business; 2) to require that agencies communicate and explain their findings to the public; and 3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts, while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must either, (1) “certify” that the action will not have a significant adverse effect on a substantial number of small entities, and support such a certification declaration with a “factual basis”, demonstrating this outcome, or, (2) if such a certification cannot be supported by a factual basis, prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities.

Based upon a preliminary evaluation of the proposed pilot program alternatives, it appears that “certification” would not be appropriate. Therefore, this IRFA has been prepared. Analytical requirements for the IRFA and FRFA are described below in more detail.

The IRFA must contain:

1. A description of the reasons why action by the agency is being considered;
2. A succinct statement of the objectives of, and the legal basis for, the proposed rule;
3. A description of, and where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
4. A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
5. An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule;
6. A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes, and that would minimize any significant adverse economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:
 - a. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
 - b. The clarification, consolidation or simplification of compliance and reporting requirements under the rule for such small entities;
 - c. The use of performance rather than design standards;
 - d. An exemption from coverage of the rule, or any part thereof, for such small entities.

The “universe” of entities to be considered in an IRFA generally includes only those small entities that can reasonably be expected to be directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment of the industry, or portion thereof (e.g., user group, gear type, geographic area), that segment would be considered the universe for purposes of this analysis.

In preparing an IRFA, an agency may provide either a quantifiable or numerical description of the effects of a proposed rule (and alternatives to the proposed rule), or more general descriptive statements if quantification is not practicable or reliable.

5.1.1 Definition of a small entity

The RFA recognizes and defines three kinds of small entities: 1) small businesses; 2) small non-profit organizations; and 3) and small government jurisdictions.

Small businesses: Section 601(3) of the RFA defines a “small business” as having the same meaning as a “small business concern,” which is defined under Section 3 of the Small Business Act. A “small business” or “small business concern” includes any firm that is independently owned and operated and not dominate in its field of operation. The U.S. Small Business Administration (SBA) has further defined a “small business concern” as one “organized for profit, with a place of business located in the United States, and which operates primarily within the United States, or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials, or labor. A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust, or cooperative, except that where the form is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture.”

The SBA has established size criteria for all major industry sectors in the U.S., including fish harvesting and fish processing businesses. A business “involved in fish harvesting” is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates), and if it has combined annual receipts not in excess of \$3.5 million for all its affiliated operations worldwide.

A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation (including its affiliates) and employs 500 or fewer persons, on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the \$3.5 million criterion for fish harvesting operations. A wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

The SBA has established “principles of affiliation” to determine whether a business concern is “independently owned and operated.” In general, business concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party controls or has the power to control both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party, with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern’s size. However, business concerns owned and controlled by Indian Tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805 are not considered affiliates of such entities, or with other concerns owned by these entities, solely because of their common ownership.

Affiliation may be based on stock ownership when: (1) A person is an affiliate of a concern if the person owns or controls, or has the power to control 50% or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock, or (2) If two or more persons each owns, controls or have the power to control less than 50% of the voting stock of a concern, with minority holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern.

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors, or general partners control the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint venturers if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations: The RFA defines “small organizations” as any nonprofit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions: The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of fewer than 50,000.

5.2 A description of the reasons why by the agency is being considered

Recognizing the management, economic, safety and conservation gains created by the Rockfish Pilot Program, the Council developed a problem statement defining its purpose for development of a new CGOA rockfish program:

The intent of this action is to retain the conservation, management, safety, and economic gains created by the Rockfish Pilot Program to the extent practicable, while also considering the goals and limitations of the Magnuson-Stevens Fisheries Conservation and Management Act Limited Access Privilege Program (LAPP) provisions.

The existing CGOA Rockfish Pilot Program (RPP) will sunset after 2011. Consequently, if the management, economic, safety and conservation gains enjoyed under the RPP are to be continued, the Council must act to create a long term CGOA rockfish LAPP. For both the onshore and offshore sectors, the RPP has improved safety at sea, controlled capacity of the fleets, improved NMFS' ability to conserve and manage the species in the program, increased vessel accountability, reduced sea floor contact, allowed full retention of allocated species and reduced halibut bycatch. In addition, the rockfish fishery dependent community in the CGOA and the shorebased processing sector have benefited from stabilization of the work force, more shoreside deliveries of rockfish, additional non-rockfish deliveries with the RPP halibut savings, and increased rockfish quality and diversity of rockfish products. Moreover, the CGOA fishermen, and the shorebased processing sector have benefited from the removal of processing conflicts with GOA salmon product. The Council needs to resolve identified issues in the management and viability of the entry level fishery.

The portion of the current catcher processor sector currently participating in the rockfish coop have also benefitted from the RPP. These benefits include greater spatial and temporal flexibility in prosecuting the fishery, which result in lower bycatch, a more rational distribution of effort and more stable markets. Certain provisions of the current RPP act as disincentives to some CP operators from joining the coop sector and achieving these benefits. These disincentives should be eliminated to the extent practicable in the new RPP.

The design of new program is to replace the short-term demonstration program with a long-term program. Similar to the demonstration program, the fishing fleets have had little experience with cooperative fishery management and thus need to continue the educational process. In addition, all aspects of the economic portfolio of the fishery need to be recognized in order for the fishery to be rationalized. Similar to the current demonstration program, all the historical players – harvesters (both catcher vessels and catcher processors) and processors need to continue to be recognized in a meaningful way. One aspect highlighted in the problem statement is the entry level program. The Council recognizes that the current entry level fishery has some trouble spots that need to be addressed in the new long-term program.

5.3 The objectives of, and the legal basis for, the proposed rule

Under the current regulatory structure, the CGOA rockfish fisheries are managed under the rockfish pilot program. The alternatives proposed by the Council are intended to continue the success of the pilot program by continuing to improve economic efficiency, reduce incentives for bycatch, reduce unnecessary physical risk when fishing conditions are hazardous, and address a range of social concerns.

Under the current regulatory structure, GOA groundfish species are managed by NOAA Fisheries, under the GOA Groundfish FMP. The authority for this action and the FMP are contained in the Magnuson-Stevens Act, as amended by the Magnuson-Stevens Fishery Conservation and Management Reauthorization (P.L. 109-479).

5.4 A description of, and where feasible, and estimate of the number of small entities to which the proposed rule will apply

Information concerning ownership of vessels and processors, which would be used to estimate the number of small entities that are regulated by this action, is somewhat limited. Using available information and data, however, estimates of the number of small entities regulated by the action are provided.

No processors or catcher processors that are eligible for the main program regulated by this action are small entities, as defined by the RFA. Some processors that are not eligible for the main program, but may choose to compete for landings from the entry level fishery could be small entities. The extent of participation by small entities in the processing segment of the entry level fishery cannot be predicted.

The ability to estimate of small entities that operate catcher vessels that are regulated by this action is limited due to incomplete information concerning vessel ownership. No catcher vessel individually exceeds that small entity threshold of \$3.5 million in gross revenues. At least three catcher vessels are believed to be owned by entities whose operations exceed the small entity threshold, leaving 45 small catcher vessel entities that are directly regulated by this action.

In addition to the main program, this action also creates an “entry level” fishery for catcher vessels and processors that are ineligible for the main program. Since participation in that fishery is voluntary, the number of small entities participating cannot be predicted. It is likely that a substantial portion of the catcher vessel participants will be small entities. It is also possible that some small processing entities could choose to participate in the entry level fishery.

5.5 A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule

5.6 An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule

The analysis uncovered no Federal rules that would conflict with, overlap, or be duplicated by the program alternatives.

5.7 A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes, and that would minimize any significant adverse economic impact of the proposed rule on small entities

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7 List of Persons and Agencies Consulted

Mary Furuness, Alaska Region, NOAA Fisheries

Josh Keaton, Alaska Region, NOAA Fisheries
John Lepore, NOAA General Counsel

8 List of Preparers

Mark Fina, North Pacific Fishery Management Council
Jon McCracken, North Pacific Fishery Management Council
Jeannie Heltzel, North Pacific Fishery Management Council
Michael Fey, Alaska Fisheries Information Network
Glenn Merrill, Sustainable Fisheries, Alaska Region, NOAA Fisheries
Steven Whitney, Sustainable Fisheries, Alaska Region, NOAA Fisheries

APPENDIX A

KODIAK COMMUNITY PROFILE

The community of Kodiak, located near the northeastern end of Kodiak Island in the Gulf of Alaska, is the largest island in Alaska and second in size within the United States only to the island of Hawaii. It is 252 air miles southwest of Anchorage, a 45-minute flight. The city of Kodiak, incorporated as a Home Rule City in 1940 and encompassing 3.5 square miles of land and 1.4 square miles of water, is part of the Kodiak Island Borough (KIB). Kodiak National Wildlife Refuge encompasses nearly 1.9 million acres on Kodiak and Afognak islands, and the Alaska Maritime National Wildlife Refuge, which includes the Barren Islands in the northernmost portion of the KIB as well as some tidelands and submerged lands in and around the city of Kodiak itself,¹ also has a significant presence in the Kodiak region.

The climate of Kodiak Island has a strong marine influence with moderate precipitation, occasional high winds, and frequent cloud cover and fog. Severe storms may occur year-round and are most common from December through February. Annual rainfall is 67 inches, and snowfall averages 78 inches. January temperatures range from 14 to 46° F, with July temperatures varying from 39 to 76° F.

1 Overview

Kodiak's identity is that of a fishing community. Through time, both its fishermen and processors have developed an engagement in and dependency upon many different fisheries. That is, while some fishermen and plants do specialize, many participants display a wide diversification in their fishery operations.

Commercial fish processing in the Kodiak region began on the Karluk spit in 1882. Not long after that, canneries² were established in the community of Kodiak. While the quantity and form of shore processing plants in Kodiak have 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 also 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 canneries processed 90 million pounds of crab in 1966. In the following years, there was some growth within the sector; for example, one new shoreplant was built in Kodiak in 1968.

Declining harvest levels, however, prompted several shoreplants to move their operations during the late 1960s and early 1970s to Unalaska/Dutch Harbor in the Aleutian Islands, closer

¹ Precise federal ownership/management of tidelands in and around Kodiak is matter of contention. This includes lands currently utilized for seafood processing.

² The term "cannery" is still commonly used in Kodiak to refer to shore-based seafood processors, regardless of product form actually produced. This term appears to be more commonly used in Kodiak than in some of the other communities profiled.

to the larger supply of Bering Sea/Aleutian Islands (BSAI) king crab. This move also diverted some of the crab that had previously been taken to Kodiak for processing, and the number of shoreplants in Kodiak declined by more than half. 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.

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 shoreplants. 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 fishery landings increased, and the rate of return for individual shoreplants 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 overharvesting 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 the early 1980s. Waters around Kodiak still produce Tanner and Dungeness crab fisheries, and Kodiak shoreplants process these species in addition to deliveries of crab they receive from boats returning from the Bering Sea fishery.

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 shoreplants 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 derby-type 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 shoreplant 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 Exclusive Economic Zone, while American boats and processors entered the fishery. By the late 1970s a few Kodiak shoreplants, 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 interviewee 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-1980s, "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 Gulf of Alaska onshore processors and the harvesters who deliver to them from preemption by the offshore sector. However, even with license limitation, the Gulf of Alaska 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 shoreplants relative to their normal operating capacity. 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 American Fisheries Act of 1998 (AFA) in the Bering Sea, some Kodiak processors also cite the "race for history" in Gulf of Alaska fisheries (and especially pollock) as an additional pressure toward inefficiency in local groundfish fisheries, in anticipation of eventual groundfish rationalization in some form in the Gulf of Alaska.

According to the City of Kodiak, Kodiak is home port to 770 commercial fishing vessels, making it the state's "largest fishing port" (NMFS 2002) as measured by local fleet size. 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 BSAI fisheries). The details and dynamics are somewhat complex but have resulted in a fleet of multispecies, multigear 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 Individual Fishing Quotas (IFQs) have increased the cost and perhaps reduced the possibility for such versatility. Kodiak fishermen greatly value having options and making their own decisions regarding a diversified fishing strategy. 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 or the recent proposed

management alternatives directed toward rationalizing various fisheries are generally quite clear to them.

Though commercial fishing remains a central element in the underpinning of the local economy, Kodiak's economy has become increasingly diversified. The local United States Coast Guard (USCG) installation is the largest in the United States, and although relatively self-sufficient in some respects, it also contributes a great deal to the local economy in many ways, with approximately 1,300 uniformed and civilian employees, along with 1,700 dependents. 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 response to increased population and more USCG personnel living off-base. The housing market, however, is currently softer than it has been in the collective memory of most Kodiak residents, due at least in part to a general downturn in the fishing industry. In the decade from 1987 through 1996, wholesale value of seafood processed in Kodiak ranged from roughly \$200 million and up on an annual basis; from 1997 to 2006 this value only reached \$100 million in 2 years (1999 and 2006). 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 long-term 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 of the community, represented by the facilities of Kodiak College and the Fishery Industrial Technology Center. The aerospace industry has the potential, through a local rocket launch facility and associated activities, 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.

2 COMMUNITY DEMOGRAPHICS

Kodiak is a large community by Alaska standards and is the seventh largest community in the state in terms of population.³ Accompanying this size is a relatively diversified economy compared to other fishing communities in the southwestern part of the state. In terms of direct employment in the fishery being the overriding factor in residency decisions, the population of Kodiak could be viewed as less directly tied to the fishing economy than, for example, is the case for Unalaska, Akutan, or King Cove. Much of the economic diversity seen in Kodiak, however, links back to commercial fisheries in one way or another, with commercial fishing underpinning much of the apparent diversity, generating secondary and indirect employment, and otherwise driving a wide range of related activities. For example, there is a considerable U.S. Coast Guard presence in the community. While not a direct fisheries activity, the base would not exist in Kodiak if it were not driven by commercial fishing-related demands.

2.1 Total Population

Table 1 provides information on Kodiak's total population by decade since 1880. 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. The KIB was formed much later, and numbers for the borough

³ The six largest communities in Alaska, in order, are Anchorage, Juneau, Fairbanks, Sitka, Ketchikan, and Kenai. There are two different basic types of local governance in these communities: Anchorage, Juneau, and Sitka are unified Home Rule Municipalities (i.e., unified city/boroughs), while Fairbanks, Ketchikan, and Kenai, like Kodiak, are Home Rule Cities (Kodiak Chamber of Commerce 2004).

are not available until 1960 when 7,174 people were enumerated. Named places within the KIB only totaled 3,320 people at that time, however, and most were in 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, Kodiak (Linda Freed, personal communication 2001⁴). This would account for a good deal of the sharp increase between 1950 and 1960 of the population of the “greater city of Kodiak” (Table 1).

Table 1. Kodiak City and Area Population 1880–2000

Year	City of Kodiak	Greater City of Kodiak ¹	Total Hinterland ²	Kodiak Island Borough
1880	0	0	694	NA
1890	495	495	1,334	NA
1900	341	341	623	NA
1910	438	438	655	NA
1920	374	374	343	NA
1930	442	442	444	NA
1940	864	864	589	NA
1950	1,710	1,710	567	NA
1960	2,628	6,482	692	7,174
1970	3,798	8,410	999	9,409
1980	4,756	8,842	1,097	9,939
1990	6,365	11,610	1,699	13,309
2000	6,334	12,211	1,702	13,913

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.

Source: DCED for named places; “greater city of Kodiak” and “Total Hinterland” are derived values—see text.

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. A reported trend in recent years is an increase in the “unincorporated” population and a simultaneous, if slight, decrease in population for the city of Kodiak proper, as the city is considered essentially built out. An additional 1,840 people live on the USCG base, which most people also consider as part of the greater city of Kodiak area. Together these three populations include 12,211 individuals, or about 86 percent of the KIB’s total 2000 population of 13,913. This three-population greater city of Kodiak figure does not include the residents of Chiniak or Womens Bay (which together comprise about 5 percent of the KIB’s population), although from a number of perspectives it would be logically consistent to include them as well, based on the closeness of social, employment, and economic ties. The calculated greater city of Kodiak percentage of the total borough population has varied from 84 to 90 percent since the formation of the KIB. Table 2 provides 2005 population estimates for communities and named places within the KIB. While specific relationships vary by

⁴ Freed, Linda, Director of Community Development, Kodiak Island Borough, June 2001.

community, in general, Kodiak acts as a transportation, administrative, and economic hub for the borough.

Table 2. Kodiak Island Borough Population Estimates, 2005

Community or Area	Estimated Population
City of Kodiak	6,088
Akhiok	41
Chiniak	52
Larsen Bay	97
Old Harbor	200
Ouzinkie	191
Port Lions	220
Karluk	27
Womens Bay	703
USCG Base	1,975
Other Areas	4,044
Total Borough	13,638

Source: Kodiak Chamber of Commerce Kodiak Community Profile and Economic Indicators, 2007 (based on Alaska Department of Labor data).

Kodiak, like other fishing communities, experiences seasonal population fluctuations that correspond to peak harvest and processing periods. In Kodiak, this has historically been most evident in summer (primarily July and August). With the development and growing importance of groundfish processing, however, Kodiak processors have increasingly tried to operate year-round (or nearly year-round) and have done so in recent years with a predominantly local labor force, for a number of reasons, including increased costs of transporting, housing, feeding, and training temporary employees. These trends have had the effect of minimizing seasonal population fluctuations tied to fishing *per se*, and the growth of the nonfishing portion of the economy has also tended to smooth out overall population peaks and valleys. These dynamics are discussed below in terms of the processing and harvesting labor force.

2.2 Ethnicity

Kodiak is a complex community in terms of the ethnic composition of its population. Sugpiaqs (Koniags) were the original inhabitants of the area, but in the late 1700s contact with Russians, their diseases, and their sea otter hunting and trading operations had devastating effects on the Native population and culture. (Alutiiq has survived as the present-day Native language, however, and a number of developments in the late twentieth century, such as the Alaska Native Claims Settlement Act of 1971 and the Alaska National Interest Lands Conservation Act of 1980, among others, have fostered more economic and political autonomy for Alaska Natives in the region and elsewhere in the state.) Alaska, including Kodiak, became a U.S. Territory in 1867, and a cannery opened on Karluk spit 15 years later. This marked the start of the development of commercial fishing on Kodiak Island, and Karluk remained the largest community on the island until about 1920. Commercial fishing and the military buildup

associated with World War II brought many non-Natives to Kodiak, primarily Caucasians, but the population influx also included a substantial number of persons of other minorities, most of whom were at least initially associated with fish processing employment.

Table 3 presents time series information on ethnicity for the city of Kodiak and Table 4 presents comparative information for the KIB. While the information is not all directly comparable due to changing definitions and different sources, certain conclusions are fairly clear. The population of the greater city of Kodiak area is quite different from that of the borough as a whole, and a good portion of this difference is related to the economic development in the city in general and fisheries development in particular. For example, most residents of Filipino or Asian and Pacific Islander descent live in or near the city of Kodiak. With initial in-migration of these groups associated with fish processing employment, 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 is consistent with the common community perception, and plant manager reports, that fish processing workers are more of a resident workforce with intact family units than in the past and, further, that fish processing jobs are being used as an entry-level means of moving to Kodiak before individuals then take employment in other sectors of the local economy. The Alaska 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 white or Euroamerican 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 Euroamericans declining in percentage. Native Americans and African Americans have shown relatively little change. Census data also show that the “Hispanic Origin” portion of the population has also grown over time, and this is consistent with plant managers’ observations about the changing composition of processing workforces, along with anecdotal information that the Hispanic population is increasing and located primarily in the city of Kodiak (KIB website).

Table 3. Ethnic Composition of Population Kodiak City: 1970, 1980, 1990, and 2000

Race/Ethnicity	1970		1980		1990		2000	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
White	3,094	81.7%	3,337	71.2%	4,028	63.3%	2,939	46.4%
Black or African American	44	1.2%	26	0.5%	47	0.7%	44	0.7%
Native American/Alaskan	479	12.6%	573	12.2%	629	9.9%	663	10.5%
Asian/Pacific Islands*	NA	-	554	11.8%	1,282	20.1%	2,069	32.6%
Other**	116	3.1%	-	-	379	5.9%	619	9.8%
Total	3,733	100%	4,490	100%	6,365	100%	6,334	100%
Hispanic***	NA	-	196	4.2%	403	6.3%	541	8.5%

* 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).

Source: U.S. Census Bureau 1990, 2000.

Table 4. Ethnic Composition of Population Kodiak Island Borough: 1980, 1990, and 2000

Race/Ethnicity	1980		1990		2000	
	Number	Percent	Number	Percent	Number	Percent
White	7,046	70.9%	9,289	69.8%	8,304	59.7%
Black or African American	72	0.7%	135	1.0%	134	1%
Native American/Alaskan	1,710	17.2%	1,723	12.9%	2,028	14.6%
Asian/Pacific Islands*	624	6.3%	1,492	11.2%	2,342	16.8%
Other**	283	2.8%	670	5.0%	1,105	8%
Total	9,735	100%	13,309	100%	13,913	100%
Hispanic***	204	2.0%	669	5.0%	848	6.1%

* 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).

Source: U.S. Census Bureau 1990, 2000.

As noted earlier, the greater city of Kodiak area acts in many ways as a hub community for other communities within the borough. Most of the outlying communities within the borough have predominately Alaska Native populations, as shown in Table 5. As may be seen in the table, in 2000 the city of Kodiak and Womens Bay (about 8 miles from the city of Kodiak, and close to the Kodiak Station USCG base) had populations around 12 to 13 percent Alaska Native. Chiniak (road connected to the city of Kodiak, and arguably closely linked to that community in a number of ways) and the Kodiak Station USCG base (again, closely associated with the greater city of Kodiak itself) were around 3 to 4 percent Alaska Native. All other communities in the borough are outlying villages without road connections and, with one exception, were predominantly (between 64 and 96 percent) Alaska Native (and five of these six communities were about 80 percent or greater Alaska Native).

Table 5. Kodiak Island Borough Population and Alaska Native Percentage of Population by Place, 2000

Community or Area	Population	Percent Alaska Native
City of Kodiak	6,334	13%
Womens Bay	690	12%
Chiniak	50	4%
Kodiak Station (USCG)	1,840	3%
Aleneva	68	2%
Akhiok	80	94%
Karluk	27	96%
Larsen Bay	115	79%
Old Harbor	237	86%
Ouzinkie	225	88%
Port Lions	256	64%
Other Areas	3,991	16%
Total Borough	13,913	17%

Source: Alaska Dept of Commerce, Community and Economic Development, 2004.

The single exception to this pattern (predominantly non-Native population named places being confined to the road connected to the greater city of Kodiak area and predominantly Alaska Native communities being the non-road-connected outlying communities) is the unincorporated community of Aleneva. This is one of Alaska's "Russian Old Believer" (*Starovery*) communities, whose population traces their ancestry through descendants of Orthodox Russians who refused to accept church reforms of the mid-seventeenth century and who first came to the New World seeking religious freedom following the Bolshevik Revolution of 1917. Aleneva is located on the coast of Afognak Island in the Raspberry Strait, north of Kodiak. The oldest (dating from the late 1960s) and best known of Alaska's Russian Old Believer communities are on the Kenai Peninsula, but Aleneva has also proven to be a favored location for the degree of voluntary social isolation often sought by this group. (This group is relevant for characterization of commercial fishing in Kodiak as Old Believers in Alaska in general are often commercial fishermen and builders of commercial fishing boats. Aleneva fishermen primarily longline for cod and halibut with 50-foot [and under] vessels and sell their catch to processors in Kodiak.)

2.3 Age and Sex

The city of Kodiak shows a greater proportion of males than females in its population and has been relatively stable in this regard for the period 1970–2000 (Table 6). The KIB as a whole shows an analogous imbalance over the 1990 through 2000 period (Table 7). This is a common characteristic of communities where at least one major economic sector disproportionately employs single members of one sex. In Kodiak, the fishing industry has historically employed many single males, both as harvesters and processors, and this has involved a substantial amount of labor migration to the community. Although this population has apparently become more resident and less transient than in the past, evidently this has not greatly affected the overall population's male-to-female ratio. Population data suggest that single males still disproportionately migrate to Kodiak for at least some period of time, and/or perhaps that females may tend to migrate out more than do males. The North Pacific Fishery Management Council (NPFMC) community profile developed in the early 1990s (IAI 1991) indicates that the male/female ratio for the Native population was approximately equal, as would be expected from a resident population. The male-to-female ratio for Euroamericans was somewhat skewed (54 percent male, 46 percent female), and for Filipinos was even more skewed. This was interpreted as evidence for a relatively resident Native population, with a predominately resident Euroamerican population somewhat more prone to movement in and out, and a much more mobile "other minority" population disproportionately composed of single male workers and a smaller percentage of family units with children. More recent data suggest that this pattern has been changing over the intervening years, however, as the processing workforce has become more residential and less transient through time, and as individuals who initially came to Kodiak for processing work are moving into employment in other economic sectors and raising families in the community.

Table 6. Population by Age and Sex, Kodiak City: 1970, 1980, 1990, and 2000

	1970		1980		1990		2000	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Male	2,055	54%	2,498	53%	3,496	55%	3379	53%
Female	1,743	46%	2,188	47%	2,869	45%	2955	47%
Total	3,798	100%	4,686	100%	6,365	100%	6334	100%
Median Age	NA		NA		NA		33.5 years	

Source: U.S. Census Bureau 1990, 2000.

Table 7. Population by Age and Sex, Kodiak Island Borough: 1990 and 2000

	1990		2000	
	Number	Percent	Number	Percent
Male	7,395	56%	7,362	53%
Female	5,914	44%	6,551	47%
Total	13,309	100%	13,913	100%
Median Age	NA		31.6 years	

Source: U.S. Census Bureau 1990, 2000.

One way of looking at changes in population dynamics by age is through school enrollment figures. Table 8 provides information on enrollments in schools in the greater city of Kodiak area from 1997 through 2003. Other borough schools are found in six operational rural areas (Akhiok, Larson Bay, Port Lions, Ouzinkie, Old Harbor, and Karluk⁵) and two logging camps (Danger Bay and Big Sandy Lake, although the latter was not open during the 2007–2008 school year). As shown, total enrollments have fluctuated on a year-to-year basis but have remained relatively stable over this period of time. In contrast to the town schools, overall KIB School District enrollments are down in recent years, which district personnel attribute to a combination of smaller families and the growth in the number of religious-affiliated private schools on the island.

Tables 9a and 9b provide information on school enrollments by student ethnicity for the 2002–2003 and 2007–2008 school years. Some changes are evident between these years, with the proportion of Caucasian students decreasing, and the proportions of Asian and Hawaiian/Pacific Islander and Hispanic students increasing. Alaska Native, American Indian, Black/African American, and multi-ethnic students remained proportionally about the same. As the local Asian/Pacific Islander population in general was originally associated with commercial fishing/processing opportunities in the community, the school enrollment data reinforce the noted trend of movement out of processing and settling in to become more fully engaged in the community, raise families, and participate in various other sectors of the community economy. This is one area where large-scale population change may be traced directly back to commercial fishing activities. The same may be said for Kodiak’s Caucasian population, but with a longer time line and many more intervening variables, this is not as directly apparent as is the case with the Asian/Pacific Islander population. Localized and age demographic variation is also evident

⁵ There have been recent changes in school locations based on shifting demographic patterns: the school in Karluk opened for the 2005–2006 school year ; the school at Chiniak closed in the 2007–2008 school year.

Table 8. Kodiak Town School Student Enrollments, by School Year, 1997–1998 through 2007–2008

School	1997– 1998	1998– 1999	1999– 2000	2000– 2001	2001– 2002	2002– 2003	2003– 2004	2004– 2005	2005– 2006	2006– 2007	2007– 2008
East Elementary	429	432	467	467	451	463	449	341	332	320	340
Main Elementary	267	258	253	257	262	264	277	291	264	269	261
North Star Elementary	266	272	313	325	327	297	262	298	328	308	327
Peterson Elementary	358	328	381	334	299	273	252	301	317	323	306
Kodiak Middle School	435	408	357	369	425	413	416	377	369	348	363
Kodiak High School	672	703	689	736	766	785	785	830	839	819	785
Total	2,427	2,401	2,460	2,488	2,530	2,495	2,441	2,438	2,449	2,387	2,382

Note: “Town” schools include those in and around the city of Kodiak, but not the outlying villages within the Kodiak Island Borough School District. Peterson Elementary School is located on the U.S. Coast Guard base.

Source: Derived from Kodiak Island Borough School District annual “Ethnicity by School and Gender” spreadsheets.

Table 9a. Ethnic Enrollment by School, Kodiak Town Schools, 2002–2003 School Year

School	Alaska Native	American Indian	Asian/Pacific Islander	Black/African American	Caucasian	Hispanic	Mixed	Total
East Elementary	112	4	98	0	210	31	8	463
Main Elementary	15	3	159	0	28	53	6	264
North Star Elementary	61	9	44	3	163	13	4	297
Peterson Elementary	14	3	14	7	220	11	4	273
Kodiak Middle School	63	8	112	4	198	23	5	413
Kodiak High School	116	17	186	12	423	28	3	785
Total Enrollment	381	44	613	26	1,242	159	30	2,495
Percent of Total Enrollment	15.27%	1.76%	24.57%	1.04%	49.78%	6.37%	1.20%	100.00%

Note: “Town” schools include those in and around the city of Kodiak, but not the outlying villages within the Kodiak Island Borough School District. Peterson Elementary School is located on the U.S. Coast Guard base.

Source: Derived from Kodiak Island Borough School District annual “Ethnic Enrollment by School” spreadsheets.

Table 9b. Ethnic Enrollment by School, Kodiak Town Schools, 2007–2008 School Year

School	Alaska Native	American Indian	Asian & Hawaiian/Pacific Islander	Black/African American	Caucasian	Hispanic	Multi-Ethnic	Total
East Elementary	94	8	70	1	140	25	2	340
Main Elementary	14	3	180	1	30	29	4	261
North Star Elementary	78	4	62	2	157	20	4	327
Peterson Elementary	14	2	36	13	200	29	12	306
Kodiak Middle School	61	6	96	3	161	36	0	363
Kodiak High School	106	12	194	4	393	69	7	785
Total Enrollment	367	35	638	24	1,081	208	29	2,382
Percent of Total Enrollment	15.41%	1.47%	26.78%	1.01%	45.38%	8.73%	1.22%	100.00%

Note: “Town” schools include those in and around the city of Kodiak, but not the outlying villages within the Kodiak Island Borough School District. Peterson Elementary School is located on the U.S. Coast Guard base. “Asian” and “Hawaiian/Pacific Islander,” separate in the October 2007 count, are combined in this table to provide comparability to earlier years.

Source: Derived from Kodiak Island Borough School District “Ethnicity by School and Gender” spreadsheet 2007.

in these data. For example Asian and Hawaiian/Pacific Islander children make up almost 70 percent of the student population of Main Elementary, but only about 20 percent of either East or North Star Elementary, and roughly 25 percent of the student populations of both Kodiak Middle School and Kodiak High School. Peterson Elementary, on the USCG installation, has over half of the Black/African American students of any age in all of the Kodiak city area schools.

Beyond the numbers seen in the previous tables, the specific ethnic make-up of the school district has reportedly changed over the years even within specific census categories. In the late 1970s, according to district personnel, there were numerous Korean and Japanese students, but their numbers declined in subsequent years as the Filipino student population grew. The school provides bilingual education and carries out the federal Migrant Education Title I-C Program, a program that supports educational instruction for families who must move to follow short-term or temporary employment opportunities. Under the Migrant Education Program, the district

receives federal funds to provide instruction to children of families that fish for long periods of time off-site, to children living with parents in logging camps, and to subsistence hunters. This program has little impact in the city of Kodiak itself, however, as processing plant employees are not included in this program and, as most fishermen do not travel with their children, rarely are fishing families the beneficiaries of this program.

The schools in Kodiak have, however, felt the impact of processing worker-related family migration in other ways. One way includes processing workers being sent to plants outside Kodiak during peak seasons. Another is when workers leave for a month (typically December) when the plants slow down or close, often taking advantage of the chance to visit family in their home countries. According to district personnel, it is not unusual for 2 or 3 students in a classroom of 22 to 25 total students to be gone for extended periods of time, disrupting their education. More recently, the district has taken a more strict interpretation of enforcing state requirements that mandate dropping from enrollment those students who are gone for more than 10 days. As a result, according to district personnel, at present if the primary bread-winner in the family must leave the community for a long period of time, it is now more typical for children not to accompany the parent and remain in school in Kodiak.

2.4 Housing Types and Population Segments

Historically, group housing in Kodiak was largely associated with the processing workforce, but this is no longer common, and certainly not to the nearly exclusive degree seen in major Southwest Alaska processing communities. This is due both to changes in labor migration patterns as well as to the greater complexity of the institutional base and range of housing types in Kodiak. As shown in Table 10, only 6 percent of the population lived in group housing in 1990, and this figure dropped to 2 percent in 2000. This is a much lower percentage of population residing in group quarters than in Unalaska, Akutan, and King Cove (as well as Sand Point) and is consistent with a processing workforce more heavily drawn from the local labor pool than is the case in these other communities.

Table 10. Group Quarters Housing Information, Kodiak, 1990 and 2000

Year	Total Population	Group Quarters Population		Non-Group Quarters Population	
		Number	Percent of Total Population	Number	Percent of Total Population
1990	6,365	356	5.59%	6,009	94.41%
2000	6,334	146	2.30%	6,188	97.97%

Source: U.S. Census Bureau 1990, 2000.

Table 11 provides information on group housing and ethnicity for Kodiak for 1990, and similar information for 2000 is presented in Table 12. In 1990, while there was a significant difference between the group quarters and non-group quarters demographics (with the group quarters population being a higher minority group than the community population as a whole), the differences are not as sharp in general or for particular groups as seen in the Aleutian region communities. A similar pattern is seen in the 2000 data; however, the small numbers of persons involved make any conclusions about the proportionality or trends of change between groups tenuous.

Table 11. Ethnicity and Group Quarters Housing Information, Kodiak, 1990

Race/Ethnicity	Total Population		Group Quarters Population		Non-Group Quarters Population	
	Number	Percent	Number	Percent	Number	Percent
White	4,028	63.28%	192	53.93%	3,836	63.84%
Black or African American	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	1,282	20.14%	118	33.15%	1,164	19.37%
Other race	197	3.10%	22	6.18%	175	2.91%
Total Population	6,365	100.00%	356	100.00%	6,009	100.00%
Hispanic origin, any race	407	6.39%	42	11.80%	365	6.07%
Total Minority Population	2,429	38.16%	181	50.84%	2,248	37.41%
Total Non-Minority Population (White Non-Hispanic)	3,936	61.84%	175	49.16%	3,761	62.59%

Source: U.S. Census Bureau 1990.

Table 12. Ethnicity and Group Quarters Housing Information, Kodiak, 2000

Race/Ethnicity	Total Population		Group Quarters Population**		Non-Group Quarters Population	
	Number	Percent	Number	Percent	Number	Percent
White	2,939	46.40%	78	53.42%	2,861	46.23%
Black or African American	44	0.69%	4	2.74%	40	0.65%
Alaska Native/Native American	663	10.47%	19	13.01%	644	10.41%
Native Hawaiian/Other Pacific Islander	59	0.93%	4	2.74%	55	0.89%
Asian	2,010	31.73%	28	19.18%	1,982	32.03%
Some Other Race	276	4.36%	8	5.48%	268	4.33%
Two or More Races	343	5.42%	5	3.42%	338	5.46%
Unknown	0	0%	0	0%	0	0%
Total	6,334	100.00%	146	100.00%	6,188	100.00%
Hispanic*	541	8.54%	17	11.64%	526	8.50%
Total Minority Population	3,565	56.28%	76	52.05%	3,489	56.38%
Total Non-Minority Population (White Alone, Not Hispanic or Latino)	2,769	43.72%	70	47.95%	2,699	43.62%

* "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).

** Unlike the other fishing community profiles in this document, not all persons in group quarters in Kodiak fall into the "noninstitutionalized population/other noninstitutionalized group quarters" census category. A total of 19 persons in group quarters in Kodiak are considered to be part of an "institutionalized population." In this case all are listed as residents of nursing homes.

Source: U.S. Census Bureau 2000.

Apart from group and non-group housing distinctions, household type in Kodiak varies by population segment, although systematic information of these patterns is not available. In general, however, 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 to take advantage of very strong employment opportunities. Sales of houses and the rental of apartments were 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 larger Alaskan 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 typical 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 reportedly building few or no new houses on speculation. There are incentives that have encouraged the building of new housing outside of Kodiak city limits, however, such as the state subsidizing the mortgage rate one full percentage point for housing outside of the city of Kodiak.⁶ Further, undeveloped land within the current city limits is somewhat scarce as the city builds out.

Information from interviews for previous projects would suggest 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 particular ethnic groups or persons with overall income levels associated with the seafood processing employment are concentrated, but there are also members of these same groups scattered throughout Kodiak.

One housing dynamic that had been operating until the recent past, noted earlier, has been that of the development of a more resident processing force. Kodiak processors have largely been able to close down bunkhouses as those attracted to Kodiak by fairly steady processing work preferred private housing in the community to company-owned group housing. Much of the processing labor force is on-call, working long shifts during the busy periods and slowing down to a smaller “core” group of employees during the slower seasons. While some plants still maintain bunkhouses for a seasonal influx of transient workers, this is less common than in the past. While one processor’s workforce is unionized, the workforce at the other plants run the gamut from those that are steady, receive benefit packages, and are maintained throughout the year, to those that are much less predictably provided on-call hourly wages. There are numerous local people who work in the processing plants on a part-time basis, but the pay scale associated with most processing work requires a relatively large number of hours to support a local resident compared to other types of employment.

Other than for peak processing periods (with one exception), virtually all Kodiak processing labor is local in the sense of having local housing arrangements, if not a long-term commitment to the community. 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 tend to be different for different ethnic groups in Kodiak and are especially fluid for fish processor workers.

The USCG 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 USCG

⁶ According to KIB staff, the incentive to build outside of the city itself is because the State of Alaska’s home loan program tends to favor areas that are defined as rural. Unincorporated borough lands meet this definition; therefore, residents can obtain longer-term, low-interest loans than if they live inside Kodiak city boundaries. According to City staff, the state will further subsidize the mortgage rate another full percentage point for newly constructed energy-efficient homes.

personnel have the option of living off-base if they prefer, so this has increased the local demand for housing.

Table 13 displays basic information on community housing, households, families, and median household and family income in 2000. As shown, the city of Kodiak is above the borough income averages. For example, median family income in Kodiak itself is about 3 percent higher than the borough as a whole. Compared to all communities in the region, the city of Kodiak places at the upper end of the range. In 2000, the highest median family income in the region was in the community of Chiniak, with a figure of \$75,067, while the lowest figure was \$19,167 for Karluk.

Table 13. Selected Household Information, Selected Kodiak Region Communities, 2000

Community	Total Housing Units	Vacant Housing Units	Total Households	Average Persons per Household	Median Household Income	Family Households	Average Family Size	Median Family Income
Kodiak	2,255	259	1,996	3.1	\$55,142	1,362	3.64	\$60,484
Kodiak Island Borough	5,159	735	4,424	3.07	\$54,636	3,257	3.52	\$58,834

Source: U.S. Census Bureau 2000.

3 Local Economy and Links to Commercial Fisheries

Despite the relative diversification of Kodiak’s economy, direct fishery-related employment is still a very large component of total local employment. Excluding the USCG, 4 of the top 10 employers in Kodiak in 2003 were seafood processors, and 3 more were listed in the top 20 employers (Table 14a). As of 2006, again excluding the USCG, 5 of the top 10 local employers were seafood processors and another local seafood processor was in the top 20 (Table 14b). Additionally, a catcher/processor listed as homeported in Kodiak (Seafreeze Alaska) and a processor operating out of Larsen Bay (Icicle Seafoods) were in the top 20 local employers. The list does not include Western Alaska Fisheries, reportedly because its Kodiak employment numbers are grouped with employment in other communities and reported elsewhere due to company structure. Otherwise, according the local chamber of commerce, Western Alaska Fisheries would likely also appear in the list of top 10 local employers.

It should be further noted that while Kodiak’s economy is apparently far more diversified than many other fishing communities, much of the nondirect economic activity in Kodiak relies to a greater or lesser degree on fishing activity as a base. The education, service and retail, and government sectors, including the USCG, are all very important for Kodiak. In this regard, interviews with some support providers who in the past have been primarily direct fisheries-oriented indicate that more recently customers from other sectors, including USCG, tourism, government, and education, have become significant in terms of the sale of outboard motors, boats, and similar marine-oriented items than in the past. As one such provider remarked, one-third of the USCG base turns over every year, which equates to a constant stream of new customers for him.

Table 14a. Top 20 Kodiak Employers, 2003

Rank	Employer*	Employment
1	Kodiak Island Borough School District	435
2	North Pacific Processors (APS)	264
3	Trident Seafood Group	200
4	Providence Kodiak Island Medical Center	190
5	City of Kodiak	159**
6	Wal-Mart Associates	147
7	Kodiak Area Native Association	132
7	Ocean Beauty Seafoods	132
9	Western Alaska Fisheries	125
10	Homeland Security	123
11	Safeway Inc.	119
12	University of Alaska Anchorage	84
13	Kodiak Inn	82
14	Alaska Department of Fish & Game	77
15	Brechan Enterprises	74
15	Global Seafoods	74
15	International Seafoods	74
18	Ki Enterprises (McDonald's)	72
19	Kodiak Electric Association	47
19	Alaska Fresh Seafood Inc.	47
19	Ben A. Thomas Inc. Alaska Division	47
20	Kodiak Island Housing Authority	43

* USCG and commercial fishermen are not included in this table.

** The City of Kodiak figure provided is apparently no longer accurate. According to the City Manager (personal communication 3/2/05), the city has "approximately 115 (non-seasonal) FTE's."

Source: Kodiak Chamber of Commerce, "Kodiak Community Profile and Economic Indicators," 1st Quarter 2005 revision.

Table 14b. Top 20 Kodiak Employers, 2006

Rank	Employer*	Employment
1	Kodiak Island Borough School District	450
2	Trident Seafoods Corporation	314
3	North Pacific Seafoods, Inc. [Alaska Pacific Seafoods]	234
4	Providence Hospital	210
5	Ocean Beauty Seafoods	201
6	International Seafoods	199
7	City of Kodiak	162
8	Safeway, Inc.	129
9	Global Seafoods	120
10	Department of Transportation	118
10	Wal-Mart Associates	118
12	Kodiak Area Natives Association	89
13	University of Alaska Anchorage	80
14	Alaska Department of Fish & Game	73
14	Ki Enterprises (McDonald's)	73
16	Seafreeze Alaska LP	66
17	Icicle Seafoods, Inc.	54
18	Kodiak Inn, Inc.	50
19	Alaska Fresh Seafood Inc.	45
19	Brechan Enterprises	45
19	Kodiak Island Housing Authority	45

* USCG and commercial fishermen are not included in this table.

Source: Kodiak Chamber of Commerce, "Kodiak Community Profile and Economic Indicators," 4th Quarter 2007 revision.

Realtors have also noted that large homes are less likely to be purchased by fishermen and more likely to be purchased by “Coasties” (USCG personnel) or other Kodiak residents than in the past. Again, however, with the exception of the tourism industry, a large reason the other sectors are as well developed as they are is related back to servicing, supplying, or otherwise directly or indirectly supporting the fishing industry. As previously noted, this includes the local USCG presence, with their primary local focus on fisheries activities.

Kodiak’s economy does follow annual cycles, which is attributable, in part, to the continuing importance of the commercial fishing industry. The fishing industry, in turn, responds to openings and closings of commercial seasons (and, of course, harvest levels and price). The locally important fishing seasons for Kodiak are well summarized on an annual “Kodiak Fisherman’s Calendar” poster that is published by the Kodiak Daily Mirror newspaper and is commonly found in the community. Information from this poster has been adapted for use in Table 15.

Table 15. Kodiak Fisherman’s Calendar, 2008

January 1	Cod “A” season in GOA and BSAI for fixed gear opens
January 1	Black rockfish — jig in Kodiak and South Peninsula
January 15	Kodiak Tanner crab season opens
January 15	Bering Sea Snow crab (opilio) opens
January 20	Pollock “A” season opens
January 20	Cod “A” season for trawl gear opens
March 1	Chignik state-waters Pacific cod opens
March 10	Pollock “B” season opens
TBA	South Peninsula state-waters Pacific cod fishery opens seven days after the Western GOA federal fishery closes
TBA	Kodiak state-waters Pacific cod fishery opens seven days after the Central GOA federal fishery closes
TBA	Halibut and sablefish IFQ fisheries opens (closes mid-November)
March 20–22	ComFish Alaska
April 15	Kodiak sac roe herring fishery opens (closes June 30)
May 1	Rockfish pilot program begins for trawl gear (closes November 15)
May 1	Dungeness crab Westward region, except south end of Kodiak, opens
Mid-May	Copper River sockeye opens (exact date TBA)
Emergency order	Chignik district shrimp opens
June 1	Tentative date Kodiak salmon season opening (closes October 31)
June 15	Dungeness crab for Kodiak south end opens
June 15	Kodiak district shrimp opens
Mid-June	Kodiak early run traditionally peaks
June 24	Gillnet Aleutian Islands bait herring opens
July 1	Kodiak, Yakutat, PWS and Bering Sea scallop season opens
July 4	Bristol Bay sockeye season traditionally peaks
July 6	Kodiak pink salmon fishery opens
July 15	Seine Aleutian Islands bait herring opens
August 15	Aleutian Islands brown king crab opens

Table 15. (continued)

August 15	Scallop fishing in Kamishak District opens (closes October 31)
August 25	Pollock “C” season opens
Late August	Kodiak late run traditionally peaks
September 1	Cod “B” season for fixed gear and trawl gear opens
October 1	Kodiak and Peninsula sea urchin, sea cucumber dive fisheries open
October 1	Kodiak food and bait herring season opens
October 1	Pollock “D” season opens
October 15	Bristol Bay red king crab, snow crab, and Bering Sea Tanner crab opens
November 15	Halibut and sablefish IFQ fisheries close
November	FishExpo in Seattle opens TBA
December 31	State pot and jig cod fishery officially closes
December 31	Lingcod officially closes

Note: All dates are subject to change pending fisheries management regulations.

Source: Adapted from Kodiak Daily Mirror flyer.

Table 16 displays the total volume of fish landed at Kodiak for 1984 through 2006. Kodiak has consistently ranked in the top four U.S. ports in terms of value of fish landings and in the top seven in terms of volume of landings over this period. As shown, there is considerable variability in absolute figures from year to year as, for example, the value of landings in Kodiak declined by over one-third between 1999 and 2002, but have since rebounded, reaching levels in 2006 similar to those seen in 1999 (in terms of absolute dollars, not inflation adjusted dollars). Among U.S. ports over the most recent 3 years shown (2004–2006) Kodiak has ranked behind Unalaska/Dutch Harbor, Alaska, Reedville, Virginia, and either Intracoastal City or Empire-Venice, Louisiana, in terms of volume of catch landed, and New Bedford, Massachusetts, Unalaska/Dutch Harbor, and, in the case of 2004 only, Hampton Roads Area, Virginia, in terms of value of catch landed.

Table 16. Volume and Value of Fish Landed at Kodiak, 1984–2006

Year	Volume		Value		Average Value (\$/lb)*
	Millions of Pounds	U.S. Ranking	Millions of Dollars	U.S. Ranking	
1984	69.9	7	113.6	2	1.63
1985	65.8	6	96.1	3	1.46
1986	141.2	7	89.8	3	0.64
1987	204.1	3	132.1	2	0.65
1988	304.6	3	166.3	1	0.55
1989	213.2	6	100.2	3	0.47
1990	272.5	3	101.7	3	0.37
1991	287.3	4	96.9	3	0.34
1992	274.0	3	90.0	3	0.33
1993	374.2	2	81.5	3	0.22
1994	307.7	2	107.6	2	0.35
1995	362.4	2	105.4	2	0.29
1996	202.7	5	82.3	3	0.41
1997	267.5	6	88.6	3	0.33
1998	357.6	5	78.7	3	0.22

Table 16. (continued)

Year	Volume		Value		Average Value (\$/lb)*
	Millions of Pounds	U.S. Ranking	Millions of Dollars	U.S. Ranking	
1999	331.6	6	100.8	3	0.30
2000	289.6	6	94.7	3	0.33
2001	285.5	6	74.4	3	0.26
2002	250.4	4	63.3	4	0.25
2003	262.9	5	81.5	3	0.31
2004	317.4	4	94.0	4	0.30
2005	337.2	4	95.8	3	0.28
2006	332.8	4	101.4	3	0.30

*Average value derived from volume and value data.

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics and Economics Division, Silver Spring, MD (accessed through NMFS Website http://www.st.nmfs.noaa.gov/st1/commercial/landings/lport_hist.html), 2004 and 5/27/08.

Table 17a lists detailed information on total volume and value of fish landings for Kodiak for 2003 by species or species group. It is important to note that individual fisheries fluctuate from year to year, and no single year should be taken as representative of other years. Nevertheless, the 2003 data represented information from the most recent full year for which data are available at the time of the pre-BSAI implementation study (2004). Clearly, the value of landings in Kodiak are dominated by halibut, salmon, and Pacific cod, which together accounted for 68 percent of the total value of all species landed. These three species (or species groups) accounted for between 20 and 27 percent of total value each, while no other species accounted for more than about 10 percent of the total. Sablefish, pollock, and Bristol Bay red king crab, the next three most important species after halibut, salmon, and Pacific cod, accounted for 10 percent, 8 percent, and 6 percent of the overall total, respectively. No other species accounts for more than about 2 percent of the total. Salmon, pollock, and Pacific cod accounted for greatest volume of fish landed, with these three high volume species (or species complex) comprising over three-quarters of all landings by weight. As shown, several other groundfish species are relatively high-volume species locally, but account for a relatively small proportion of the total value landed, due to relatively low values per pound.

Table 17a. Volume and Value of Fish Landed at the Port of Kodiak, by Species, 2003

Species	Volume Landed (Pounds) ¹	% of Total Volume	Ex-vessel Value (dollars)	% of Total Value
Halibut ²	7,891,904	2.88%	\$22,407,370	27.03%
Salmon	83,646,938	30.49%	\$17,890,468	21.58%
Pacific Cod	52,935,977	19.29%	\$16,410,153	19.79%
Sablefish	2,405,403	0.88%	\$8,034,046	9.69%
Pollock	73,136,066	26.66%	\$6,582,246	7.94%
Bristol Bay Red King Crab	879,269	0.32%	\$4,712,882	5.68%
Other Crab	540,173	0.20%	\$1,299,915	1.57%
Rock Sole	8,123,946	2.96%	\$1,137,352	1.37%
Herring	4,361,882	1.59%	\$1,086,270	1.31%

Table 17a. (continued)

Species	Volume Landed (Pounds) ¹	% of Total Volume	Ex-vessel Value (dollars)	% of Total Value
Flatfish ³	14,264,333	5.20%	\$747,899	0.90%
Dungeness Crab	472,573	0.17%	\$704,134	0.85%
Rockfish ⁴	10,982,826	4.00%	\$700,627	0.85%
Pacific Ocean Perch	11,507,301	4.19%	\$575,365	0.69%
Flathead Sole	2,798,544	1.02%	\$251,869	0.30%
Sea Cucumbers	153,903	0.06%	\$210,847	0.25%
Black Rockfish	83,854	0.03%	\$31,865	0.04%
Octopus	64,875	0.02%	\$27,896	0.03%
Weathervane Scallops	NA	--	NA	--
Bering Sea Snow Crab	NA	--	NA	--
Miscellaneous/other/unspecified (inc. shrimp and sea urchins) ⁵	118,493	0.04%	\$99,747	0.12%
Total	274,368,260	100.00%	\$82,910,951	100.00%

¹ Represents pounds of product landed at the Port of Kodiak, including harvests from outside of the Kodiak management area (from Fish Ticket data).

² Halibut volume from NMFS Website and includes all landings in Kodiak regardless of where fish were harvested.

³ Includes butter sole, yellowfin sole, starry flounder, Alaska plaice, and Greenland turbot.

⁴ Includes northern, thornyhead, yelloweye, rougheye, shortraker, and dusky rockfish.

⁵ Figures in this row provided to make totals for known and unspecified species sum to reported port totals and are adjusted to account for rounding errors and species that are not reported individually due to confidentiality restrictions. Values should be taken as approximations and should not be used for comparative purposes.

Source: Adapted from Kodiak Chamber of Commerce, 2004 (from Alaska Department of Fish and Game).

Table 17b lists detailed information on total volume and value of fish landings for Kodiak for 2006 by species or species group. These data represent the most recent full-year data available. Clearly, the value of landings in Kodiak are dominated by salmon (30 percent), and Pacific cod (19 percent), pollock (13 percent) halibut (12 percent), which together accounted for 75 percent of the total value of all species landed. Sablefish accounted for about 8 percent of the total, while all species of crab combined accounted for a little over 6 percent of the total, and flatfish accounted for about 4 percent of the total. No other species or species complex accounted for more than 2 percent of the total but, as shown, several other groundfish species were relatively high-volume species locally, but accounted for a relatively small proportion of the total value landed, due to relatively low values per pound.

Table 17b. Volume and Value of Fish Landed at Port of Kodiak, by Species, 2006

Species	Volume Landed (pounds) ¹	% of Total Volume	Ex-vessel Value (dollars)	% of Total Value
salmon, Chinook	210,592	0.06%	\$197,956	0.19%
salmon, sockeye	8,146,700	2.14%	\$6,843,228	6.44%
salmon, coho	4,338,634	1.14%	\$2,863,498	2.70%
salmon, pink	117,392,708	30.82%	\$18,782,833	17.69%
salmon, chum	9,102,850	2.39%	\$3,003,941	2.83%
halibut, Pacific ²	3,454,834	0.91%	\$13,085,725	12.32%

Table 17b. (continued)

Species	Volume Landed (pounds) ¹	% of Total Volume	Ex-vessel Value (dollars)	% of Total Value
herring, Pacific	5,624,729	1.48%	\$618,720	0.58%
cod, Pacific (gray)	50,039,197	13.14%	\$20,516,071	19.32%
pollock, walleye	101,523,425	26.65%	\$14,213,280	13.39%
arrowtooth flounder	30,710,932	8.06%	\$2,149,765	2.02%
black rockfish	214,151	0.06%	\$85,660	0.08%
Octopus	209,709	0.06%	\$132,117	0.12%
perch, Pacific ocean	10,496,787	2.76%	\$1,679,486	1.58%
Squid	3,375,890	0.89%	\$236,312	0.22%
sablefish (black cod)	2,467,618	0.65%	\$8,834,073	8.32%
Skates	3,099,190	0.81%	\$688,156	0.65%
Rockfish ³	6,878,056	1.81%	\$1,124,548	1.06%
flatfish ⁴	20,421,644	5.36%	\$4,281,385	4.03%
crab ⁵	3,215,170	0.84%	\$6,851,290	6.45%
Total	380,922,816	100.00%	\$106,188,044	100.00%

¹ Represents pounds of product landed at the Port of Kodiak, including harvests from outside of the Kodiak management area (from Fish Ticket data).

² Halibut pounds from NMFS website: <http://www.fakr.noaa.gov/ram/ifqreports.htm> and includes all landings in Kodiak regardless of where fish were harvested.

³ Includes greenstripe, northern, thornyhead, yelloweye, quillback, tiger, rosethorn, rougheye, shortraker, redbanded, dusky, yellowtail, sharpchin, harlequin, and blackgill rockfish.

⁴ Includes dover sole, rex sole, butter sole, English sole, starry flounder, petrale sole, sand sole, Alaska plaice, and Greenland turbot.

⁵ Includes Dungeness, red king, bairdi, and opilio crab.

Source: Adapted from Kodiak Chamber of Commerce, 2004 (from Alaska Department of Fish and Game).

The portion of Kodiak's economy tied to the fisheries shows distinct variation by season. The more-or-less regular or cyclical annual variation endemic to Kodiak's fishing economy also spills over into other local economic sectors; other sectors, such as tourism-related businesses, have their own seasonal fluctuations. An estimated 76 percent of all visitors arrive during the summer months and visitor spending in fiscal year (FY) 2006 was estimated at \$22.6 million (Kodiak Island Convention and Visitors Bureau 2007). In FY 2006, the combined City of Kodiak's and the KIB's room taxes equaled \$180,542. Kodiak Chamber of Commerce data as compiled by the City of Kodiak Finance Department for total sale receipts, cannery receipts, boat harbor revenues, charter boat revenues, and retail sales all show pronounced seasonal fluctuations over time. The local timber industry is still a part of the overall regional economy, but it has declined substantially in recent years. Timber severance taxes were \$347,424 in 1995, but only \$17,013 in 2005, although they rebounded to \$62,740 in 2006. There are a number of different niche sectors on the island, with one of the more unusual being the commercial space port/rocket launch facility run by the Alaska Aerospace Development Corporation, which has been operational since 1998.

According to the Kodiak Chamber of Commerce, in 2007 the state estimated the KIB's average monthly employment to be 5,745, excluding fish harvesting and the USCG. Other Chamber of Commerce figures put the USCG and other government entities as providing 35 percent of local employment, the seafood industry (including harvesting and processing) at about 27 percent, and retail trade/transportation/utilities at around 11 percent. No other sector accounted for more than 7 percent of local employment. Monthly unemployment ranged from 4.7 percent to 9.3 percent,

due primarily to seasonal fishing employment fluctuations, with an average annual unemployment rate of 6.2 percent for the KIB as a whole in 2007 (Kodiak Chamber of Commerce 2007).

Table 18 displays data on employment and poverty for the city of Kodiak and the KIB from census data for 2000. As shown, there was very little unemployment in these jurisdictions, presumably due in part to the presence of fishery-related employment opportunities, and also the fact that the Kodiak economy is relatively diversified by rural Alaska standards (and particularly in comparison to the Aleutian region fishing communities, such as Unalaska, Akutan, and King Cove). The city of Kodiak has the second-lowest unemployment of any civilian community in the KIB region (3.6 percent compared to 2.1 percent in Port Lions), whereas the village of Old Harbor has the highest unemployment in the region at 12.5 percent. Proportions of the population considered to be below the poverty threshold vary between the communities, but taken in isolation this is somewhat misleading. For example, Ouzinkie had the lowest poverty rate of any community in the region in 2000 at 6.0 percent, but at the same time 48 percent of the adults in the community are not working. Old Harbor has the highest poverty rate in the region at 29.5 percent.

Table 18. Employment and Poverty Information, City of Kodiak and Kodiak Island Borough, 2000

Community	Total Persons Employed	Unemployed	Percent Unemployment	Percent Adults not Working	Not Seeking Employment	Percent Poverty
Kodiak	3,053	160	3.6	29.62	1,170	7.4
Kodiak Island Borough	6,131	335	3.4	29.27	2,532	6.6

Source: U.S. Census Bureau 2000.

The following discussion of the fishing industry is divided into a section on fishery-related organizations, followed by separate sections on the harvesting and processing sectors, as each is extremely important for the Kodiak economy and community. A fourth section provides some general contextual information on fishery industry support services.

3.1 Fishery-Related Organizations

An indicator of the central social, economic, and political importance of commercial fishing and fishing-related activities in the community of Kodiak is the number of local and locally based statewide organizations that represent a range of fishery industry interests including the harvesting, processing, and marketing sectors within the industry. Kodiak is also the base for various special interest community and environmental groups attentive to fishing issues. Some of these are long-standing, well-organized groups; others come together on an ad-hoc basis to address particular legislative or operational issues; while still others are loose-knit, grassroots affiliations organized to respond to particular issues facing a sector within the industry. These groups may be seen as falling into three basic categories: (1) organizations that promote marketing of a fishery product; (2) organizations focused on particular target fisheries (salmon, halibut, groundfish), gear types (longline, trawler, etc.), or industry sectors (processing); and (3) grassroots organizations formed to respond to a specific issue(s) facing a sector or sectors in the industry. While there are a number of emergent organizations, the degree of organizational complexity is not seen in any of the other major fishing communities in the southwest portion of

the state (such as Unalaska, Akutan, or King Cove) and is indicative of Kodiak's large fleet, processing capacity, and diversity of interests. The following is a general list of organizations, by type, within the Kodiak region.

Kodiak-based organizations that promote marketing include the United Salmon Association (USA), representing salmon fishermen, and the United Fishermen's Marketing Association (UFMA), which represents the nontrawl fleet. Both are multiple-layered organizations that are involved with marketing efforts, research, and providing formal representation on legislative affairs on behalf of their respective industries. USA is an organization of salmon fishermen concerned with issues of pricing, product quality, and long-term economic viability of the fishery. It is a fishermen's marketing association and consults with Alaska state legislators to draft legislation to maintain and compete in the salmon market. The association, as a whole, has worked toward creating organic labeling standards for wild salmon, obtained funding to provide the labeling to American seafood producers, and tracks resources available to fishermen under a variety of legislative programs. USA, in partnership with the "Kodiak Branding and Marketing Committee," a subcommittee of the Kodiak Chamber of Commerce, has established an extensive marketing campaign to promote wild Alaska salmon in response to the growth of farmed salmon and its impact on the Alaska salmon market. While its headquarters are based in Kodiak, USA's membership includes salmon fishermen in Kodiak, Prince William Sound, Southeast, and Western Alaska. UFMA has existed since the 1930s as a cooperative, negotiating salmon prices and, later, Tanner crab prices. UFMA represents nontrawl commercial seafood producers to government agencies on legislative and regulatory matters. They are also involved with advanced and applied fisheries research on a variety of levels. UFMA's core members are salmon fishermen but include Bering Sea and Gulf of Alaska crab vessels, as well as halibut, sablefish, and cod pot fishermen. While it does not represent processors, UFMA does work closely with both shoreplant and at-sea processors on issues of mutual interest.

Kodiak-based organizations representing particular fishery sectors include the Kodiak Long Line Vessel Owners Association (LLVOA) and the Alaska Whitefish Trawlers Association (AWTA), and the Alaska Groundfish Databank (AGDB) among others. LLVOA is a relatively small organization with few members, but those members reportedly include the top 10 percent of the producers in the fleet, with five member vessels alone, according to 2004 interviews with LLVOA staff, accounting for over 50 percent of all longline harvest in Kodiak. AWTA was formed in 1972 and represents trawl fishermen and vessel owners. It was originally known as the Kodiak Shrimp Trawlers Association; the organization subsequently became the Alaska Shrimp Trawlers, later changing its name to the Alaska Dragners Association, before announcing its current name in June 2008. AWTA provides formal representation on behalf of the trawl fishermen to government agencies, including national and international commissions on issues that affect the trawl fleet. The organization has a membership of about 45 trawlers, though some of these have other gear types, including longline and pot gear, on their vessels as well. Of the 45 AWTA members, 65 percent are Alaska vessel owners, while 30 percent are Washington or Oregon based. According to AWTA leadership, at least 75 percent of the member vessels have crew members that are Alaska based. AWTA staff have been active on the Council's Advisory Panel for over 20 years, and lobbies the Council on regulatory policy issues. Most of the members live and work in Kodiak and all fish in the Gulf of Alaska, while some also fish in the Bering Sea. AGDB is a consulting, lobbying, and public relations firm representing trawl fishermen and groundfish processors at the state and federal levels on issues concerning fisheries, policy, and related issues. It is a private for-profit firm with two branches that include

an “information services” and a “membership” branch. Any individual or entity can join as an informational client; full membership is determined on a client-by-client basis and includes most Kodiak-based processors. AGDB works with the fishing industry and National Marine Fisheries Service (NMFS) to facilitate the management of federal fishery openings and closures through provision of catch and processing information. AGDB provides weekly updates for BSAI and Gulf of Alaska fisheries and assists clients in developing fishing and processing business plans. Two other Kodiak-based organizations that may be seen as part of this category are the Kodiak Seiners Association and the Kodiak Set Net Association. These were both organizations formed in response to the Exxon Valdez oil spill, and both continue to be involved with legislative issues on an ad-hoc basis.

There are also a number of small, loose-knit organizations representing specific harvesting sectors within commercial fisheries in Kodiak. These are typically grassroots groups that do not maintain a professional staff but are active on what are perceived as key issues as they arise. A number of these organizations have been established to represent vessel skippers and crew in regulatory change, IFQ, and rationalization processes because, in the words of one representative, “the guys on deck are the last to know” about the impacts of potential management changes. Issues of recent concern to these groups have included absentee vessel ownership, share distribution, formation of co-ops with processor linkages, and state and federal fishery harmonization. Though available time did not permit follow-up and interviews with each group, the following are a few that represent the variety of organizations active in Kodiak: the Alaska Jiggers Association, representing small jig boats; the Fish Heads, representing skippers and crew; the Old Harbor Fishermen’s Association, representing small communities and their interest in obtaining quota shares for communities outside the city of Kodiak; and the Kodiak Fishermen’s Wives Association, a group supporting local fishermen.

3.2 Harvesting

Community Harvester Quantitative Description

Communities also directly benefit from the harvest sector through participation of residents as crew members as well as through the engagement of vessel owners and permit holders. Beginning in 2000, CFEC has produced estimates of crew members by community, based on the number of permit holders in the community, plus the community residents who have applied for a Crew Member License with ADFG. Table 19 provides estimates of crew members for Kodiak for the years 2000 through 2006.

Table 19. Estimated Number of Permit Holders and Crew Members from Kodiak 2000–2006

Year	Permit Holders	Crew Members	Total
2000	656	1031	1,687
2001	CFEC did not develop this report for 2001		
2002	617	772	1,389
2003	600	752	1,352
2004	586	730	1,316
2005	598	702	1,300
2006	575	715	1,290

Note: Includes Chiniak.

Source: CFEC permit holder and crew member counts by census area and city of residence report, accessed via www.cfec.state.ak.us/Mnu_Summary_Info.htm.

Community Harvester Characterization

The Kodiak fleet is primarily composed of multigear and multispecies boats. 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 shoreplant 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, as noted in the processor discussion below. Most of the boats that deliver to Kodiak processors are multipurpose 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 owner interviewed reported that he fished for more than 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. Among plants that run pollock, there is a bimodal distribution of trawl fishing power. The larger plants typically have 8 to 10 trawlers working with them, whereas the smaller plants typically have 4 or fewer trawlers in their pollock fleet. 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 (when openings occur). There is a small fleet that fishes for Dungeness crab as well.

Fleet sizes are smaller now than they were when local shellfish was a larger part of production. Interview data suggest that prior to the implementation of the AFA in the Bering Sea, the Gulf of Alaska 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 it 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 number of boats to keep production lines busy all of the time, but with a trawl fleet’s capacity to catch groundfish, harvest can easily exceed a processor’s capacity. Since implementation of the 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 Gulf of Alaska, a “race for history” in the Gulf has resulted, with at least one new processing entrant and inefficient practices that tend to accompany such “race” conditions (see processing discussion below).

A strategy of 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.

Conversions also take place within the trawl fleet. For example, there is a switch in nets for midwater or pelagic trawling to bottom trawling when going from pollock to cod, and according to field interviews, almost all local trawlers have both types of nets. Medium-sized and 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- to 120-foot range, will usually leave their trawl gear on and not make any conversions, unless they are going tendering for salmon or herring. There have been a number of recent changes in conversion patterns, however, and this has resulted in changes in flexibility as the nature of some of the fisheries has changed. For example, in the not-too-distant past, vessels could trawl the better part of the year, so a number of them sold their pots and abandoned the fixed gear fishery. Also, according to local sources, the Kodiak area Tanner quota has been so small in recent years that the bigger boats “can’t justify going out,” effectively limiting their flexibility.

3.3 Processing

Community Processor Characterization

Kodiak’s shoreplants have played a significant role in the history of community, influencing its economic and demographic patterns over the years. Even among the eight major contemporary processing plants there is a considerable amount of diversity in the size, volume, and species processed. It is this diversification that best characterizes Kodiak’s ability to weather the ebbs and flows of an industry dependent upon changes in the viability of the resource being harvested, the market itself, and past/future regulatory shifts. Locally based processors vary in product output and specialization, ranging from large quantity canning of salmon, processed at several different locations within Kodiak, to fresh and fresh-frozen products, as well as niche markets servicing the sports-fishing industry.

Table 20 provides summary average annual employment figures for Kodiak plants for the period 1999 through 2002. As noted in the subsequent individual operation discussions, current employment varies considerably during any given year as plants will add a shift, hire additional employees, and maximize processing and freezing capabilities during various seasons and season overlaps. These adaptations are required since various species need separate processing lines, machinery, and crews. At other times, especially at year’s end, the plants have little, if anything, to process and will reduce employment to a level sufficient to cover maintenance and off-season project needs while minimizing overhead costs. All of these factors should lead to caution when looking at “annual average” employment figures. Further, it should be understood that the available data only cover a few years and do not portray important longer-term trends that would require data from the years before 1999 and after 2002 to illustrate. For example, as detailed in subsequent discussions, a number of the plants included in this table were no longer in business

at the time of fieldwork in late 2004; others have changed hands in the interim. In general, declines in a number of fisheries have taken their toll on Kodiak over the years. Despite these limitations, the data do allow a look at the relative scale of different processing entities in the community during this window. Current (2008) employment estimates for each processor are provided in the individual discussions below.

Table 20. Annual Average Employment by Kodiak Shore-based Processors, 1999–2002

Processor	1999	2000	2001	2002
Ocean Beauty Seafoods	337	338	342	206
Trident Seafoods Corporation	100	184	184	188
Cook Inlet Processing (Polar Equipment)	206	228	191	1
North Pacific Processors	218	198	222	182
True World Foods (formerly International Seafoods)	208	147	126	157
Global Seafoods Kodiak LLC	7	137	74	1
Western Alaska Fisheries	137	110	126	133
Alaska Fresh Seafood	36	41	38	40
Kodiak Salmon Packers	21	29	28	1
Kodiak Fishmeal Company	17	16	17	17
Wards Cove Packing Company	3	14	20	9
Island Seafoods	6	9	13	44
Kodiak Seafood Processing	15	4	3	1
Kodiak Smoking & Processing	3	3	6	6
Total	1,314	1,458	1,390	986

Source: McDowell Group 2002; Department of Labor and McDowell Group Estimates.

While the presence of local processing has been a constant in the community, individual operations have substantially different histories and have undergone a variety of changes in recent years. For example, among the large plants processing groundfish and salmon in the community, the facility now operated by Trident Seafoods centers around a converted World War II “Liberty Ship” that was reportedly brought to the community by previous owners (Alaska Packers) in the wake of the devastating 1964 earthquake to become the first plant up and running after that disaster. (This facility apparently later operated under the names All Alaskan and Tyson Seafoods before being acquired by its present owner.) Ocean Beauty, on the other hand, operates in a facility originally built in 1911, which was the oldest and largest seafood production facility in Kodiak when it was purchased in the 1960s. In 1967, B&B Fisheries opened its doors, which became Western Alaska Fisheries in the early 1970s, and is still in existence today. Ownership type also varies widely. For example, International Seafoods of Alaska (ISA) is a wholly owned subsidiary of True World Group, Inc., which is in turn owned by the Unification Church. In contrast, Alaska Fresh Seafoods (AFS), a smaller plant, has been in operation since 1978 and is owned, in part, by Kodiak and other Alaska fishermen.

All plants feature busy and slow periods during the year, but these peaks and valleys differ at least slightly for each processor, based upon the dependence of processor to fishery or the relationship between fleet and processor. This seasonal pattern has also changed with changes in the fisheries. For example, earlier (2004) interviews with processing plant personnel pointed out how the role of halibut has changed in terms of local processing since the implementation of the halibut IFQ management program, with three-quarters or more of all halibut going to market as a fresh product, as opposed to perhaps one-quarter before IFQs. This has not only changed the role of halibut in individual operations, it has also resulted in a different pattern of landings, with

the economics of the fresh market favoring road-connected ports over Kodiak for at least some harvest areas. More recently, BSAI crab rationalization has shifted the periods when BSAI crab is run at the local processors.

With regard to the workforce among Kodiak processors, the large majority of plant workers in Kodiak are drawn from the local labor pool. While some workers still come to the community specifically for processing work opportunities, in the past 20 years, the importation of short-term workers by the processing companies themselves has become less and less common. As of 2008, among all major Kodiak plants, only Trident reports bringing workers into the community on a 6-month contract basis and providing them bunkhouse quarters, similar to the pattern seen in the years before the development of a large local workforce. In the not-too-distant past, Ocean Beauty and Western Alaska Fisheries both utilized bunkhouse facilities during peak seasons, but neither continues to do so. (Alaska Pacific Seafoods [APS] has retained a small bunkhouse, but this is used only as transitional housing for workers new to the community; ISA has a bunkhouse but rents out spaces to workers as a more-or-less traditional landlord rather than providing living quarters as part of a room-and-board living arrangement; Western Alaska Fisheries will rent housing on a temporary basis for transient student workers during peak seasons but otherwise does not provide housing for its workers.) This high reliance on the processing workers from a local labor pool differentiates Kodiak from other major processing communities in the southwestern part of the state, such as Unalaska, Akutan, King Cove, and Sand Point. Major processors in each of these communities still retain a relatively transient labor force approach to staffing processing plants. In January 2005, however, in a departure from the local pattern, Western did hire seasonal workers from outside the community for the early peak cod season but did not offer housing as part of the employment agreement. This ended up causing considerable concern in the community as, according to local newspaper accounts, about 80 people hired through Alaska Job Service in Anchorage arrived in the community prior to the start of the season without having made housing arrangements (despite knowing that they needed to do so) and without sufficient resources to care for themselves prior to earning their first processing paycheck. This, in turn, proved to be a challenge for local service providers, as the unprepared workers utilized local shelters for immediate food and housing needs. While this may have been an isolated incident, it illustrates the continually changing nature of attempting to meet peak processing demands over time. The following sections provide a description of each processing plant, its products, annual round, fleet, peak seasons, and workforce. The discussion is further divided into plants that currently process rationalized BSAI crab and those that do not.

Seafood Plants

Ocean Beauty Seafoods is a major producer of fresh, frozen, and canned salmon but participates in a range of other fisheries as well, including cod, pollock, rockfish, flatfish, perch, and herring, along with local Tanner (when open) and Dungeness crab and halibut. Ocean Beauty management reports that the plant essentially runs all available commercial species. Production is year-round, with the exception of a dead period from mid-November through the end of the year. While in years past, plant management characterized that about 50 percent of their business related to salmon processing while groundfish made up almost all of the remaining half, groundfish has been relatively more important in recent years, but annual fluctuations occur. With regard to groundfish, cod is the most economically important to the plant, with pollock, rockfish, and flatfish following. Dungeness and halibut were once more important but now are considered “filler” runs.

Ocean Beauty is one of the few shoreplants that still engages in canning operations. It cans pink salmon, while all other species are sold frozen or fresh. Its busy seasons are January through March, when pollock and cod are processed; June through August during the salmon runs; and then again during the fall pollock and cod seasons during September and October. On-site employment peaks at around 225 during the January-March and June-August busy seasons, when employees can average 60- to 70-hour workweeks. Ocean Beauty's workers are drawn from the local residential workforce, with the exception of a few machinists who are brought in for the summer busy season, but who are otherwise employed in the company's Pacific Northwest operations, and temporary processing hires that augment the regular workforce during the highest peaks. The plant maintains about 20 to 25 people working 40-hour workweeks when processing is not occurring.

Ocean Beauty maintains an ongoing and relatively steady relationship with the same fleet every year, with the current (2008) fleet reported to be very similar to the one characterized in 2004, although Ocean Beauty neither owns any vessels nor has formal contracts with delivering vessels. For groundfish, the fleet includes 4 draggers, 25 fixed gear vessels, a small number of pot gear vessels, and occasional deliveries from transient vessels. For salmon, approximately 55 seine vessels and 30 set gillnet site fishermen deliver to the plant. Ocean Beauty also operates a seasonal plant at Alitak, near the village of Akhiok at the southern end of Kodiak Island. Open from April 15 through October 1, this plant processes salmon delivered from 25 seiners and 30 set gillnet sites, along with halibut, black cod, and herring. Because Ocean Beauty's Kodiak shoreplant is geared for canning and freezing salmon, as well as processing groundfish and other niche species, it allows plant management the flexibility to "try and buy as much as we can, of anything we can, as long as it makes economic sense" in order to keep the facility running efficiently. This variability and diversity are typical of the mid-size plants, and some larger plants, on Kodiak. Whereas, in the late 1970s, each plant seemed to have a special niche, because the profit margin is smaller now than in the past, there is a greater need to run a variety of fish to cover overhead. Plant personnel reported that two changes have occurred in the recent past: through diversification, running both salmon and groundfish, Ocean Beauty is better able to spread the risk and lessen the potential of losing a particular market, and the demand for value-added processing, including fillet and portioning as well as relatively new products such as freezer pouches and pop-tops, has grown exponentially. With regard to domestic versus overseas shipping of product, the balance between the two fluctuates in response to market conditions, but almost all salmon product continues to ship to domestic destinations.

APS, a division of North Pacific Seafoods, was the first American plant to produce surimi. The surimi operation was started through a National Oceanic and Atmospheric Administration (NOAA) grant in 1985 and made surimi every year until 2003, before discontinuing surimi production due to market forces. Processing has become diversified over the years, and now includes salmon, sole, groundfish, pollock, flatfish, herring, and local Tanner crab (when open), along with some BSAI crab. While APS used to have a nonstop workflow with very few peaks and valleys, maintaining this pattern has become more difficult since the late 1990s. APS used to bring in employees from outside the community in the 1980s and early 1990s, when they were operating four cannery lines. They have since moved from canning to frozen products and have not used the bunkhouses since the late 1990s, employing long-time Kodiak residents instead. Use of local residents also has brought with it flexibility and, as a result, APS processes more

niche species, such as sea cucumbers, which enables the plant to maintain a constant crew, sustain the fleet that brings them higher-value products, and better control overhead.

In terms of an annual round, at present (2008) January through March is characterized as a busy period as cod, pollock, sole, and some crab are processed. April sees sole and herring processing but is somewhat less busy, and May is a slow month. June picks up with rockfish, but the pattern has changed in the past few years with the rockfish rationalization pilot program (implemented in May 2007), and July through August are peak activity months, due primarily to salmon being run in combination with rockfish and pollock. September and October feature mostly cod and pollock processing, and some crab processing has occurred toward the end of the year. APS maintains a core labor force of approximately 110 people who are long-time Kodiak residents. This stability reportedly benefits the employees as well as the plant, as with steady employment comes increased benefits, such as insurance. During the busy seasons, the crew increases to between 190 and 200 people, and the plant runs in two shifts per day during the peak times. During slow periods, the number of crew on-site varies, depending on availability and volume of niche species, such as sole and herring. The trough of plant employment has typically occurred in November and December when the plant maintained a small crew of 6 to 8 people at 40 hours a week, as well as others to perform maintenance and cleanup for a few days per week, but this is somewhat variable with recent changes from BSAI crab rationalization. APS does not typically supply processing employee housing, but it does have a small bunkhouse that is often used as a transitional housing source for those new to the community or for peak housing demand, such as immediately after the completion of the Bristol Bay salmon season when 20 or 25 workers transitioned to Kodiak.

The plant takes deliveries from approximately 160 vessels during a year, but there are about 20 “core” versatile vessels that deliver salmon and participate in a range of other fisheries. According to plant management, there are another 20 or so multispecies vessels that are mid-range and relatively steady in their delivery volumes, with the balance of the delivering vessels supplying landings to the plant in “dribbles.” With regard to groundfish, APS maintains steady delivery relationships with six trawl vessels and eight fixed gear pot and longline vessels. All but two of these have IFQ for halibut and black cod. With regard to halibut, the market has become more competitive; APS’s approach is to maintain a good relationship with the vessels bringing in halibut because those same vessels are also bringing cod, crab, and pollock. Although the market has shifted to Homer and is not as much of a “money maker” as it used to be, APS reports it still benefits by maintaining ongoing relationships with vessels and key customers alike. For example, in recent years shipping halibut via the airlines was reported to help maintain steady air cargo freight prices for the company throughout the year. Similarly, as halibut is purchased, it keeps a steady relationship with the vessels when APS needs cod or pollock.

Alaska Fresh Seafoods (AFS) is a small plant that has been in operation since 1978. AFS was originally half-owned by fishermen, and two private owners, a broker in Seattle and a Kodiak resident. While the AFS corporate office is in Seattle, it is still managed out of Kodiak. According to AFS management, it originally was a crab-only plant (running king, Tanner, and Dungeness), owned in part by Bering Sea crabbers, and was reportedly the first plant in Kodiak to run opilio crab. According to AFS ownership, the plant was fully dependent on crab from 1978 until the crab crash of 1982. In the mid-1980s, the plant diversified into cod and halibut, among other endeavors. Over the years processing focus has continue to evolve and at present

(2008) AFS typically processes cod, halibut and halibut by-catch species (skate and black cod), some red salmon, and king crab. Additionally, AFS “started in earnest” on Dungeness crab in 2007 (with deliveries being made by a single vessel). Overall, AFS management reports receiving fish from an average of 158 vessels annually, consistent with what was reported in earlier years. Of these, 95 have halibut IFQs and vary from 80-foot vessels to small skiffs. Local management estimates that in 2007–2008, deliveries were taken from about a half-dozen Bering Sea crab boats.

While there is some flow of processing year-round, processing focus changes throughout the year as AFS processes cod in January; halibut and skate, a by-catch of halibut, beginning in March; black cod May through August; and king crab in November, with the timing of the latter influenced by the shift to BSAI crab rationalization as local deliveries reportedly now only occur at the very end of the lengthened season. Slow periods do occur during the summer and late in the year. July and August are typically slow when the salmon fleet is out. November is also typically slow except for king crab processing, and the plant shuts down altogether around December 15 and remains closed through the holidays. Otherwise the plant is characterized as relatively busy year-round.

A core crew of about 12 people work 40-hour weeks at AFS throughout the year. This number easily doubles during the busy seasons and can reach a maximum of 40 to 45 people during peak periods. At present (2008) approximately 18 people work in the January through March period when processing is dominated by cod. Within this period there is an opilio “bump” of about 2 weeks in late February/early March when there are around 40 workers on-site. With increased halibut processing from April to June, the workforce includes approximately 30 people. There is another labor peak in October primarily related to halibut and black cod that lasts until mid-November. With BSAI crab rationalization, crab processing now occurs in late November and can last into the first week of December. According to plant management, the peak workforce has changed from domestic college students who years ago came to Kodiak to work during peak periods, to a primarily local workforce today. AFS does not have bunkhouse facilities, nor does it otherwise provide room and board for its workers. While some college students are still seen during peak summer periods, reportedly these are all individuals from overseas rather than from U.S. colleges. Similarly, AFS reported that it was common, not so long ago, for USCG spouses to work prior to the holiday season in the fall, but this apparently no longer occurs either. In addition to adding workers during peak periods, shifts also lengthen, ranging 10 to 16 hours during the busy seasons.

One of the major owners of AFS also has ownership interest in a company (Woodruff & Associates) that has provided pot storage services to the crab fleet over the years. According to the owner, 100 percent of the customers of this business used to be fishermen, but with decline in pot storage demand, the business has diversified into moving and storage, including camper storage. Part of the drop in demand in business was reportedly related to pre-crab rationalization changes in pot limits, which apparently caused vessels to store more gear out west rather than in Kodiak, although the business owner has stated that BSAI rationalization itself has caused an approximately 30 percent drop in revenue for the business.

Trident Seafoods currently (2008) processes pollock, rockfish, flatfish, halibut, and Pacific cod at its Kodiak facility. Unlike a number of other Kodiak plants, Trident does not process salmon. Trident seeks to differentiate itself through the production of top grade surimi and value-added

products through their own packaging. The majority of their products are frozen, such as H&G, fillets (frozen, shatter pack, block), and surimi, although fresh fillets are also produced. Trident's peak periods have changed in recent years, and overall processing is steadier throughout the year now than was the case even a few years ago. This leveling of processing effort was reportedly facilitated to a substantial degree by the rockfish pilot rationalization program that began in May 2007 and shifted rockfish from a summer peak fishery to primarily a May to June fishery. The reduced halibut bycatch in rockfish fishery, which was rolled over into the flatfish fishery, allowed the flatfish processing to continue at the plant until the first week of December 2007. Busier periods, if not as dramatic as in the past, are still seen around pollock and Pacific cod openings. The plant also processes halibut and black cod "as it comes in," but these do not represent peak fisheries.

Local Trident management staff reports a relatively stable workforce throughout the year of about 250 individuals, of whom about 200 are Kodiak residents on-call and approximately 50 of whom are brought to the community on a 6-month contract basis. The latter group is recruited out of Trident offices in Seattle and lives in Trident bunkhouse facilities during their stay in Kodiak (while the Kodiak resident processing workers do not stay in company housing). The specific number of workers on-site on any given day is a function of how fish deliveries come into the plant. This is quite a different pattern than was described by plant management in 2004, when workers were shifted between Trident plants in Kodiak and elsewhere to balance workforce requirements across plants in different communities that had different peak demand cycles. At present, an additional 20 to 30 workers may be brought in on a temporary basis during particularly busy times, but this is not a regular occurrence. During the peak periods, there are typically two 12-hour shifts run, although shifts can last up to 16 hours. The Trident Kodiak plant has for quite a few years maintained a steady relationship with the same dozen pollock, cod, and rockfish vessels, some of which also participate in hake fishery in the Pacific Northwest.

Western Alaska Fisheries processes cod, pollock, local Tanner crab (when open), flatfish, salmon, and rockfish, with a heavy emphasis on groundfish. According to plant management, groundfish provides over 90 percent of its product sales; about 8 percent is salmon; and the remaining 2 percent is a combination of crab, herring and halibut. Western does no canning, focusing on a variety of frozen and fresh products. Frozen groundfish products include fillet, surimi, pollock roe, cod roe milt, stomachs (pollock, cod), heads, and milt (primarily for the Japanese and Korean markets). Fresh groundfish products include head and gut and in the round products from cod and pollock, along with milt. Salmon head and gut and fillet products are processed and sold fresh and frozen. According to plant staff, over 60 percent of Western's business is exported, with 40 percent sold domestically, though changes in both markets are occurring, with Asian markets in a growth cycle. Western reported that while halibut used to be important locally, Kodiak is no longer in a position to compete on prices with communities on the road system, such as Homer.

Western is the only union plant in Kodiak. It employs a core workforce of about 120 people, but total employment fluctuates with the season. January through March marks the first busy season for Western, with cod, pollock, and Tanner crab being important species. According to plant management, during this time, the numbers of employees increase to around 180 to 200 full-time equivalent staff, covering 10- to 12-hour shifts per day. During May and June, activity at the plant has reportedly been helped by the rockfish rationalization pilot project that is now (2008)

about 2 years old. (The program has allowed the plant to move rockfish into what was a slow time, improving processing flow at that time of year, as well as moving it away from overlapping with peak salmon time, when it was problematic to handle.) Processing speeds up again from June to August when salmon seasons open and continue into the fall. At this time, around 180 to 200 people are working full-time processing salmon, rockfish, cod, and pollock, the latter of which reopens on August 25. Employment is pared back to the core crew of approximately 120 for the November to early December period when flatfish are being run at the plant. At the end of December the plant is basically down except for maintenance. Workers at the plant are typically local residents, although the plant does supplement its local labor force with about 40 to 50 students from Turkey (arranged through a third-party service) during the summer salmon season. Reportedly this arrangement has been in place for several years and has worked out well for the plant, which rents housing for these temporary workers. During winter peak times another 40 to 50 workers are required to supplement locally available labor, and these individuals are recruited from a variety of places, including elsewhere in Alaska as well as outside the state.

Western's fleet includes 10 trawlers, 6 longliners, 3 to 4 pot cod, and 8 salmon seiners that also harvest herring and local Tanner crab. While the plant used to take salmon from a substantial number of set-net sites (reportedly 40 in 2004), they no longer do so. As a result of Western's ongoing relationships with the same fleet, year in and year out, it processes fish year-round, turning out products in off-seasons, with rockfish a case in point. According to plant staff, "We do things here just to keep our boats happy. We can make surimi fast, to get the guys offloading, back out there, to keep our own people busy." With regard to shipping of products, less than 10 percent of its products is flown out fresh, with the balance surface shipped as frozen products.

The plant operating as Island Seafoods has been in Kodiak since 1995. It did not, however, operate in 1998, changed ownership in 1999, and was acquired by its current owner, Pacific Seafood Group, in 2003. While Island Seafoods is the smallest commercial fisheries processor in Kodiak, according to plant management, Pacific Seafood Group is a vertically integrated firm that owns processing and distribution facilities, is one of North America's largest seafood companies, and continues to grow locally as well. Island Seafoods processes commercial cod, halibut, rockfish, and salmon, and in recent years has also added flatfish, Pacific Ocean perch, and pollock to its range of species. The delivery fleet has also changed within the last few years. An overall strategy, particularly in the first few years post-ownership change, was to work primarily with vessels that are not serviced by the larger processors, including a relatively large number of small-volume entry-level jig vessels. The number of these small vessels delivering to the plant has declined sharply more recently, to perhaps a quarter in 2008 of what was seen in 2004. The plant also takes deliveries from longliners and pot boats, and there has been an increase in the deliveries from larger vessels at the plant in recent years. Plant management reports that overall tonnage through the plant has increased by perhaps 40 percent in the last 4 years (2004–2008). Part of the strategy in this fleet mix is to be well positioned as a sustainable fishery participant in the face of potential future fishery management changes. Island Seafoods obtains its salmon from multiple set-net site owners, which have increased in number substantially in recent years, and from a single salmon vessel.

In addition to being of a smaller scale, Island Seafoods differentiates itself from other local processing businesses by being diversified into other business activities, including selling retail and catering to the sport charter fishing industry, processing and shipping sport fish for the

visitor trade. Island Seafoods also prepares corporate gift packs and sells its products off a website. Related ventures include operating as a Federal Express facility, and future plans to increase sales to the visitor/tourism market include opening a restaurant. These various ventures are characterized by plant management primarily as “add-on sales,” as Island Seafoods sees itself primarily as gaining efficiencies by “eliminating the middle-man” and delivering commercial seafood directly to Pacific Seafood’s distribution markets, with its strength being found in its focus on fresh products and its ability to adapt quickly to American markets. In terms of the relative dependency on different business avenues, Island Seafoods management estimates that less than 10 percent of its total gross sales comes from sportfishing and its retail business, while over 90 percent remains in commercial seafood production. Currently it is estimated that about half of the commercial product stays in the United States while around half is exported.

Like other processors, Island Seafoods has a distinct annual cycle, but with different historical roots. The company began processing sportfishing products only, and, as time went on, it filled in the remaining years with commercial production, until that became the dominant aspect of the plant production. The plant currently (2008) maintains a core workforce of 45 full-time employees (over twice the number reported in 2004) from January through November, with the workforce increasing to about 60 employees during peak salmon season from July through mid-September (about a one-third increase over the peak number reported in 2004). As is the case with other plants, December is a dead period with only a skeleton crew performing maintenance and cleanup tasks. Island Seafoods segregates its sportfish processing operation from its commercial operation not only in terms of physical processing but also in terms of its workforce; 8 or 9 of the summer peak season employees work solely with sportfish processing.

ISA (formerly known as True World – International Seafoods) local plant management reports that although there have been a number of fluctuations in the meantime, their mix of processing species and products and levels of employment are currently (2008) quite similar to what was reported in 2004. ISA processes pollock, cod, salmon, and flatfish at its Kodiak plant. During its busy periods of January through March and June through July, the local ISA workforce is composed of approximately 150 people. In the interim slow seasons, around 40 to 50 employees work at the plant, but labor demand can be difficult to predict on a day-to-day basis as sometimes 16-hour days are followed by several days off between deliveries. In general, ISA now has a smaller workforce than was utilized before the plant was shut down for about 6 months in 2002, during which time it changed hands and operations were reorganized. ISA utilizes a local workforce, although they do maintain group quarters in the form a single bunkhouse, left over from a number of years ago when peak employment demands at the plant were higher, which they rent to workers.

ISA produces a variety of products. From pollock, the plant produces fillet, head and gut, and fish in the round. With regard to salmon, ISA produces head and gut, fillets, and salmon rolls; for cod, products include fillet, head and gut, and round. They do not can any products. Plant management reports that the product mix has changed in recent years, including a greater demand for head and gut going mostly to China, while the overall demand for surimi has diminished. Fresh halibut has been produced in a number of recent years but is not a steady product for the plant. The fleet associated with the plant consists of 30 to 40 vessels, including a number of smaller jig and pot boats, 4 or 5 draggers, and 15 to 20 longliners. Typically, around 15 salmon boats deliver to the plant. Approximately 60 percent of the products originated at the

plant are reported to be exported to Japan, Korea, and China, with a small percentage going to European markets, while fresh cod is sent to domestic markets.

Global Seafoods opened its doors in 1999 and operated for 2 years as a groundfish processing plant. Not financially solvent, Global was then shut down for 2 years and reopened in January 2003. Upon reopening, the plant diversified into other fisheries beyond groundfish, with plant management reporting a tripling of production between 2003 and 2004 through a combination of salmon and groundfish processing and marketing relatively underdeveloped species such as skate and arrowtooth flounder. Currently (2008), the Global management characterizes the Kodiak facility as primarily a groundfish plant, but with an additional strong emphasis on salmon. There is a continuing marketing effort for different groundfish products, such as livers, stomachs, and codheads, as well as a number of species that come into the plant as bycatch, such as grenadiers.

The fleet delivering to Global Seafoods is reportedly currently (2008) similar to the fleet as described in 2004, which included 3 trawlers, 25 to 40 longline vessels, 10 to 15 jiggers/salmon seiners, and 2 pot boats. (A particular niche of the delivering fleet that Global has developed is among Russian-speaking longline captains and owners, as the owner of Global is also fluent in Russian.) In terms of an annual cycle, January to April is a peak period for groundfish (about a month longer than reported in 2004), while the plant is typically closed to deliveries for most of May. Around June 10, cod deliveries will resume, starting a busy period that reaches a peak during July and August when salmon fisheries are in full swing. September and October are again busy months for groundfish, with things slowing down again during November and December. A relatively recent change that has occurred in the annual cycle was brought about by the Gulf of Alaska rockfish rationalization pilot program. Global did not qualify for participation in this program, although reportedly rockfish and particularly a couple of rockfish fishery bycatch species, Pacific Ocean perch and black cod, were considered relatively important to the plant.

Global Seafoods employs about 150 people during peak seasons (down from the approximately 200 reported for peaks in 2004), working two 12-hour shifts. Hires are typically drawn from the local labor pool, with individuals in the core crew reportedly either working at Global or, when seasonal layoffs occur, drawing unemployment benefits but remaining in the community. Approximately 20 to 40 extra workers from outside the community are typically added during the summer salmon seasons, with these jobs being filled in recent years by foreign students (primarily from Turkey). Global had a formal agreement with an agency to facilitate these hires for a few years, but did not enter into such an agreement in 2007. A number of former student workers returned on their own, however, so this particular overseas labor pool continues to be a source of seasonal help. Local management reports that if salmon gets “particularly crazy” they will place job service postings, but typically do not need to do so, as individuals leaving other processors are sometimes available (and prefer not to do so if recruiting proves necessary, as the overseas student hires have reportedly proven to work out better than job service referrals). Global does not provide worker housing but will help outside hires find local housing. During off-seasons, employment at the plant will drop to 12 to 15 individuals.

3.4 Support Services

The community of Kodiak is distinguished from most other Alaskan fishing ports by the number and range of support service businesses that cater in whole or in part to the commercial fishing

industry. Support services include a wide range of companies, including companies that provide direct services to processing plants and harvesting vessels, such as hydraulic and welding firms, as well as indirect service providers that still depend to a degree on fisheries-related activities, such as accounting and bookkeeping services and vehicle rental enterprises. In addition, there are also several educational and governmental entities that operate fisheries-related research facilities in Kodiak. The locally based Fishery Industrial Technology Center, part of the University of Alaska Fairbanks, has two main academic programs, sustainable harvesting and seafood processing, with programmatic efforts focused on harvest technology, processing technology, seafood quality and safety, contaminants, and collaborative ecological research. The Kodiak Fisheries Research Center, owned by the KIB, leases space to various public entities, such as NOAA Fisheries, which with its Alaska Fisheries Science Center staff operate the Kodiak Laboratory on the premises, the Alaska Department of Fish and Game, and the University of Alaska Fairbanks School of Fisheries and Ocean Sciences. Further, NOAA Fisheries research vessel *Oscar Dyson* is home ported in Kodiak. Kodiak College, a 2-year campus of the University of Alaska Anchorage, also offers programs that support the fishing industry and allows residents the opportunity to pursue higher education goals without having to leave the community. Among the communities in the region, Kodiak has the greatest diversity and capacity to support Gulf of Alaska fisheries. The community also serves as an in-state support hub for some of the BSAI fisheries, although Unalaska/Dutch Harbor is far and away the primary support base for that region.

While Kodiak has consistently been a center for support service provision for the commercial fishing industry, the level and nature of service provision have not been consistent, with changes in the fishery driving changes in the support sector. While systematic data on how individual support services have been affected by changes in the local fishing economy are not available, there are a number of qualitative indicators of these impacts, as detailed in the discussions below.

Support services may be characterized in a number of different ways, and not all categories of support businesses are mutually exclusive, as a single enterprise may supply a range of services. Further, there are a number of providers of goods and services in the community whose businesses may feel the impact of fishery-related activity, but they are not directly connected to the fishery. For the sake of simplicity, however, the following discussion of Kodiak support businesses is organized by general category (shoreplant support, vessel support, and shipping) and limited to direct service providers.

The following business characterizations were derived from limited field interviews conducted over a brief period of time. It was not possible to contact all support service businesses in the community, and these sketches are intended to convey the types and nature of these businesses in the community, and their links to the fisheries, not provide an exhaustive inventory of Kodiak support service businesses. For the purposes of this report, a premium was placed on re-contacting businesses that were included in interviews in 2004 in a pre-BSAI crab rationalization social impact assessment effort.

Shoreplant Support

One specialized support niche in Kodiak is fish waste processing, which may be considered either a form of processing or of fishery support. According to earlier (2004) interviews, Kodiak Fishmeal Company is dependent upon the biowaste from the processing plants to produce a high

protein product known as fishmeal, along with fish bone and fish oil. Fish waste is ground into a consistent size, and the moisture is extracted. Fishmeal is reportedly the largest and most valuable end product and is primarily sold to the aquaculture industry in Asia as a feed component. The market for fishmeal continues to grow, and two forms are produced in Kodiak: white fishmeal and dark fishmeal. Fish bone is used primarily as fertilizer, and fish oil is either used to run the fishmeal plant boilers or is sold to the aquaculture industry. While a fishmeal plant was operating in the community in the early 1990s, it had a limited capacity such that processors still disposed the remaining majority of the waste by loading it onto barges and discharging it into the ocean. According to those earlier (2004) interview data, the impetus for the current larger-scale operation began in the mid-1990s when the U.S. Environmental Protection Agency demanded that Kodiak processors more closely adhere to federal environmental regulations, risk significant fines, or face a shut-down. At that time, again according to interview data, seven processors formed the Kodiak Fishmeal General Partnership and built a new biodrying plant to handle large amounts of waste per day.

Processing plants in Kodiak, like processing plants elsewhere in Alaska, are to a significant degree self-supplied from outside of the community, given relative ease of shipping and existing business relationships outside of Kodiak. Nonetheless, processing plants do economically interact with various support sector businesses on Kodiak to a degree not seen in more isolated communities such as Unalaska, Akutan, or King Cove, through purchasing groceries for their galleys, fuel purchases, local maintenance contracts, and purchases of various parts and supplies in the community. These include electronics, metal fabrication, hydraulic maintenance, and hardware purchases, among others. These businesses are typically primarily oriented toward vessel support and are described in the next section.

Vessel Support

Kodiak has a well-developed range of support service businesses that are primarily oriented toward commercial fishing vessel support. It is important to keep in mind, however, that many of these same businesses also support processing operations, if to a lesser degree. As noted above, there are quite a few such businesses in Kodiak; the businesses described here—marine hardware/gear supply, hydraulics, welding, marine electronics, marine mechanical, marine fuel sales, general stores, and boatyard services—are only a subset of some of the different types of support businesses present in the community and the individual firms mentioned are usually only a subset of the particular subsector noted.

Marine Hardware/Gear Supply

One type of direct fishing vessel support service is marine hardware supply, and there are at least three businesses in the community that fall in this category. These are Net Systems Inc., Kodiak Marine Supply, and Sutliff True Value Hardware. While Net Systems Inc. and Kodiak Marine Supply focus on marine equipment, Sutliff supplies a local residential market as well as the commercial fishing industry.

Net Systems produces trawl and seine web and cable, provides custom rigging and splicing services, and has a specialty in selling large-scale hardware such as load-bearing swivel as well as pumps and motors for pumps. The degree of dependency on the fishing business may be gauged by management reporting that the trawl business accounts for about 70 percent of

revenues, while commercial fishing as a whole accounts for around 85 to 90 percent of Net Systems' overall business. Over the years, however, the business has seen a great deal of change related to transitions in the local fishing industry, especially the salmon industry. From the late 1980s through the mid-1990s, Net Systems reportedly employed 12 staff, but currently (2008) has 2 regular employees, a level of staffing consistent with what was reported in 2004. There has, however, been an improvement of business conditions in the last several years with a rebound of the salmon fishery, which has reportedly easily doubled seine-related business in the last few years. There is a pronounced cycle to the business with about a 10- to 20-day rushed period in January building up to the pot, jig, and longline cod fisheries and the A season pollock fishery all opening within a few days of each other. Business is relatively slow following the winter fisheries, ramping up again in early June when fishermen are gearing up for salmon openers. The largest pulse of business occurs during July and August salmon fisheries, although rockfish effort, which used to overlap with the peak salmon season, has shifted forward in the year as a result of the implementation of the rockfish pilot rationalization program. Another peak occurs in early October for pollock reopening, but this is variable in intensity from year to year depending on how much pollock is left over from earlier seasons and the relative success of the concurrent flatfish fishery. When local Tanner seasons are open there is also some activity related to the local crab fleet gearing up in the fall.

According to a senior employee, the BSAI crab fleet never generated a lot of business for Net Systems in Kodiak as crabbers typically supplied directly out of Seattle. In the past, some last-minute items would be sold, along with some crab webbing, but as an indication of how slow these items have moved, reportedly Net Systems bought their last bale of crab web 6 or 8 years ago (long before rationalization) and still has some left. According to senior staff, the fleet consolidation that accompanied BSAI crab rationalization has not affected Net Systems direct sales, because Bering Sea crab-related business was minimal to nonexistent in the years leading up to rationalization. The business has, however, reportedly seen some indirect impacts from BSAI crab rationalization as a result of job losses among former BSAI crab boat crew members who would formerly utilize BSAI crab income to purchase gear at Net Systems for their own local multispecies vessels participating in other fisheries.

Kodiak Marine Supply carries a variety of fishing supplies and gear, commercial fishing-oriented clothing and personal items, hardware, lines, maintenance supplies, and paint, among other items. Kodiak Marine Supply averages approximately 10 employees throughout the year. There are busier and slower times of the year, with January being a busy period along with May through early June.

Sutliff True Value Hardware reports that about half its business is fishing related, while the other half of its sales include housewares, paint, clothing, building supplies, lawn and garden, and nonmarine hardware supplies. Sutliff used to carry marine supplies such as longlines, hooks, and snaps, but, as a result of rationalization of the halibut fishery, they reported that the effective removal of openings and closings has resulted in increased lead time for purchases, removing the "urgency-to-buy" prior to season openings and resulting in a shifting of purchases off-island. At the same time, internet commerce became popular, providing price-competitive alternatives and greater access to hardware and materials outside of Kodiak. Inventory now includes such things as rain gear, clothing, pumps, survival suits, boat repair tools, anchors, emergency locator beacons, and shackles rather than fishing gear *per se*. Store staff have characterized two primary busy seasons related to fishing: salmon season preparation in the early summer (when purchases

are made for the immediately upcoming seasons) and salmon season cleanup in the late summer (when purchases are made for vessel and gear repair tasks during the off-season). Summertime (June through September) is characterized as the busiest time for nonfishery sales.

One common thread in previous (2004) interviews with the marine supply business sector was the observation of the changes brought about by a transition to IFQs in the halibut fishery. Before halibut IFQs were in place, personnel from each store described a rush of sales immediately before each opening during the year. After the IFQ system was in place, the rush was significantly reduced because fishermen, no longer in a race for fish, were no longer driven by the necessity of making immediate purchases. This changed the balance of the “time versus money” equation, giving fishermen the option of “waiting it out,” performing price comparisons, or purchasing items off-island. It would appear that BSAI crab rationalization has extended this trend, at least to a degree. At the same time, a number of other changes were occurring that may have served to soften the traditional marine hardware market locally, including the growth of the internet, which created a new array of direct-purchase options for customers, and new entrants into related markets, such as the opening of a Wal-Mart store in the community, which occurred prior to (but relatively close to) the implementation of BSAI crab rationalization. While Wal-Mart is reportedly not a direct competitor when it comes to providing specialized marine hardware, other commercial fishing-related purchases, such as clothing, personal items, paper goods, and miscellaneous spot purchases, may be affected.

Hydraulics

There are two hydraulic shops in Kodiak that are primary providers to the local commercial fishing sector, Alaska Hydraulics and Island Hydraulics. As with the other support service businesses, these companies report that as a result of the change in “derby” style fishing seasons in some fisheries, vessel owners have more time to shop around or they may choose to make repairs themselves, leading to less work for the hydraulics businesses, less impulse types of purchases, and a more predictable flow of business, but at the expense of reducing if not eliminating some of the profitable peak demand periods. At the same time, other trends are reported that have offset these decreases.

Alaska Hydraulics, which has a full machine shop, manufactures hoses, and performs a variety of other manufacturing and repair services, has been in Kodiak since the 1970s, with a second shop in Anchorage. Alaska Hydraulics estimates that currently (2008), about 90 percent of their current business in Kodiak is fishing related, which is consistent with the figure reported in 2004. Most of the vessel support work takes place on board vessels themselves as opposed to in the shop. Most of the work is associated with trawl vessels and salmon seiners, although historically there had been a spike in activity just before local Tanner crab season (when open) and Bering Sea crab fisheries as well. Salmon-related activity results in a busy period in the early summer, but trawl vessel work is more evenly spread throughout the year. Alaska Hydraulic also provides technical support to remote salmon sites and troubleshooting problems via phone and e-mail. Processors remain important customers for Alaska Hydraulics, with about 70 percent of the processing-related work being in the form of supplying parts, and the remaining 30 percent being field service-related tasks. Alaska Hydraulics currently (2008) employs nine persons, up from six reported in 2004, all of whom are local residents.

According to company management, Alaska Hydraulics business has grown in recent years and has not felt significant impacts from BSAI crab rationalization, due to a number of factors not directly related to crab rationalization itself. First, because of high fuel prices, more boats are staying in Kodiak rather than returning to Seattle and are getting boat work done in the community that would have otherwise taken place in Seattle. Second, the local salmon fishery has rebounded in recent years, improving that segment of the business. Third, Alaska Hydraulics gained market shares when a competitor, AIM, went out of business and the work load effectively was redistributed among remaining local firms. Fourth, a number of local vessels that did crab in the BSAI but no longer do so have remained customers as they have subsequently tendered salmon or otherwise participated in other fisheries. In other words, while direct crab business may have diminished due to BSAI crab rationalization, other variables in play occurring during the same time period have served to offset any negative impact to the facility's local bottom line.

Island Hydraulics has been in business since 1987 and includes a full machine shop, manufacturing hydraulic hoses for boats and providing repairs. Island staff report that approximately 85 percent of its business is generated through fishing/marine services, with the remaining 15 percent attributable to servicing the trucking industry. Island Hydraulics currently (2008) has three steady employees, all of whom are local residents, up from two employees reported in 2004. Consistent with a pattern reported in 2004, interview data suggest that while there is relatively steady work throughout the year, there are marked increases seen 2 weeks before each major fishing season opens as preparations for openers are made. The last half of December and early January are the busiest seasons. Within the overall commercial fleet, most work currently derives from trawl vessels, as the hydraulic equipment is larger, more complex, and more difficult for nonspecialists to repair. While this has been true for quite a number of years now, in the more distant past a higher relative volume of repair work was associated with crab and salmon seasons, although with improvements in local salmon fisheries this work has begun to increase again in recent years. Island Hydraulics also remanufactures cranes at the processing plants, though this is characterized as "a tiny portion" of their overall work. Recently the company also added a crane truck to its operation that is more than twice as large as the largest boom truck utilized by another local business. This has had the effect of diversifying Island Hydraulics' business without directly competing for the same market niche pursued by the other established business. Island Hydraulics uses their truck, for example, to pull large trawl winch motors, which require lifting capabilities beyond that of other operators. This crane truck is also too large to efficiently do pot lifting for a hauling/storage operation, which is performed by other firms in the community with smaller boom trucks.

Welding

The community of Kodiak is also home to a number (at least seven, as of 2004) of different welding operations of various scales, including several independent, one-man shops. Two of the local welding shops have a specialty of servicing the fishing industry, with the larger of the two being Arc N' Spark Welding. Arc N' Spark, which began in the mid-1970s, had 9 employees as of 2008 (reportedly employing the largest number of welders in Kodiak), which is the same number as reported in 2004, down from 14 welders in the late 1980s. (Reportedly, a number of the independent welders in Kodiak gained training and experience through Arc N' Spark.) The owner of Arc N' Spark estimates that around 95 percent of their business is commercial fishing related, which is an increase in fishery dependence over what was estimated in 2004 (80

percent). Arc N' Spark has customers among vessels of all of the different commercial fleets that operate out of Kodiak, although some generate more business than others. Reportedly, king crab was an important part of the business in its early years, when Arc N' Spark built crab pots before shifting toward fabrication and repair (with no pot building occurring in almost 20 years). In addition to welding *per se*, Arc N' Spark offers tooling services, welding supply sales, boat fabrication and repair services, and services related to the use of its heavy-duty metal rolling and bending machine.

For Arc N' Spark in particular there are a number of busy and slow seasons tied to different fisheries, with busy seasons typically occurring in the month prior to openings rather than during the seasons themselves. December, a slow month for fishermen and especially processors, is a busy month for Arc N' Spark due to the multiple fishery openings in January. March and April see business ramping up again, with May being a particularly intense month due to the impending salmon seasons. June marks the end of "frantic salmon preparation." The summer and fall are less busy, with intensity picking back up again in November. During good fishing seasons there will be more in-season work than normal as heavy fishing puts more stress and strain on the gear, leading to break-downs and repairs, but generally off-season business is of greater volume than in-season business.

Arc N' Spark also operates two boom trucks used for a number of purposes, such as pulling small boats out of the water and moving fishing gear, including crab pots and salmon seines. Reportedly, this component of the business has changed in recent years, with very little crab pot movement now taking place. With a capacity to haul 17 to 20 pots per trip, Arc N' Spark reportedly sees only three to four pot hauling jobs per year at present (2008). The owner of Arc N' Spark reports that pot hauling in general is a business in decline in Kodiak, and not just for his particular business. Kodiak boats apparently tend to store more gear out west than in years past. The lower volume of Kodiak stored gear is now often handled either by local processors, using company equipment rather than a third-party hauler, or by the vessel owners themselves, many of whom have a truck and a trailer to handle their own gear.

The results from past projects would suggest that different welding firms may have been affected to different degrees by changes in the fishing industry over time. One welder interviewed in 2004, for example, noted that when halibut moved to an IFQ system, his company was not adversely affected even though fleet consolidation occurred. He reported that although there are fewer boats to work on, those he did still work on were larger and more complex than the average vessel before IFQs and the end result was about the same in terms of dollar value of welding work for his firm. In this case, it may be that it was inherently easier a smaller operation to adapt to changing circumstances involving a drop in volume in a particular fishery sector. Also, previous interviews (2004) would suggest that the volume of welding work was sensitive to marine fuel prices, as one interviewee noted that as fuel prices increased, the number of boats seeking welding services decreased in association with a decrease in disposable income (that is, vessel owners had a greater tendency to defer maintenance or perform do-it-yourself work). As fuel prices have recently escalated again, this may also be a factor in the overall vitality of this sector.

Marine Electronics

Support services for marine electronics on Kodiak are provided mainly by Radar Alaska, the only local shop that specializes in selling and servicing marine electronic equipment. Radar provides equipment for boats such as VHF radios, satellite phones, radars, orator boxes (for clarifying sound and blocking background noise), and the electronics for net systems. Radar management estimates that about 90 percent of its business comes from commercial fishing vessels with the remaining 10 percent deriving from sport charter vessels, which represents a shift more toward sport vessels in recent years. In terms of an annual cycle, the pattern reported in 2008 was consistent with the one reported in 2004: the shop has marked busy periods in January during the 2 weeks before the multiple season openings, for March through June when work on smaller boats increases, and December when Radar technicians make repairs and work on boats that are inactive until the seasons begin again in January. Like a number of other Kodiak support businesses, Radar's levels, particularly as measured by employment, decreased dramatically between the mid-1990s and the mid-2000s. In 1995, Radar employed seven technicians, while as of 2004 there was only one technician employed in Kodiak. In 2008, additional technician capacity included an individual who was splitting time worked between sales (two-thirds time) and technical work (one-third time). Overall, in the mid-1990s Radar had a total of 13 employees in Kodiak, whereas in 2004 there were 3 employees on-site. At present (2008), Radar has three full-time employees and one-part time employee, the latter being a high school student who works after-school hours.

In general, the overall decline in activity and employment seen since the mid-1990s has been attributed in part to changing fisheries economics (driven in part by changes in regulations, fewer people fishing, greater efficiencies, and an increase in competition from farmed fish), but also in large part to changes in electronics technology. These latter changes include improvements in the longevity of the equipment, and the fact that the cost of electronic gear has declined to the point where replacement, rather than repair, has in many cases become more economically viable than repairing existing equipment. There has also reportedly been increased competition from catalog and internet sales. The dip in overall sales began around 1997, when computers, which used to be an anomaly on vessels, became increasingly inexpensive, common, and user friendly/plug-and-play capable. On the other hand, one fishing regulatory shift that changed the business was the move to halibut IFQs, which, according to Radar's staff, leveled out the peaks prior to each season. There is now less of a rush, and more time to set up communication systems on the boats, resulting in increased safety because the removal of derby fishing eliminates pressure to go out in times when the communications system on the boat is not working properly. On the other hand, Radar is experiencing reduced sales because consumers have more time to shop around to get the best price, which might include ordering online and having a product shipped, a luxury pre-IFQ scenarios did not always provide for, given the previous urgency of repairs and service needs.

There is some differentiation in the fleet from an electronics perspective, as groundfish trawlers tend to have more electronics on their boats compared to salmon fishermen. Radar Alaska management reported that it used to do work for the processors on side-band communication gear, but in recent years they have switched to satellite phones, which do not require the same degree of technical expertise for installation and maintenance. Additionally, plants do continue to buy equipment on behalf of the boats via purchase orders, with the boats settling with the processors at a later time. These types of sales are estimated to comprise about 10 to 15 percent of total sales. Another market for communications gear comprises set-net site owners who are

also required to have a radio. Overall, approximately two-thirds of Radar's business is sales, with the remaining one-third composed of technical service and repair.

Marine Mechanical

Mechanical services represent yet another fishery support service sector on Kodiak. There are a few independent mechanics in Kodiak that focus on marine work, with E. Norton Inc., being one of the better known shops. In operation since 1988, with substantial investment in the enterprise in 1989 during the *Exxon Valdez* oil spill event, it specializes in propulsion, design, and engineering of exhaust components and systems, repair of auto-baiter equipment, and repowering of jig and pot cod boats, although some business derives from the USCG as well as aircraft-related work. According to information from an interview with the shop's founder in 2004, 90 percent of the company's work was attributable to the fishing industry and, of that figure, approximately 15 percent came from charter boats; 20 percent from commercial trawlers; 10 percent from commercial longline vessels; and the remaining proportion from a combination of salmon, halibut, and miscellaneous small vessels. At present (2008), approximately 60 percent of business revenues derive from sales (and sales with services) and approximately 40 percent from straight service. The business is unique in Kodiak due to its focus on exhaust systems and cooling issues for jet units. The busy season runs from November through May, particularly during breaks between fishing seasons during these months. Earlier interviews (2004) noted that there tended to be a surge of business at year's end driven in part by tax incentives, and while this is apparently less of a specific consideration for customers at present (2008) than in the past, the 6 weeks or so between the end of IFQ halibut fishing in November and the start of cod and Tanner seasons in January is still a particularly busy window. Recent changes in business demand have included an increase in vessels repowering to improve fuel efficiency in response to rise in fuel prices.

Marine Fuel Sales

Marine fuel sales are also an important support business in Kodiak. There are two primary marine fueling facilities in the community, North Pacific Fuel and Petro Marine Services. Due to increased security measures following the September 11, 2001, terrorist attacks, it is no longer possible to obtain detailed information on fueling facilities, though some general information is available. Petro Marine uses a city dock to unload the fuel, which is moved by barge to the marine facility. North Pacific Fuel utilizes a terminal that reportedly began operations under Union Oil of California ownership approximately 60 years ago. Both companies deliver refined diesel products for commercial fishing-related services. In previous interviews (2004), North Pacific Fuel management estimated that about 65 percent of their annual business derives from servicing fishing vessels (with less than 5 percent linked with catcher processor vessels), while the remaining 35 percent of their sales associated with the residential market and processing plants. At present (2008), however, local management reports that it is not possible to characterize such a marine/land split with readily available data. Further, as there is not a fixed land business base, due to contracts varying annually, each year is different. In general, however, the amount of business associated with vessels has reportedly decreased as part of a long-term trend, but the reasons behind the trend are not clear. Specifically, according to local management, it is likely that there may have been some impacts related to BSAI crab rationalization and fleet consolidation, but these, if any, have not been quantified, nor is it apparent whether crab rationalization has played a part in the longer-term trend of declining

fishing fleet sales. In terms of local employment, there are 15 people employed at the local terminal and another 2 at the local gas station, with this level of employment remaining steady for the past several years. In previous interviews (2004), then-recent increases in fuel prices were reported to have affected the level of participation among local fleets. An example of this was given of one year when there was leftover pollock quota, where the price of pollock, compared to the rising cost of fuel, confined fishermen to half the catch as approximately 40 percent of the gross income was paid for fuel costs (based upon a maximum load). Similarly, according to interviews in past years, a large part of the North Pacific Fuels local marine business derived from the trawl fleet, as trawlers tend to burn more fuel than other vessels. Summer was characterized as the busiest season for vessel fuel sales, due to the salmon and pollock season activities, although there has been a substantial decline in the number of local salmon vessels fishing in the 2000s compared to the number of vessels fishing locally in the late 1990s.

General Stores

Some Kodiak businesses also support the commercial fishing sector through sales of groceries and general store supplies to the fleet. Larger grocery outlets in Kodiak include Safeway, Food-For-Less, and Wal-Mart.

The Kodiak Safeway store was specifically designed handle the logistics of being a service hub to other Kodiak region communities and as such is equally capable of handling large fleet-related orders. The store has a large storage capacity (20,000 square feet out of a total store area of 70,000 square feet), enabling the store to hold large orders of food destined for communities such as Akhiok, Old Harbor, and Ouzinkie, plus vessels and remote set-net operations. According to store management, “if vessels are homeported here, they shop here” and a number of out-of-town vessels will also shop at the store. For vessel orders, typically crew will come into the store, although sometimes a crew member will call ahead with an order (or a processing plant will send a purchase order on behalf of a vessel). For call-in orders, the store prepares and boxes grocery supplies (via an investment in cardboard boxes) and delivers the boxes to the docks at no additional cost to the customer. They can also store and refrigerate the groceries until pick-up or delivery. This flexibility and efficiency reduces downtime in between fishing trips, generating customer loyalty, but oftentimes crew prefer to come in to the store due to the ability to take the groceries with them at the time rather than waiting on a delivery schedule that may be variable if time in port is short. According to store management, grocery purchases can easily range from \$200 to \$8,000 per trip, per vessel.

Safeway management reports that the core of its business is the community of Kodiak, but a significant amount of the business is related to commercial fishing in some manner, and some management effort is necessary to ensure efficiency for both fishing-related and typical residential customers. For example, in-store commercial grocery purchases are conducted using a special checkout station, designed to accommodate large box orders, thereby mitigating the impact large orders could otherwise have on everyday costumers. With regard to seasonal fluctuations, Safeway management reported that January and the May through September season are the busiest periods of the year for fisheries-related business. In general, from May through September “the whole island bubbles up” with increased business generated from tourism, lodging, and logging increases, not just fishing increases. The Tanner crab opening in January would typically generate a high level of activity, but in recent years this has not been as

substantial as in previous times. Safeway management reports that the local store employs 140+ persons at present (2008), up from the 110 to 135 persons indicated in earlier (2004) interviews. Earlier (2004) interviews also indicated that the transition of halibut to an IFQ system affected the store's ability to track and predict an ebb and flow to the direct fisheries-related component of their business. Overall, as of 2004, there are noticeably fewer spikes occurring before and during the various fishery openings, with the exception of the Tanner crab season, which continued to be significant. As of 2008, Safeway management reported that while they do not have fishing-specific data, "virtually every fishery is not what it used to be" in terms of direct store sales.

In the mid-1990s, according to local management, the Kodiak store was 1 of the top 10 Safeway stores in the United States in terms of sales volume. Since that time, fishery-related demands have decreased, the residential population has remained relatively flat, and more competition has come into the market. Despite these challenges, however, local Safeway management reports that for at least the last 11 years (the tenure of the current management) sales have been up year over year on an annualized basis each year, with the exception of the year that Wal-Mart opened nearby (with sales being virtually flat that year compared to the previous year). While no longer in the U.S. top 10 for Safeway stores, local management reports that has as much to do with unrelated dynamics of change (e.g., Safeway obtaining a number of larger stores through acquisitions and increased fuel sales at other stores [the Kodiak Safeway does not sell fuel]) as anything else.

Food-For-Less, an Alaska Commercial Company-owned store, is a general store located near the harbor, but according to its manager it currently (2008), unlike Safeway, does not provide a substantial amount of groceries to vessels. The store does provide duty free tobacco sales to vessels, but apparently this has been little changed. Rather, whatever impacts of BSAI crab rationalization may have been felt by Food-For-Less were more in the form of loss of income to crab crew members and their families, and the associated subsequent local household spending, rather than vessel sales *per se*. According to local management, however, any impacts to Food-For-Less have been "miniscule" relative to the overall bottom line of the store, especially as people displaced from the crab fishery were largely able to find alternative employment or sources of income such that changes in spending at the store were not apparent.

Boatyard Services

Kodiak also has a boatyard for vessel support. Fuller Boatyard is a privately owned incorporated business, which has been in operation since 1964. In 1987, the current owners purchased the business from Ted and Fern Fuller, the original owners. Currently (2008), Fuller's has one employee in addition to its owner (who fishes salmon in addition to owning the yard). Fuller's operates primarily as an open air repair facility on 4.4 acres of tidelands on the Near Island channel⁷ with an inside, heated net loft on-site along with some additional warehouse space.

Fuller's services 18-foot to 96-foot-long vessels under 150 tons. They lift, launch, and store commercial fishing vessels, as well as some recreational power and sail boats. The boatyard

⁷ The City of Kodiak, in the 1970s, sold its tidelands along the urban waterfront to private enterprise. All tidelands along the urban waterfront, with the exception of the harbor, are now privately owned, including the parcels where the seafood processors are located.

operates three lifts and a hoist (one 25-ton Marine Travelift, one 100-ton Travelift, one 150-ton Travelift, and a 50-ton Acme Hoist) and also provides blocking. Fuller's also rents out pressure washers and welding equipment and provides 110-volt electricity for the tradesmen and vessels. Fuller's is reportedly the only boatyard in Alaska that is an "open yard" that allows vessel owners to bring in their own tradesmen to do fabrication and repairs. This yard thus serves as a facility to outside tradesmen, some of whom rent approximately half of the warehouse space in the yard, to provide welding, fiberglass work, boat repair, woodwork, interior finish work, electrical services, and other services on-site.

The capacity of the largest lift at Fuller Boatyard is well below the size of the larger vessels in the resident commercial fishing fleet, so these vessels at present must seek dry dock facilities outside the community. As discussed in a later section, the City of Kodiak is in the process of obtaining a larger lift that, according to plan, would be operated by a private entity to be determined.⁸ At present (2008), Fuller's primarily services the salmon seine fleet, crab vessels, tenders, and some pot cod boats, consistent with what was reported in 2004, but overall fleet numbers are down. According to the long-time employee of the yard, there are now roughly 100 seiners working the local area that form the potential business base for that fleet, down from roughly 300 at its peak, reportedly due to attrition of smaller vessels, which in turn is attributable to changes in refrigerated seawater requirements and the practical advantages of having larger holds, combined with increased operating costs, including elevated fuel costs. The owners estimate that 99 percent of the boatyard business is associated with the commercial fishing fleet. Despite a limited lift capacity, quite a few of the boats serviced at the yard are from Washington, Oregon, or California, although this segment of the business has reportedly declined in recent years relative to local fleet business. The boat yard storage volume has been relatively stable for the past few years, after seeing declines of 50 percent or so of demand related to the noted changes in the salmon fishery as well as the consolidation of the halibut fleet under IFQ conditions. For the last several years, including the years immediately preceding BSAI crab rationalization, business has been fairly steady with about 40 vessels are stored over the winter at the yard.

Shipping

There are several cargo carriers with a long-term local presence that are used to ship seafood products off Kodiak Island. Two are marine shipping carriers, and two are air cargo carriers. They include Horizon Lines, Samson Tug and Barge, Alaska Airlines/ERA, and Northern Air Cargo.

Horizon Lines is a domestic carrier that has gone through a number of ownership changes in recent years. Known as Sea-Land before becoming CSX Lines, in 2002 CSX Lines was sold to the Carlyle Group, which changed the name of its domestic shipping service to Horizon Lines. In the spring of 2004, the Carlyle Group sold Horizon Lines to Castle Harlan, but the Horizon name was retained. According to Horizon management in Kodiak, the vast majority of the containers they ship from Kodiak are seafood products, but the weight of full seafood containers is significantly more than the weight of other household goods, dunnage, and autos, such that approximately 90 percent of the wharfage collected by the City of Kodiak from Horizon Lines is seafood related. While Horizon does business with all the processing plants in Kodiak, it does not service catcher-processors. Horizon operates two routes that include Kodiak. Both start in

⁸ As of the time of fieldwork (June 2008) a contractor other than Fuller's had been selected to run the new lift, but a formal agreement between the City and the prospective operator had not yet been executed.

Tacoma, stop in Anchorage, and continue on to Kodiak. One route returns to Tacoma and the second travels to Dutch Harbor, where it connects with international carriers, then turns around and travels south to Tacoma. Of its seafood-related business, approximately 60 percent of all products shipped by Horizon were destined for domestic markets. Some fluctuations in shipping mode for commercial fisheries related cargo do occur during different seasons, even within individual fisheries based on market demands for different product forms, including fresh forms.

Horizon is an agent for MAERSK shipping, which provides export shipping from Dutch Harbor. Horizon also moves cargo destined for overseas shipment on American President Lines (APL) vessels.

Samson Tug and Barge operates a container hauling and break-bulk service in Kodiak. Because ships with deeper hulls cannot get into the outlying communities in the Kodiak Archipelago, Samson brings salmon and other products from remote canneries to a central location in the greater Kodiak area, and transfers the containers to larger vessels. Samson also hauls containers destined for shipment on APL out of Dutch Harbor. According to earlier (2004) interviews, Horizon contracts with Samson to haul empty containers to King Cove and Sand Point, as well as to bring cargo into and out of the small communities in the region. Processors typically use Horizon or Northern Air Cargo when shipping frozen or fresh products, while Samson is used to move cargo that does not require a 3-day turnaround. Samson does have refrigeration capacity to ship frozen products as well as dry cargo such as canned salmon. Kodiak was also served by Western Pioneer in the past, but more recently this firm sold its vessels and no longer operates a freight division.

The Port and Harbor Department of the City of Kodiak itself also acts as a support service provider for commercial fishing related activities. The department, which manages the port and its two harbors, is operated via an enterprise fund. Its purpose is to serve the commercial and recreational boat fleet by providing marine infrastructure and services. It provides customer service and billing for port and cargo operations; it coordinates scheduling and use of facilities; provides limited search and rescue within city limits; and in conjunction with other city departments provides emergency response for fire, crime, and accidents. Details of this department and the revenues port and harbor activities generate are provided in the local governance and revenues section, below.

In addition to the Port of Kodiak facilities, there is a privately operated terminal in the greater Kodiak area. Seaport Terminal Services Inc., a subsidiary of LASH⁹ Corporation, operates the terminal and provides associated support services. According to 2004 interview information, the terminal presently has over 1,200 feet of dock space available. The terminal also has warehousing, yard storage, crane services with 40-ton to 150-ton cranes, 4-ton to 40-ton forklifts, trucking, waste disposal, and water. Fuel is also available through delivery from Kodiak's local distributors. Seaport maintains three mooring buoys within the "designated anchorage" in Womens Bay to provide moorage capabilities for large vessels and barges. Vessel haul-out and storage are available for most vessels up to 50 feet in length. LASH Corporation is presently developing an industrial park next to the terminal with property for sale or long-term lease.

⁹ In most shipping contexts, LASH is an acronym for Lighter Aboard Ship vessels that carry multiple (approximately 90) standard size LASH barges that can be independently loaded/off-loaded and towed to and from the oceangoing ship to smaller ocean or inland waterways ports. In this case, LASH is simply an acronym for the founders of the company.

Kodiak State Airport is located about 4 miles southwest of downtown Kodiak. The airport is owned by the USCG, is leased to the State of Alaska, and operated by the Alaska Department of Transportation and Public Facilities. In addition to linking Kodiak to Anchorage and other mainland destinations, the airport also serves as a regional hub for smaller outlying communities. With one of its runways being in excess of 7,500 feet, an instrument landing system/distance measuring equipment (ILS/DME) approach capability, and a control tower manned for 16 hours per day, Kodiak State Airport has functional passenger transportation and cargo shipping capacity far in excess of other fishing communities in the southwestern part of the state (including the other fishing communities profiled in this document [Unalaska/Dutch Harbor, Akutan, and King Cove]). While volume of product moving by air is small in proportion to the volume of product that moves by surface transport, air shipping of seafood is nonetheless an important part of the local transportation economy. For example, with the start of halibut season in 2005, one of the carriers was anticipating shipping 100,000 pounds of halibut in the first week alone. With relatively quick and reliable connections to the global air shipping capabilities found at Ted Stevens Anchorage International Airport, air shipment of fresh product from Kodiak is more economically feasible than is the case from many other rural Alaska seaports, but price/cost competition with fresh product landed at road system communities such as Homer (that can then be trucked to Anchorage and beyond) remains challenging.

4 Local Governance and Revenues

As described above, Kodiak is home to a wide range of governmental institutions. Fishing-related revenues are an important component of overall revenues for both the city of Kodiak and the KIB. Municipal revenue information for the period 1999 through 2007 parallel to that presented for the other Alaska communities profiled is presented in Table 23. As shown, local operating revenues generated by taxes have increased each year in recent years. Shared fish taxes, a part of outside operating revenues, show a more complex pattern. Although all subsequent years are higher than the figure for 2003, the shared fish tax revenues for 2004 were higher than those for 2005 and 2006, but lower than those for 2007.

Beyond the revenue sources that accrue to the municipality directly, residents of Kodiak (like the residents of other communities on the island) derive benefits from services provided by the borough, which also funds its services in part through fishery derived revenues. The borough has a resource-based severance tax that applies to extraction of natural resources including rock, sand, and gravel as well as timber and fish. While in past years timber used to make up the majority of this revenue, borough management estimates that more recently severance tax is typically over 90 percent attributable to fish. In FY 2007, the severance tax total was \$1.3 million (of which approximately 98 percent came from fish), up from \$1.2 million the year before. This borough tax is designed to mirror that state raw fish tax with the taxes being applied to the transactional value at the point of extraction, based on the value paid to commercial fishermen (as part of the transaction with the processors upon landing).

In addition to the severance tax, commercial fishing related activity contributes to borough revenues in a variety of ways. For example, the borough levies both real and personal property taxes on processing plants both within and outside of incorporated municipalities. (Borough real property taxes are paid on lands and buildings, borough personal property taxes are paid on equipment within the plants, and both are assessed at 10.5 mills; the City of Kodiak does not

levy personal property taxes, but levies real property taxes at a rate of 2 mills, so seafood processing plants within the city boundaries pay a combined total of 12.5 mills in real property taxes.) The borough also levies a flat tax on vessels over 5 tons, which is equivalent to a personal property tax. This tax was set at \$15 per vessel per year until FY 2006 (when it generated \$7,547). In 2007, the tax changed to \$1 per foot on vessels over 5 tons, with a minimum tax of \$30 per vessel, which generated \$26,217 in revenue that year. (The intent of not taxing vessels more aggressively is to support the commercial fishing industry; the recent tax increase was intended to at least cover the cost of collections.) These fishery-related tax revenues, in turn, provide a range of benefits to Kodiak and the borough as a whole. The borough also exempts any and all commercial fishing gear (exclusive of vessels) from personal property tax.

The state fisheries business tax benefits both the borough and the city directly through revenue sharing, with this revenue being shared evenly between the borough and the state where the activity takes place within the borough but outside of an incorporated municipality, and split 50 percent to the state, 25 percent to the borough, and 25 percent to the city where the activity takes place within an incorporated municipality. The borough also derives revenue from the state fishery resource landing tax, which is levied on processed fishery resources first landed in Alaska, based on the unprocessed value of the resource. (This tax is primarily collected from at-sea and floating processors that process resources outside of the 3-mile limit but bring their products to Alaska for transshipment.) In the case of Kodiak, the revenues generated by this tax are modest compared to those generated by the fisheries business tax. (For example, between 1999 and 2003, the resource landing tax ranged between less than one-half of one percent to a little less than five percent of the annual fisheries business tax.)

Table 24 provides information on state fish tax revenue sharing over the FY 1976 through FY 2007 period. As shown, there were several peaks and valleys over this span of years. After a sharp decline from 2002 to 2003 and another decline from 2003 to 2004, this revenue source has seen annual increases from 2005 through 2007.

Table 23. Kodiak Municipal Revenues 1999–2007

Revenue Source	1999	2000	2001	2002	2003	2004	2005	2006	2007
Local Operating Revenue									
Taxes	\$7,377,771	\$7,998,729	\$7,736,345	\$7,740,939	\$7,879,249	\$8,056,275	\$8,551,379	\$8,929,890	\$9,223,190
License/Permits	\$65,969	\$44,028	\$39,355	\$44,628	\$38,063	\$54,758	\$58,319	\$43,064	\$51,535
Service Charges	\$2,522,717	\$1,400,947	\$1,275,700	\$1,427,824	\$2,050,628	\$1,431,142	\$1,648,405	\$1,392,238	\$1,472,985
Enterprise	\$5,559,886	\$6,315,214	\$7,005,648	\$6,808,064	\$5,972,076	\$6,644,239	\$7,079,057	\$7,821,403	\$8,952,296
Other Local Revenue	\$1,941,751	\$2,105,864	\$1,509,686	\$1,115,994	\$742,066	\$241,751	\$568,236	\$823,852	\$1,214,681
<i>Total Local Operating Revenues</i>	\$17,508,094	\$17,864,782	\$17,566,734	\$17,137,449	\$16,682,082	\$16,428,165	\$17,905,396	\$19,010,447	\$20,914,687
Outside Operating Revenues									
Federal Operating	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
State Revenue Sharing	\$118,049	\$82,265	\$73,635	\$68,511	\$63,501	\$0	\$0	\$0	\$0
State Municipal Assistance	\$332,799	\$222,926	\$199,391	\$211,503	\$203,517	\$0	\$0	\$0	\$0
State Fish Tax Sharing	\$615,603	\$618,504	\$667,927	\$889,316	\$627,719	\$825,995	\$643,560	\$712,424	\$828,773
Other State Revenue	\$105,844	\$92,950	\$100,141	\$82,655	\$51,667	\$218,497	\$80,972	\$361,453	\$571,393
Other Intergovernmental	\$0	\$0	\$20,000	\$0	\$3,650	\$0	\$0	\$0	\$0
State/Federal Education Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>Total Outside Revenues</i>	\$1,172,295	\$1,016,645	\$1,061,094	\$1,251,985	\$950,054	\$1,044,492	\$724,532	\$1,073,877	\$1,400,166
Total Operating Revenues	\$18,680,389	\$18,881,427	\$18,627,828	\$18,389,434	\$17,632,136	\$17,472,657	\$18,629,928	\$20,084,324	\$22,314,853
Operating Revenue per Capita	\$2,710	\$2,762	\$2,941	\$2,810	\$2,873	\$2,818	\$3,060	\$3,382	\$3,922
State/Federal Capital Project Revenues	\$7,500	\$491,851	\$26,683	\$175,821	\$1,310,547	\$628,403	\$1,091,153	\$1,175,962	\$496,946
Total All Revenues	\$18,687,889	\$19,373,278	\$18,654,511	\$18,565,255	\$18,942,683	\$18,101,060	\$19,721,081	\$21,260,286	\$22,811,799
Total All Revenues (2006 Constant Dollars)	\$22,613,916	\$22,680,911	\$21,247,172	\$20,804,644	\$20,754,592	\$19,318,019	\$20,357,245	\$21,260,286	\$22,184,557

Source: Personal comment, DCED, spreadsheets provided July 2008.

Port and Harbor Department

The Port of Kodiak has more than 650 boat slips and 3 commercial piers that can handle vessels up to 850 feet long. In addition to the freight carriers already mentioned, it also supports several freight forwarders and consolidators. The three piers include the general use/ferry pier, the city dock, and the cargo terminal pier that together support the ferries, facilities for D7 class container ships, cruise ships, commercial fishing vessel loading and off-loading, and other cargo vessels. The city operates two marinas. Saint Paul Harbor, located downtown, has 250 slips for vessels up of 24 to 60 feet in length. Saint Herman Harbor, in Dog Bay on Near Island, has 325 slips for vessels 17 feet to 150 feet in length. Overall, Kodiak has the largest mooring capacity for large fishing vessels of any port in Alaska, with over 80 slips for vessels 90 feet to 150 feet in length. Both harbors are full most of the time, with 95 percent of the occupancy coming from commercial fishing vessels, with some commercial vessels originating from Washington and Oregon. Vessels with exclusive slips pay an annual fee for moorage; all other vessels pay a daily rate. The department provides security and services 24 hours a day, 7 days a week, with 13 staff members including 8 full-time patrol officers.

The City of Kodiak is planning to upgrade their vessel support facilities in the form of a travel lift to be located on city lands adjacent to St. Herman Harbor. The city obtained a grant from the federal Economic Development Administration for this project, which is being developed with public funds rather than as a private enterprise due to the city owning the tidelands upon which it will be located (necessitating a public partnership in any event) and the capital-intensive nature of the project. The city is planning to partner with a private entity that would operate the lift and, as of June 2008, had selected an operator but had not yet formalized an agreement with that entity. At present, larger Kodiak vessels must travel outside of the community (typically to Seattle) for dry dock repairs. The only local lift, at the privately owned and operated Fuller Boatyard, has a 150-ton capacity, while the new lift would have a 600-ton/38-foot-beam capacity, meaning it could service the largest of the locally owned vessels. Having a local facility would save each vessel fuel and incidental costs (such as crew expenses) involved in taking their vessels to Seward (220 miles away) or Seattle (1,000 miles away). This would save tens of thousands of dollars in round-trip fuel costs alone associated with hauling out in Seattle, and it would keep vessel service dollars circulating in the community.

With fleet consolidation that has accompanied fishery rationalization (most recently with BSAI crab rationalization) there is concern that support service demand in Kodiak will decline. It is hoped that the planned travel lift would attract business from larger Bering Sea crab boats, whether home ported in Kodiak or not, expanding the city's fishing-related economic base. Successful implementation of this project would, it is hoped, generate additional business opportunities for other Kodiak marine support service providers, such as welding, hydraulics, mechanical, and electronics service entities. According to city officials, travel lift fees would be structured in such a way as to discourage smaller vessels that now use Fuller Boatyard from using the new lift (to avoid

direct competition), while at the same time offering services to larger vessels in a manner that allows a competitive advantage relative to costs for similar services in Seward. One approach the city is taking to encourage additional support service growth is planning the facility as an “open yard,” allowing vessel owners to bring in mechanics and tradesmen of their choice. Further, although there is no private sector commercial activity on Near Island at present, the city is also anticipating selling or leasing land for support service business development near the planned travel lift boatyard site.

Table 24. Kodiak Island Borough Fish Tax Revenue Sharing, 1976–2007

Fiscal Year	Raw Fish Tax
1976	\$54,039
1977	\$66,709
1978	\$79,834
1979	\$251,716
1980	\$182,348
1981	\$452,802
1982	\$428,924
1983	\$828,783
1984	\$884,740
1985	\$709,477
1986	\$651,383
1987	\$647,057
1988	\$871,703
1989	\$875,085
1990	\$2,044,881
1991	\$1,082,779
1992	\$1,295,921
1993	\$1,005,664
1994	\$1,244,127
1995	\$997,032
1996	\$1,077,121
1997	\$1,349,834
1998	\$994,768
1999	\$918,010
2000	\$833,980
2001	\$1,006,947
2002	\$1,364,248
2003	\$840,768
2004	\$649,928
2005	\$773,290
2006	\$802,313
2007	\$958,965

Source: Kodiak Island Borough spreadsheet.

Senior harbor staff did note that approximately five vessels from Kodiak were part of the crab vessel buy-back that occurred prior to rationalization and, with the consolidation that occurred post-implementation of BSAI crab rationalization, there are a number of other vessels still in the harbor that are no longer active or as active in fishing as they were prior to rationalization. While vessels in the latter category may still generate moorage fees for the harbor, they are not generating the local fuel, grocery, supply, and maintenance sales that they did when they were active in the BSAI crab fisheries. Unrelated to BSAI crab rationalization, but occurring at the same time, there have been significant impacts to the Kodiak fleet as a result of escalating fuel prices. According to the harbormaster, there are boats now seeking moorage in Kodiak that were not doing so previously due to the desire to cut unnecessary running costs. Table 25 displays Kodiak harbor revenues for 2004–2007. As shown, moorage fees have increased every year during this period as have total harbor operating revenues.

Table 25. City of Kodiak Boat Harbor Enterprise Fund Revenues, 2004–2007

Operating Revenues	2004	2005	2006	2007
Moorage	\$752,550	\$1,040,705	\$1,183,387	\$1,366,121
Pier and dock fees	\$122,223	\$145,923	\$161,147	\$205,299
Administrative fees to other funds	\$70,000	\$70,000	\$70,000	\$70,000
Other fees and charges	\$149,585	\$155,934	\$173,896	\$213,162
Rentals	\$13,882	\$14,021	\$14,161	\$14,302
Penalties and interest	\$6,168	\$10,798	\$14,349	\$10,971
Other	\$0	\$27,748	\$0	\$15,013
Total operating revenues	\$1,114,408	\$1,465,129	\$1,616,940	\$1,894,868

Source: City of Kodiak Comprehensive Annual Financial Report 2007.