

North Pacific Fishery Management Council

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Dear Reader,

In June 2009, the Council adopted a suite of elements and options for developing a new Central Gulf of Alaska rockfish program to replace the existing pilot program, which is set to expire after the 2011 fishing season. Since June, staff has been preparing a preliminary EA/RIR/IRFA for the proposed development of the new rockfish program. Given the uncertainty of Council authority for some alternatives and the pending opinion of NOAA GC concerning that authority, staff has focused its efforts on portions of the analysis less likely to be affected by that opinion. These include the development of alternatives from the elements and options to frame the EA/RIR/IRFA analysis and preparation of background sections of the analysis. The document includes a detailed description of the alternatives, a detailed description of the existing conditions in the rockfish fishery during two periods: the period leading up to the rockfish pilot program and the period since implementation of the rockfish pilot program. Also included in the document are preliminary drafts of the EA and the IRFA.

In addition to the information included in this mailing, staff is preparing a separate paper with information on few specific decision points that the Council could consider at this meeting. That paper will be included in briefing books for the October meeting. The paper will include descriptions of the proposed allocations to harvesting sectors and their members, as well as the proposed allocations shore based processors. The paper will also include analysis of proposed allocations to participants in the pilot program trawl entry level fishery (including shore based processors that participated in that fishery), proposed shortraker and rougheye rockfish allocations, and the rollover of unused halibut PSC from the rockfish fishery cooperatives to other Gulf trawl fisheries.

Sincerely,



Chris Oliver
Executive Director

Preliminary 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

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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 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).

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:

¹ 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 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.

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.

Five 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 divide harvest share allocations of target rockfish and secondary species between historic catcher vessel participants and historic processing participants. These allocations would be subdivided based on historic participation within the sector. The third alternative is the existing pilot program structure. Under this alternative, the catcher vessel sector would receive allocations of target rockfish and secondary species and halibut PSC. Annual allocations of these species would be made to cooperatives, based on the harvest histories of their members. Each eligible catcher vessel license holder would be eligible to join a single cooperative associated with the eligible processor to which it delivered the most of target rockfish during the processor qualifying years. Eligible catcher vessels that choose not to join a cooperative would be permitted to fish in a limited access fishery. The fourth alternative parallels the current catcher vessel program by establishing a system of cooperatives that harvesters must join to access exclusive harvest privileges. Under this alternative, a harvester at the outset would be eligible to join a cooperative in association with the processor to which it delivered the most pounds during a specified historic time period. A harvester who elects not to join its designated cooperative may move to another cooperative (and processor association) by making a one time (temporary or permanent) forfeiture of a portion of its harvest allocation. The final alternative is identical to the previous alternative except that each time a harvester chooses to move to another cooperative (and processor association), it would temporarily forfeit a portion of its allocation.

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 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. All deliveries from the entry level fisheries must be made to processors that are not eligible for the primary 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. 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 only fishery

Under this alternative, only fixed gear sector would receive an entry level allocation of the primary rockfish species.² 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

² 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.

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. Entry level fixed gear sector would be exempt from VMS requirements.

Catcher processor sector alternatives

Catcher processor alternative 2 - Catcher processor cooperative only (the pilot program structure)

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 used for each species by each 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.

Halibut mortality would also be allocated to the sector under the program based on halibut mortality during the qualifying period. 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).

To participate in the fisheries, an eligible license holder must be a member of a cooperative. 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 member 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.

No persons would be permitted to hold or use in excess of 20 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.³ 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.

Included as 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 this same catcher processor fleet is already limited by sideboards from Amendment 80.

³ 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).⁴ 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 this same 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.

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.

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

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. Eligible catcher processors wishing to fish in the limited access fishery would need to apply for that fishery in a timely manner. The allocation 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.

⁴ 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.

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. 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.

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 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 rougheye 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. 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. 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 other unqualified LLP licenses that participated in the pilot program entry level fishery. To qualify 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. 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. An option could be selected to make allocations of target rockfish, secondary species, and halibut PSC to eligible entry level processors. These allocations would 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.⁵ 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 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.

⁵ 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.

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 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.

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).⁶

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.

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.

Program review and cost recovery would be 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.

⁶ 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.

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.

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, 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.⁷ 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.

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

⁷ It is unclear whether this provision can be effectively implemented, as tracking of individual share usage in a cooperative management program may be infeasible. It is possible that a variant of this provision could be developed that would prevent processors using these allocations to expand harvest sector activity in a manner that does not impose an unreasonable administrative burden.

Catcher vessel alternative 4 - Harvester limited access or cooperative with fixed processor associations (existing pilot program structure)

This alternative is the existing pilot program structure, under which allocations to participants in the catcher vessel sector would be made only to catcher vessel license holders. Each license holder would then be able to access those allocations only by joining a cooperative in association with the eligible processor to which it delivered the most pounds of target rockfish during a specified period. Processor eligibility is based on meeting a processing threshold from the fisheries in a specific time period.⁸

If an LLP license has no deliveries to a qualified processor, the harvester may join a cooperative associated with any processor in the community to which it delivered the most pounds of the primary rockfish species during the qualifying years. If a processing facility has closed down and another facility has acquired that processing history through purchase, the history can be aggregated with the purchasing facility for purposes of determining processor associations, provided that the purchasing facility is in the same community.

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 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.

A single cooperative may form in association with each eligible processor. To form, a cooperative would be required to have membership of the holders of in excess of 75 percent of the harvest history eligible for the cooperative. A license holder may participate in the fisheries by either joining the single cooperative for the license is eligible or fish in a limited access fishery. Eligible license holders that do not file a cooperative agreement or register for the limited access fishery in a timely manner will not be permitted to participate in the fisheries. Cooperatives would be permitted to engage in the transfer of annual allocations, subject to the consent of the associated processor. The terms of the cooperative/processor association are not specified, but would be subject to negotiation and agreement by each processor and its associated cooperative. Processor associations would be plant based, and are transferable only within a community. All other cooperative provisions under this alternative are the same as in the previous alternative.

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

Catcher vessel alternative 5 - Severable harvester/processor association – one time forfeiture

This alternative parallels the current catcher vessel program by establishing a system of cooperatives that harvesters must join to access exclusive harvest privileges and participate in the fishery. At the outset, a harvester is eligible to join a cooperative in association with the processor to which it delivered the most pounds during a specified time period. If a harvester elects not to join that cooperative, it may move to another cooperative (and processor association) by forfeiting a portion of its harvest allocation. Depending on the option selected, the forfeiture would be made to either directly to the processor losing the harvester association or to the cooperative associated with that processor. The forfeiture would be either a permanent transfer of a portion of the harvester's long term privilege or a temporary transfer (i.e.,

⁸ Note that no options are included in this alternative in its current form. This allows more direct contrast between other proposed alternatives and this alternative, which represents the existing pilot program management.

1 or 2 years) of a portion of the harvester's annual harvest share privilege. The portion of the harvest share allocation forfeited would be between 10 percent and 30 percent. After severing the initial processor association and paying any required forfeiture a harvester would be permitted to join a cooperative in association with any processor in the community to which it delivered the most pounds of target rockfish in the processor qualifying years. As with the preceding alternative, no explicit processor delivery requirement would be established by the program, but delivery requirements could be included in the negotiated associations; a Port of Kodiak delivery requirement is being considered; and no limit on processor entry would be included in the program.

If an LLP holder has no deliveries to a qualified processor, the harvester may join a cooperative associated with any processor in the community to which it delivered the most pounds of the primary rockfish species during the qualifying years. After the first year, such a harvester will make a forfeiture of qualified catch history on changing processor associations, as if the processor were identified by the harvester's landing history. If a processing facility has closed down and another facility has acquired that processing history through purchase, the history belongs to the facility that purchased that history. That history must remain in the community that it was generated in.

Only a single cooperative may form in association with each eligible processor. 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. In all other respects, allocations to cooperatives and all other cooperative provisions would be the same as described in the preceding alternative. An option requiring that all deliveries be made in the Port of Kodiak is being considered. No limit on processor entry would be included in this alternative.

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

Catcher vessel alternative 6 - Severable harvester/processor association – ongoing forfeitures

This alternative is identical to the previous alternative except with respect to the forfeiture of shares by a harvester when severing a processor association. The alternative would use a harvester's landing histories to identify the original processor association, as described in the preceding alternative. That association may be severed at any time, subject to the forfeiture requirement. Each time a harvester severs a processor association (moving to a cooperative that associates with another processor) that harvester would forfeit a portion of its annual allocation for one or two years to either the processor (or the associated cooperative). In all cases, the forfeiture would be a short term (i.e., one or two year) forfeiture of a portion of the harvest share privilege. After the forfeiture, the harvester would be eligible to join a cooperative in association with any processor in the community to which it delivered the most pounds in a designated time period. Each subsequent association could be severed subject to the same forfeiture as the initial association severance. As with the preceding alternative, no explicit processor delivery requirement would be established by the program, but delivery requirements could be included in the negotiated associations; a Port of Kodiak delivery requirement is being considered; and no limit on processor entry would be included in the program.

Allocations to and rules governing cooperatives, rules limiting use and holdings of shares by individuals and cooperatives, sideboard limitations, share duration and renewal provisions, program review, and cost recovery are the same as under the preceding alternative.

Catcher vessel alternative 7 - Severable harvester/processor association – no forfeiture

This alternative combines aspect of the harvest only cooperative program and the alternatives requiring processor associations. 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 in the community to which it delivered the most pounds in a designated time period. 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. As with the preceding alternatives, no explicit processor delivery requirement would be established by the program, but delivery requirements could be included in the negotiated associations; a Port of Kodiak delivery requirement is being considered; and no limit on processor entry would be included in the program.

Allocations to and rules governing cooperatives, rules limiting use and holdings of shares by individuals and cooperatives, 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:

Alternatives, Elements, and Options

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 (the pilot program structure)
3. Cooperative or limited access

Catcher Vessel Alternatives (CV)

1. Status Quo (revert back to LLP management)
2. Harvester only cooperative
3. Allocation of harvest shares to processors
4. Harvester cooperatives with unseverable processor associations (the pilot program structure)
5. Severable harvester/processor association – one time forfeiture
6. Severable harvester/processor association – ongoing forfeitures
7. 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 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.

Processors who purchase and process the entry level rockfish quota must be non-qualified processors.

Entry level fixed gear sector are exempt from VMS requirements.

2.2 Fixed gear only entry level fishery

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%
- 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.

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.

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.
 - 3) The trawl LLP must have made a landing of fish in the entry level fishery with trawl gear in either 2007 or 2008.
- 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

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
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.

7.2.4 Exceptions:

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

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.

Option: 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)

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).

Do we need a direct provision/discussion of the rollover of halibut to other fisheries

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's 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.

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, 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.

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 2: (entry level processors) 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).

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 - 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

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.

Suboption: 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.

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 C – Harvester cooperatives with processor association alternatives
(CV – 4, 5, 6, and 7)

On implementation of the program, each eligible harvester will be eligible to join a cooperative in association with any processing facility in the community to which it delivered the most pounds of the three rockfish species combined in the processor qualifying years. (additional constraints may apply by alternative)

If a processing facility has closed down and another processing facility has acquired that processing history through purchase, the history belongs to the facility that purchased that history. That history must remain in the community that it was generated in. (CV – 4, 5, and 6)

If an LLP holder has no deliveries to a qualified processor, the LLP holder may join a cooperative with any one of the qualified processors. (CV – 4, 5, and 6)

The processor will be an associate of the cooperative but will not be a cooperative member.

A pre-season contract between eligible, willing harvesters in association with a processor is a pre-requisite to a cooperative receiving an annual allocation.

Co-op membership agreements will specify that processor affiliated harvesters cannot participate in price setting negotiations except as permitted by general antitrust law.

Processors are limited to 1 co-op per plant.

Co-ops may engage in inter-cooperative transfers of annual allocations to other cooperatives with agreement of the associated qualified processor.

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

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

Option 1 - Harvester cooperatives with unseverable processor associations (CV-4)

Catcher vessel cooperatives are required to have at least 75 percent of the eligible historical shares for each cooperative associated with its processor.

If an LLP holder has no deliveries to a qualified processor, the LLP holder may join a cooperative with any one of the qualified processors.

The membership of an LLP holder that has no deliveries to a qualified processor in a cooperative will not be considered in determining whether the threshold is met for cooperative formation.

Harvesters can participate in a:

Option 1: Cooperative or LLP/open access. In the limited access fishery, all participating LLPs' shares will be fished in a competitive fishery open to rockfish qualified vessels that are not members of a cooperative.

Suboption: The LLP/open access share must be delivered to one of the qualified processors.

Option 2 - Harvester cooperatives with severable processor associations and one time forfeiture (CV-5)

If an eligible harvester joins a cooperative in association with the processor to which it delivered the most pounds of the three rockfish species combined during the processor qualifying years, it will maintain all landings history without forfeiture. An eligible harvester may elect not to join the cooperative in association with the processor identified by its landings history in any year, including the first year of the program. In the first season that an eligible harvester elects not to join a cooperative in association with the processor identified by its landings history, it will forfeit:

Option 1 – 10 percent

Option 2 – 20 percent

Option 3 – 30 percent

of its qualified catch history to the (1) identified processor or (2) identified processor affiliated cooperative. The share forfeiture is

(1) a permanent forfeiture or

(2) a temporary forfeiture for a period of 1 to 2 years.

After forfeiture, the harvester may elect to enter and exit any cooperative in the fishery without share forfeiture.

If an LLP holder has no deliveries to a qualified processor, the LLP holder may join a cooperative with any one of the qualified processors. After the first year, an LLP holder that has no deliveries to a qualified processor must make a forfeiture of qualified catch history on changing processor associations, as if the processor were identified by the harvester's landings history.

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

Option 3 - Harvester cooperatives with severable processor associations and ongoing forfeiture (CV-6)

If an eligible harvester joins a cooperative in association with the processor to which it delivered the most pounds of the three rockfish species combined during the processor qualifying years, it will maintain all landings history without forfeiture. An eligible harvester may elect not to join the cooperative in association with the processor identified by its landings history in any year, including the first year of the program. In the first season that an eligible harvester elects not to join a cooperative in association with the processor identified by its landings history, it will forfeit:

Option 1 - 10 percent

Option 2 – 20 percent

Option 3 – 30 percent

of its qualified catch history to the (1) identified processor or (2) identified processor affiliated cooperative. The share forfeiture is a temporary forfeiture for a period of 1 to 2 years. After forfeiture, the harvester may elect to enter and exit any cooperative in the fishery without share forfeiture. Each time an LLP holder exits a cooperative it will be required to make a share forfeiture of the same quantity and duration.

If an LLP holder has no deliveries to a qualified processor, the LLP holder may join a cooperative with any one of the qualified processors. LLP holders that have no deliveries to a qualified processor will make a forfeiture of qualified catch history as other LLP holders.

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

Option 4 - Harvester cooperatives with severable processor associations and no forfeiture (CV-7)

Harvesters must join a cooperative to can 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

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/rougheye - 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.

13 Cooperative Harvest Use Caps

CV cooperatives

No person may hold or use more than 5% of the CV historic shares, using the individual and collective rule (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.

CP cooperatives

No person may hold or use more than 20% of the CP historic shares, using the individual and collective rule (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. 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 30% of aggregate POP, Northern Rockfish and PSR for the CV sector. (The year 2002 will be used as a base (or index) year for applying the aggregate caps.)

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.

Antitrust review – An information collection system and a review process will be defined to provide any information to determine whether any illegal acts of anti-competition, antitrust, price collusion, or price fixing have occurred among regional fishery associations or persons receiving limited access privileges.

16 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.

The Secretary may revoke any privilege under this program from any person found to have violated antitrust laws.

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 General Provisions

There are no exemptions from sideboards, except for a partial exemption for CP vessels which opt out of the cooperative program or join cooperatives.

WYAK and WGOA Primary Rockfish Species

Option 1: For fisheries that close on TAC in the GOA, the qualified vessels in each sector (trawl CV and trawl CP) 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 WGOA rockfish.

Option 2: For catcher processors, remove sideboard limits for WYAK and WGOA primary rockfish species.

Option 3: 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 each sector (trawl CV and trawl CP) 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, remove sideboard limits for WYAK and WGOA 3rd season halibut PSC.

Option 3: 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

18.2 CP Specific Sideboard Provisions

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.

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.

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.

18.3 CV Specific Sideboard Provisions

The qualifying vessels in the trawl CV 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 1: The qualifying vessels in the trawl CV sector can participate in the limited access yellowfin sole, other flatfish or Pacific Ocean perch fisheries in the BSAI in the month of July.

Qualifying vessels in the trawl CV sector would be limited, in aggregate, in the month of July, 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 CV 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.

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.

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	Pacific Ocean	Northern	Pelagic Shelf	Reason
			Perch	Rockfish	Rockfish	
1996	all	July 1	July 11	July 20	none	TAC (POP, Nor)
1996 closure		---	July 15	---	---	PSC
1997	all (incl.PSR nearshore)	July 1	July 7	July 10	June 7	TAC
1997	PSR offshore	July 1	---	---	July 15	TAC
1997 closure	POP	---	July 19	---	---	PSC
1998	all	July 1	July 6	July 14	July 19	TAC
1998 reopen	POP	July 12	July 14	---	---	TAC
1998 closure	POP	---	July 27	---	---	PSC
1999	all	July 4	July 11	July 19	---	TAC(POP, Nor)
1999 reopen	POP, Nor	August 6	August 8	August 10	---	TAC(POP, Nor)
1999 closure		---	September 3	September 3	September 3	PSC
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
2002 closure		---	August 5	---	---	PSC
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)
2004 reopen	Nor, PSR	October 1	---	October 1	October 1	HAL
2005	all	July 5	July 14	July 24	July 24	TAC (POP)/(Nor, PSR)
2005 closure		---	---	August 30	---	TAC
2005 reopen	PSR	September 1	---	---	September 1	HAL
2005 reopen	PSR	September 8	---	---	September 10	HAL
2006	all	July 1	July 6	July 22	July 21	TAC
2006 closure		---	August 3	August 3	---	TAC
2006 reopen	PSR	October 2	---	---	October 8	HAL

TAC - Total Allowable Catch reached

PSC - Prohibited Species Catch limit reached

Nor - Northern rockfish

PSR - Pelagic Shelf rockfish

Source: NOAA fisheries status reports 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 species⁹ 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 rougheye rockfish and shortspine thornyheads)¹⁰ based on the historic harvests of the sector. Exceptions are that Pacific cod is not allocated to catcher processor cooperatives and shortraker and rougheye 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, 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.

⁹ 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.

¹⁰ These species are collectively referred to as "secondary 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 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

Despite the large number of vessels that were eligible to participate in the LLP managed CGOA rockfish fisheries, Table 2-3 demonstrates that most of these vessels did not participate in the CGOA rockfish

fisheries. 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.¹¹ 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 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.

¹¹ 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.

Table 2-3. Estimated retained catch 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 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	8,577.5	43	10,647.9
	Total	11	7,944.7	32	13,087.5	43	21,032.2
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	35,099.5	55	41,119.8	74	76,219.3
	Northern rockfish	19	14,870.4	55	19,995.8	74	34,866.1
	Pelagic shelf rockfish	19	12,574.0	53	12,510.2	72	25,084.2
	Total	20	62,543.9	55	73,625.8	75	136,169.7

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)

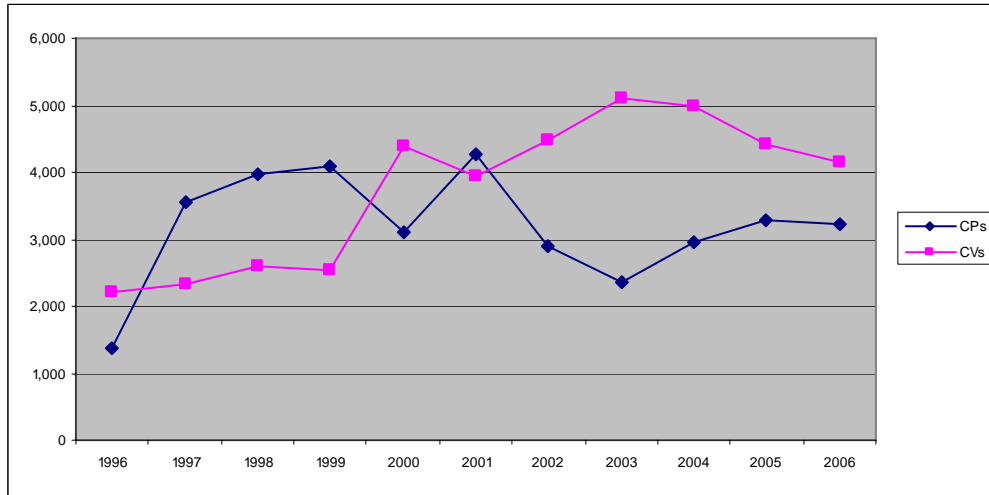


Figure 2-2. Retained catch of northern rockfish for trawl catcher processors and catcher vessels in the Central Gulf of Alaska (1996-2006)

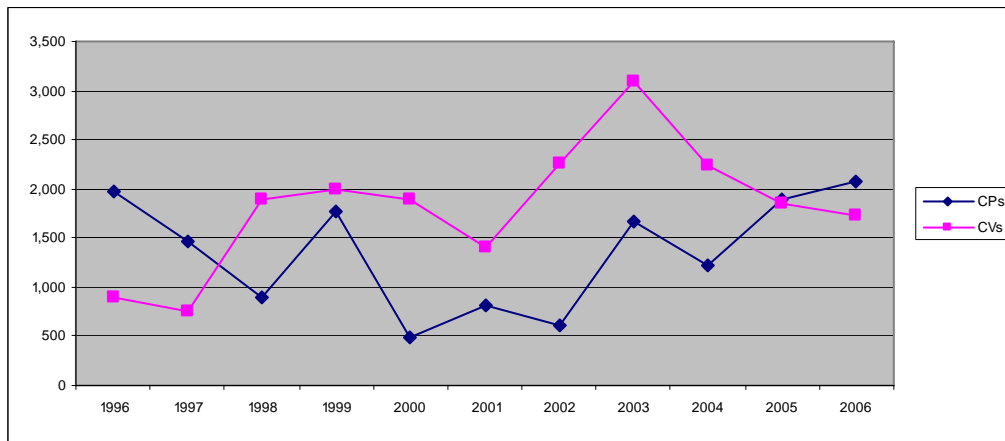


Figure 2-3. Retained catch of pelagic shelf rockfish for trawl catcher processors and catcher vessels in the Central Gulf of Alaska (1996-2006)

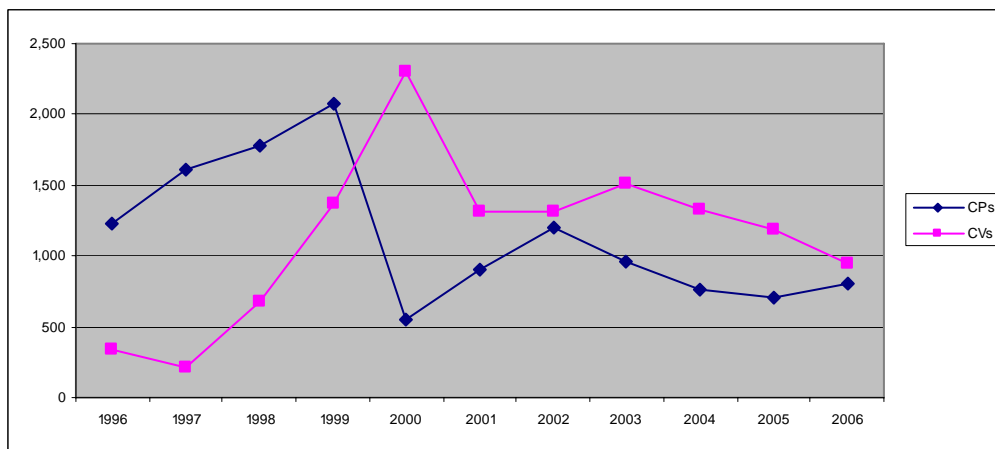


Table 2-5 shows the retained catch of secondary species by sector that targeted CGOA rockfish from 1996 to 2006, while and Table 2-6 shows the percent of retained catch of secondary species by sector.¹² Catcher vessels harvested greater amounts of Pacific cod and sablefish, while catcher processors harvested more thornyhead rockfish, shortraker rockfish, and rougheye 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, rougheye rockfish, and thornyhead rockfish fell well below 100 metric tons during the 1996 to 2006 period. For trawl catcher processors, shortraker/rougheye 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.

¹² 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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/rougheye 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.
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Table 2-9. below shows the ex vessel gross revenues of catcher vessels eligible for the CGOA rockfish program from 1996 to 2002. The table shows that these vessels have substantial participation in several other fisheries, primarily pollock and Pacific cod. Comparing this table to Table 2-27 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).

Table 2-9. Ex vessel gross revenues of catcher vessels eligible for the CGOA rockfish program (1996-2002) (needs updating to 2006)

¹³ 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.

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	44	13,430	46	7,118	43	650	43	5,821
1997	46	15,742	46	9,532	43	671	46	5,386
1998	48	13,719	48	6,736	44	905	48	3,066
1999	48	18,327	46	13,037	45	1,106	47	2,664
2000	46	25,204	46	9,962	40	1,357	46	4,676
2001	47	22,310	47	9,538	44	760	46	3,299
2002	44	14,533	45	8,924	41	939	44	3,405
Total	48	139,248	48	73,965	48	6,602	48	31,760

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	14	1,761	8	431	47	29,211
1997	16	2,348	10	1,155	46	34,833
1998	15	1,419	9	1,433	48	27,277
1999	13	2,399	6	1,471	48	39,004
2000	12	2,599	7	1,033	47	44,832
2001	11	1,799	18	686	47	38,392
2002	0	0	21	890	45	28,692
Total	18	13,985	33	7,592	48	273,152

Source: NPFMC Rockfish Database, Version 1.

Table 2-10 below shows total product weights and revenues for the catcher processor sector during the 1996 to 2002 period. Note that the rockfish production included in Table 2-10 also includes rockfish from the CGOA. Comparing this table with Table 2-28 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 (1996-2002) (needs updating to 2006)

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	8	6,276	5,357	15	9,631	7,200	15	18,376	13,031
1997	11	3,322	3,657	15	11,523	6,913	14	18,258	12,790
1998	13	9,370	5,558	13	16,322	14,526	12	11,871	5,628
1999	12	6,181	1,675	12	11,242	13,362	11	19,234	8,963
2000	12	6,858	4,390	12	13,385	15,840	12	10,933	6,820
2001	12	7,831	4,506	12	15,908	17,410	11	10,210	4,572
2002	12	7,819	4,754	12	17,400	16,824	11	12,247	7,508
Total	14	47,658	29,897	15	95,412	92,075	15	101,129	59,311

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).¹⁴ No catcher vessels participated in the catcher vessel limited access in the first two years of the program, although the

¹⁴ 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.

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.

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 rougheye rockfish (see Table 2-12). Catcher vessel cooperatives caught substantially less shortraker and rougheye 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	Rougheye Rockfish	24	9.9	2	154.4
	Shortraker Rockfish	19	9.4	(in aggregate)*	
2008	Rougheye Rockfish	21	15.3	2	148.9
	Shortraker Rockfish	22	31.9	(in aggregate)*	

Source: Catch Accounting Data and Cooperative Reports.
rougheye

Catcher processor participation declined in the first year of the program but then increased in 2008 (see Table 2-13).¹⁵ 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

¹⁵ Note that data no data shown in this table are confidential, as certain cooperative fishing is reported in the annual report of the cooperative.

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 shorttraker rockfish during both years, through transfers from the other catcher processor cooperative. It caught very little of its rougheye 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**
		Rougheye Rockfish	1	11.3	117	10
		Thornyhead Rockfish	1	23.1	74	31
	Limited Access	Pacific Ocean Perch	3	943.4	1,008	94
		Northern Rockfish	3	584.5	675	87
		Pelagic Shelf Rockfish	3	535.4	1,065	50
2008	Cooperative*	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**
		Rougheye Rockfish	2	6.9	145	5
	Limited Access	Thornyhead Rockfish	2	12.5	58	22
		Pacific Ocean Perch	4	1,305.7	1,386	94
		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 rougheye 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 rougheye rockfish was slightly more than half of the amount permitted under the MRA for 2007, while nearly 50 percent greater than amount permitted in 2008. Sablefish catch in 2008 was nearly 100 percent

greater than the maximum retainable amount permitted during that year, while thornyhead catch was slightly 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
	Limited Access only	Shortraker/Rougheye	3	32.1	2	41.3
		Sablefish	2	*	3	61.9
		Thornyhead Rockfish	2	*	4	82.5
2008	Limited Access and Cooperative	Pacific Cod	5	84.5	4	73.5
	Limited Access only	Shortraker/Rougheye	3	90.6	2	57.8
		Sablefish	6	156.228	3	86.7
		Thornyhead Rockfish	6	55.15	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.¹⁶ 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

¹⁶ 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 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 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).¹⁷ 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.¹⁸

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. Participants report that they were able to make additional harvests of flatfish as a result of these rollovers.

¹⁷ 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.

¹⁸ 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.

Catch of shorttraker rockfish and rougheye rockfish under the pilot program

In its motion defining the pilot program, the Council specifically requested staff to examine catch of shorttraker 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 shorttraker 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.¹⁹ Catcher processors in the limited access fishery and all catcher vessels are limited by a 2 percent MRA applicable to shorttraker 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 shorttraker 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 Table 2-18 and Table 2-19). Generally, catcher processors are permitted to retain more shorttraker 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 shorttraker rockfish and rougheye

¹⁹ The allocations of shorttraker 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 shorttraker 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.

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 2-18. 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 2-19. 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.

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 2-20). 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 2-20. 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 2-21).

Table 2-21. 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 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.

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 2-22). 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.²⁰

²⁰ 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 2-22. 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).

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 year of the program, the distribution of cooperative landings suggests that cooperative/processor associations had a great influence on delivery patterns (see Table 2-23). 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 2-23. Deliveries of allocated species by catcher vessel cooperatives (2007) (updated to include 2008)
proc associations

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)
Pacific ocean perch	113	3,518.2	18	3	3	
Northern rockfish	106	1,855.8	15	1	3	2,085.1*
Pelagic shelf rockfish	115	3,518.2	16	1	3	
Pacific cod	101	271.5	13	2	3	**
Sablefish	58	413.6	9	2	3	**
Shortraker rockfish	13	4.2	2	1	2	**
Rougheye rockfish	22	5.0	5	2	2	**
Thornyhead rockfish	41	41.9	7	2	2	**

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.

* 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. Shortaker, rougheye, and thornyhead rockfish also brought a premium price, but were caught in substantially lower quantities than Pacific cod and sablefish.

Table 2-24 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 2-24. 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 2-25 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 2-25. 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 year of the program, prices of primary rockfish species increased very slightly (see Table 2-26). 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.

NOTE – TABLES IN THIS SECTION WILL BE UPDATED TO INCLUDE 2008 DATA

Table 2-26. Landings, ex vessel revenues, and average ex vessel price for species allocated in the Central Gulf rockfish program (2003-2007) (needs updating to include 2008)

Species	Year	Landings (metric tons)	Ex vessel revenues (\$)	Average ex vessel price (\$/lb)
Pacific ocean perch	2003	3,467	423,051	0.055
	2004	3,471	446,415	0.058
	2005	2,922	645,521	0.100
	2006	2,872	981,132	0.155
	2007	4,203	1,481,492	0.160
Northern rockfish	2003	2,571	303,307	0.054
	2004	1,334	166,883	0.057
	2005	1,360	293,897	0.098
	2006	1,084	358,008	0.150
	2007	1,630	548,424	0.153
Pelagic shelf rockfish	2003	1,314	153,018	0.053
	2004	904	115,876	0.058
	2005	887	194,580	0.099
	2006	634	209,447	0.150
	2007	1,336	459,478	0.156
Pacific cod	2003	10,208	6,499,561	0.289
	2004	9,526	5,257,270	0.250
	2005	5,475	3,330,984	0.276
	2006	4,239	3,413,765	0.365
	2007	6,609	6,953,484	0.477
Sablefish	2003	438	1,477,622	1.530
	2004	384	1,126,453	1.331
	2005	309	965,392	1.417
	2006	269	1,018,236	1.717
	2007	258	1,576,351	2.770
Shortraker rockfish	2003	61	23,283	0.174
	2004	11	6,856	0.279
	2005	4	2,824	0.332
	2006	20	9,366	0.216
	2007	*	*	*
Rougheye rockfish	2003	65	16,427	0.114
	2004	35	5,979	0.077
	2005	16	5,530	0.158
	2006	46	21,502	0.211
	2007	35	14,576	0.187
Thornyhead rockfish	2003	80	69,461	0.392
	2004	44	29,535	0.301
	2005	24	16,941	0.326
	2006	31	19,976	0.296
	2007	21	36,296	0.780

Source: COAR Data (2003-2005).

Note: Landings include catch from fisheries other than the Central Gulf rockfish fisheries.

* Withheld for confidentiality.

2.3.7 Product Markets

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 (see Table 2-27). 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.

Table 2-27. Production of primary rockfish species by shore-based processors participating in the rockfish pilot program (2003-2007) (needs updating to include 2008)

Species	Year	Average ex vessel price (\$/lb)	Fillet				Head and gut and whole				Surimi
			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
Pacific Ocean Perch	2003	0.055	4	1,219,301	2,100,621	1.723	3	314,824	98,768	0.314	1
	2004	0.058	4	578,400	1,056,615	1.827	4	1,731,751	724,018	0.418	2
	2005	0.100	3	310,843	595,379	1.915	4	2,657,624	1,712,607	0.644	1
	2006	0.155	3	167,035	336,392	2.014	5	4,848,476	4,726,994	0.975	1
	2007	0.160	4	607,430	1,311,026	2.158	4	1,883,167	1,405,865	0.747	0
Northern Rockfish	2003	0.054	4	488,540	677,447	1.387	4	112,897	42,819	0.379	1
	2004	0.057	4	187,545	355,764	1.897	4	697,675	284,736	0.408	1
	2005	0.098	3	77,174	101,501	1.315	4	1,120,166	691,384	0.617	0
	2006	0.150	5	126,624	482,468	3.810	5	1,761,849	1,506,125	0.855	0
	2007	0.153	4	299,855	638,224	2.128	3	707,888	554,315	0.783	0
Pelagic Shelf Rockfish	2003	0.053	3	338,662	639,828	1.889	2	*	*	*	0
	2004	0.058	4	237,332	416,309	1.754	4	410,638	154,493	0.376	1
	2005	0.099	4	266,168	567,563	2.132	3	208,141	152,795	0.734	1
	2006	0.150	4	275,923	953,419	3.455	3	719,736	533,362	0.741	0
	2007	0.156	3	142,557	322,598	2.263	1	*	*	*	0

Source: COAR DATA (2003-2007).

Additional information concerning surimi production with held for confidentiality.

Note: 2007 data are preliminary and may be updated in the future.

In the first year of the pilot program, prices of the primary rockfish species products of the catcher processor sector declined from previous years (see Table 2-28). As in the shore-based sector, several factors could have contributed to this suggested price drop, including product choices. Although catcher processors that participate in the program produce exclusively whole and headed and gutted products, these products can bring very different prices.

Table 2-28. Production of primary rockfish species by catcher processors in the rockfish pilot program (2003-2007) (needs updating to include 2008)

cps

Species	Year	Number of vessels	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)
Pacific ocean perch	2003	10	11,462,910	6,505,990	0.568
	2004	12	9,809,329	6,947,473	0.708
	2005	11	10,738,090	11,016,058	1.026
	2006	10	11,408,074	13,807,506	1.210
	2007	4	6,477,911	5,725,028	0.884
Northern rockfish	2003	10	2,105,570	668,276	0.317
	2004	11	2,036,382	976,409	0.479
	2005	12	3,416,432	2,744,286	0.803
	2006	9	3,982,415	4,065,335	1.021
	2007	3	1,659,366	1,259,823	0.759
Pelagic shelf rockfish	2003	9	2,271,625	1,015,511	0.447
	2004	9	851,575	545,007	0.640
	2005	10	1,006,019	922,800	0.917
	2006	11	1,753,321	1,909,670	1.089
	2007	4	1,191,830	960,802	0.806
Pacific cod	2003	11	17,864,779	14,920,623	0.835
	2004	11	18,047,495	17,443,300	0.967
	2005	11	15,359,107	15,577,962	1.014
	2006	10	10,649,968	14,671,477	1.378
	2007	3	592,531	734,189	1.239
Sablefish	2003	11	803,388	2,217,625	2.760
	2004	11	511,918	1,660,316	3.243
	2005	11	578,119	1,979,752	3.424
	2006	10	520,027	1,686,738	3.244
	2007	4	404,541	1,275,657	3.153
Shortraker rockfish	2003	11	486,604	732,675	1.506
	2004	11	257,370	459,690	1.786
	2005	10	264,704	424,927	1.605
	2006	10	217,717	372,727	1.712
	2007	4	152,989	212,337	1.388
Rougheye rockfish	2003	9	241,545	210,966	0.873
	2004	11	99,420	111,141	1.118
	2005	8	92,606	107,126	1.157
	2006	10	83,898	98,027	1.168
	2007	4	61,328	49,343	0.805
Thornyhead rockfish	2003	11	973,629	1,436,405	1.475
	2004	11	489,737	757,948	1.548
	2005	11	477,552	600,283	1.257
	2006	10	438,115	632,401	1.443
	2007	4	411,965	610,356	1.482

Source: COAR Data (2003-2007).

Notes: 2007 data are **preliminary**. 2007 data includes only participants in the Central Gulf rockfish fishery. All other years include all catcher processors eligible for the rockfish pilot program.

2.3.8 Community and Social Conditions

Fisheries impact communities through the economic and social activities generated through participants in the different industry sectors and through supporting industry and business. 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.

LLP Management

Participants in the CGOA rockfish fisheries are from several different communities. CFEC vessel license files were used to estimate the participation by residency. Table 2-8 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 2-29. 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	]	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

Pilot Program

Historically, Kodiak has been the base for operations in the shore-based sector of the Central Gulf rockfish fisheries. Almost all processing in the fisheries took place in Kodiak leading up to implementation of the program. 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.

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. 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 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. Through this methodology, the impacts are brought to light, allowing the reader to evaluate the potential significance of impacts of the different alternatives.

In addition to the main rockfish program, all of the program alternatives provide for an entry level fishery that is allocated 5 percent of the TAC of the CGOA target rockfish species. To simplify and provide a more coherent analysis, the entry level fishery is analyzed separately from the main rockfish program fishery.

2.4.1 Effect on management, monitoring, and enforcement

This section briefly summarizes management, monitoring, and enforcement requirements under the 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.

Non-trawl fishing in the rockfish fisheries would begin on January 1st. The trawl season would revert back to opening in early July and ongoing catch would be monitored by managers with the closing timed to coincide with harvest of the TAC.²¹

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 under 125 feet and 60 feet or greater in length are required to have 20 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).

THIS SECTION WILL BE SUPPLEMENTED IN NEXT DRAFT

Catcher Processor Sector Allocation with Cooperatives
Catcher Vessel - Allocation of harvest shares to processors
Entry Level Fishery
Incidental Catch Allowance

2.4.2 Effects on harvest participation and fishing practices

This section discusses the specific impacts on harvester participation and patterns. Patterns and levels of harvester participation in the CGOA rockfish fisheries are likely to vary under the different alternatives. Under the status quo alternative, participation would likely be similar to participation prior to implementation of the rockfish pilot program in 2007. Under the cooperative program alternatives, participation would likely be similar to the current rockfish pilot program with the potential for some modifications as cooperative member continue to coordinate and consolidate fishing and distribute their harvests over a greater portion of the year.

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 shows historic participation from 1996 to 2006 by sector. Reverting to LLP management is likely to result in the fishing practices and patterns seen prior to implementation of the rockfish pilot program in 2007. In that fishery, the non-trawl fishermen took very little of the TAC between the opening on the non-trawl fishery 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 were caught first, followed by northern rockfish and pelagic shelf rockfish. In the past, catcher processors have caught more rockfish than catcher vessels. However, in the years leading up to implementation of the rockfish pilot program, the portion of the TACs caught by catcher vessels increase and surpassed the catch of catcher processors.

The quality of fish harvested likely suffered from the race for fish. Rockfish were considered relatively difficult to handle because of their spines and scales. These characteristics are said to have made it more difficult to maintain quality when racing to maximize catch. In addition, harvesters that tried to maximize catch on a tow were likely to overstuff their nets, which also affected fish quality. Catcher vessel holds typically used refrigerated sea water to maintain quality.

Secondary species (such as Pacific cod, sablefish, thornyhead, shortraker, and rougheye) were often harvested on separate tows from the target rockfish. Rockfish fishermen typically received a higher price

²¹ Additional information concerning current management appears in the description of the affected environment above.

for these fishy, but processors demanded better handling and quality. To meet these demands, catcher vessels often separated their secondary species harvests, carrying them in iced totes, rather than in the refrigerated sea water of their holds.

During the race for fish, trawl catcher processors must not only harvest fish rapidly, but catcher processors must also process their catch rapidly to maintain quality and accommodate additional catch. Discards can occur if the fish is not processed quickly enough to 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 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, substantial growth in participation could occur. Whether new entry would occur depends largely on whether potential entrants perceive a gain from entry. Given the short season under LLP management, 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 LLP management is implemented.

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.

Trawl entry is only likely to occur if new entrants believe that they can make substantial harvests in the short fishery. To enter, participants would have to forego opportunities in other fisheries and would need to compete for landings with current participants. The opening of the Aleutian Islands Pacific ocean perch, Bering sea flathead sole, and the rex sole and deep-water flatfish fisheries in the Gulf of Alaska and the Western Gulf of Alaska rockfish fisheries would likely 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 fishermen eligible for the CGOA rockfish fisheries that perceive these other opportunities. In addition, the trawl rockfish seasons are likely to be short based on the length of the fishing seasons prior to implementation of the rockfish pilot program. The shortness of the fishery (i.e., a few weeks at most) would likely limit learning time for new entrants.

Catcher Processor Sector Allocation with Cooperatives
Catcher Vessel – Allocation of harvest shares to processors
Entry Level Fishery
Incidental Catch Allowance

2.4.3 Effects on participation in the processing sector

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 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 head and gut 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 were typically processed into higher quality products.

Catcher Processor Sector Allocation with Cooperatives
Catcher Vessel - Allocation of harvest shares to processors
Entry Level Fishery

2.4.4 Effects on shore-based processing efficiency

This section of the analysis examines the effects of the alternatives on catcher processor efficiency. Since only one of the alternatives apply to catcher processors, this section only considers the effects of that alternative on catcher processor efficiency. 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. The next two sections examine catcher vessel efficiency and shore-based processor efficiency, which together determine production efficiency in the shore-based sector. 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.

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.²² 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 of both the markets for inputs

²² 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.

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 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.²³

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 were 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. Although catcher processors processed their catch quickly relative to catcher vessels, quality of harvests likely suffered to some extent as participants maximized their catch rates. Diminishing quality dissipated 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 maintained.

Catcher Vessel - Allocation of harvest shares to processors Entry Level Fishery

2.4.5 Effects on catcher vessel efficiency

This section examines efficiency in the catcher vessels sectors under the alternatives that apply to the sector. A limited literature has developed examining the effects of harvester landing obligations (such as processor quota shares and cooperative/processor associations of the AFA type) on efficiency and the distribution of benefits between harvesters and processors. The analysis, however, provide some theoretical basis for analyzing efficiency and the distribution of benefits between the sectors.

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

²³ 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.

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.²⁴ 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 pilot 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 also limited by the short, race for fish that has arisen under LLP management. Catcher vessel efficiency is particularly vulnerable under LLP management because catcher vessel efforts that maximize the share of the TAC 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 and decrease total travel time to and from grounds 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 - Allocation of harvest shares to processors **Catcher Vessel – Fixed harvester cooperatives with processor associations** **Entry Level Fishery**

2.4.6 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 poor quality are

²⁴ Catcher vessel participants that are affiliated with, or owned or controlled by processors, however, may not join FCMA cooperatives.

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.²⁵ 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 - Allocation of harvest shares to processors Entry Level Fishery

2.4.7 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. This analysis is relatively short, as it is derived from the separate analysis of efficiency of the fishing and processing sectors above.

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 in 2007 if status quo is implemented. 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 revert to levels prior to implementation of rockfish pilot program. Catch is likely to be of high quality and will be processed into relatively high valued products.

Catcher Processor Sector Allocation with Cooperatives Catcher Vessel - Allocation of harvest shares to processors Entry Level Fishery

2.4.8 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

²⁵ 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.

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

2.4.9 Effects on management, monitoring, and enforcement costs

Management, monitoring, and enforcement under the different alternatives are described in section 2.4.1 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

Catcher Vessel Program Alternatives

Entry Level Fisheries

2.4.10 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).²⁶ Additionally, minor amounts of other species are caught incidentally, much of which is discarded (see Table 2-44). 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).

2.4.11 Effects on New 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

Catcher Processor Sector Allocation with Cooperatives

Catcher Vessel - Allocation of harvest shares to processors

2.4.12 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

²⁶ 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.

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

2.4.13 Effects on Fishing Crew

Status Quo

Program Alternatives

2.4.14 Effects on Shore-Based Processing Crew

Status Quo

Program Alternatives

2.4.15 Effects on Excessive Shares

Limits on excessive shares can serve a variety of purposes, including limiting market control to prevent monopoly power in the product market, limiting market control in the labor market, limiting the ability of a few shareholders to control entry to the fishery, limiting windfalls from the resource, and increasing the number of persons that are supported by resource utilization and production. In the case of a pilot program, such as this, the limits may also improve the utility of the program as a demonstration for both participants and managers, as broader participation would familiarize more participants with the workings of a rationalized fishery, which could affect their choices in future rationalization programs. The rationalization program proposed is also complex, relative to those in other North Pacific fisheries (i.e., halibut and sablefish), since it involves share allocations of several species (including target and incidental catch species) that are fished simultaneously. Consolidation of shares by a few participants could limit the ability of management to identify and develop solutions to problems that might arise in a more complex program (such as Gulf rationalization). The benefit of a more expansive pilot program to management could be considerable.

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.

Since the pilot program alternatives for the each sector have the same excessive share limitations, the effects on excessive shares for each sector are discussed in a single section.

Status Quo

Since no allocation would be made under LLP management, no issue concerning excessive shares exists.

Catcher Processor Program Alternatives
Catcher Vessel Program Alternative

2.4.16 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

2.4.17 Effects on Other Fisheries

Development of a rationalization program often will impact other fisheries, if participants in the rationalization program are able to increase their effort in other fisheries because of the redistribution of effort under the rationalization program. This section examines the effects of the pilot program alternatives on other fisheries.

Status Quo

Reverting to LLP management will have little effect on other fisheries. The opening of the rockfish fisheries while under LLP management is scheduled to distribute effort between rockfish and flatfish in the North Pacific. Reverting to LLP management should distribute fishing effort.

Catcher Processor Alternatives
Catcher Vessel Alternatives

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, there are three alternatives. The first is the no action alternative. Under this alternative, the entry-level sector would revert back to LLP management. The second alternative is the existing structure. Under this alternative, the eligible trawl and fixed gear participants would receive equal allocations of the aggregated TACs of the primary rockfish species available to the entry level fishery. The final alternative is a fixed gear only entry level fishery. Qualified trawl entry level participants from the pilot program would graduate into the main program under this alternative.

For the catcher processor sector, there are two alternatives. The first is the no action alternative. Under this alternative, the catcher processor sector would revert back to LLP management. The second alternative, the existing structure, would allocate to the trawl catcher processor sector target rockfish species and secondary species based on the harvest history of sector members. Under this alternative, eligible sector participants could join a cooperative.

For the catcher vessel sector, there are five alternatives. Alternative one is the no action alternative. Under this alternative, the sector would revert back to LLP management. The second alternative would allocate the CV sector's allocation of primary rockfish, secondary species, and halibut PSC between harvesters (CV only) and shore based processors. Holders of catcher vessel harvest history or processor histories may join a cooperative to coordinate the harvest of the allocations. The third alternative is the existing structure. Under this approach, the catcher vessel sector would receive an allocation of the target rockfish species and secondary species based on the harvest history of the sector members. Annual allocations of CGOA rockfish, secondary species, and halibut PSC would be made to a cooperative, based on the CGOA rockfish history of their members. Each eligible catcher vessel license holder would be eligible to join a cooperative associated with the eligible processor to which it delivered the most of CGOA rockfish during the processor qualifying years. The fourth alternative parallels the current catcher vessel program by establishing a system of cooperatives that harvesters must join to access exclusive harvest privileges. Under this alternative, a harvester at the outset would be eligible to join a cooperative or association with the processor to which it delivered the most pounds during a specified time period, but if a harvester elected not to join that cooperative, the harvester may move to another cooperative (and processor association) by making a one time forfeiture of a portion of its harvest allocation. The final alternative is identical to the previous alternative except the harvester would have to forfeit shares each time it severs a processor association.

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 2-30 .

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 2-30. 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 2-31.

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 2-31. 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 mangement 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 2-32.

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 2-32. 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 2-33.

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, roughey rockfish, northern rockfish, pelagic shelf rockfish, thornyheads, and other rockfish have an MRA of 7 percent.

Table 2-33. 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/Roughey Rockfish

As with most other rockfish, shortraker rockfish (*Sebastes borealis*) and roughey 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. Roughey are typically most abundant in the Southeastern area. Estimates of maximum age of shortraker rockfish is 120 years, while estimates of maximum age of roughey rockfish range from 90 years to 140 years.

As with other slope rockfish, shortraker and roughey 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 roughey 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 roughey 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, roughey or shortraker/roughey catch. In 2004, shortraker rockfish and roughey 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 roughey 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.²⁷ Catcher processors in the limited access fishery and all catcher vessels are limited by a 2 percent MRA, applicable to shortraker and roughey 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 roughey 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 2-34.

²⁷ The allocations of shortraker and roughey 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 roughey 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 2-34. 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
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	
	Rougheye	1,545	833	833	

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, *Sebatoobus 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 2-35.

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 2-35. 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 2-36.

Table 2-36. 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 2-37 and Table 2-38 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 five²⁸) 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.²⁹ 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.

²⁸ 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.

²⁹ Trawl vessels fishing for pollock with pelagic gear may continue despite closure of shallow-water fisheries.

Table 2-37. 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 2-38. 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 2-39.

Table 2-39. 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 2-40, 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.³⁰ 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.³¹

Table 2-40 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 2-41). 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

³⁰ 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.

³¹ 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 2-41. 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 first two 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, while in 2008, 135 metric tons was reallocated. In both 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 Figure 2-4, 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.

Figure 2-4. Season duration of the trawl Central Gulf of Alaska groundfish fisheries from October 1 to December 31, 2000 to 2008

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	[Shaded orange]												
2001	[Shaded orange]												
2002	[Shaded orange]												
2003	[Shaded orange]												
2004	[Shaded orange]												
2005	[Shaded orange]												
2006	[Shaded orange]												
2007	[Shaded orange]												
2008	[Shaded orange]												

Source: NOAA Fisheries status reports and groundfish closure summaries

Catch of groundfish late in the year has fluctuated both before and after implementation of the rockfish pilot program. Table 2-42 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 2008. 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 and 135 metric tons in 2008, 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 2-42. 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 - 2008

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

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 2-43 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 2-43. 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 2-44 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 2-44. 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

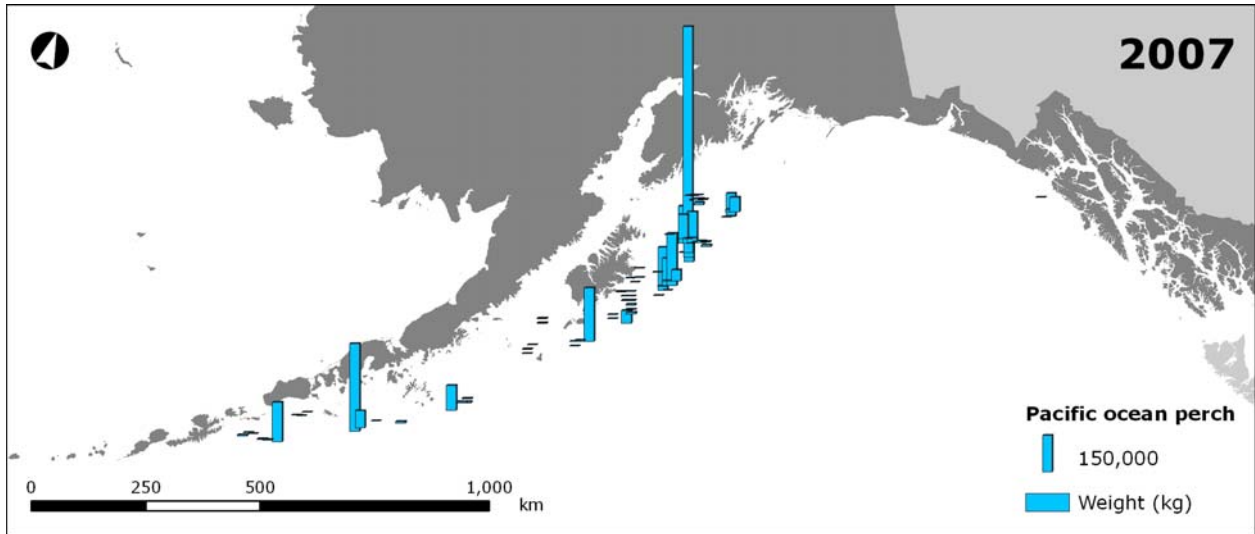
Source: Catch accounting and Blend Data

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.

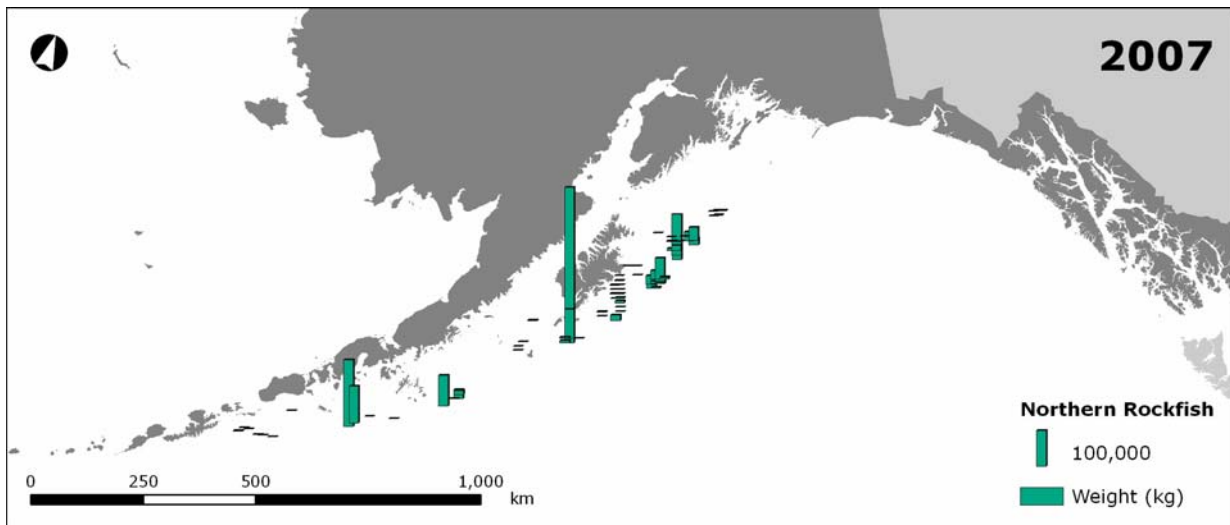
Figure 2-5, Figure 2-6, and Figure 2-7 show the concentration of observed rockfish trawl hauls for 2007. The areas of greatest concentration are on the slope south of the Kenai Peninsula, with fewer areas of concentration south of Kodiak Island and south of the Alaska Peninsula. The Pacific Ocean perch 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 2-5. Pacific ocean perch catch based on observer data (100 square kilometer blocks) for 2007



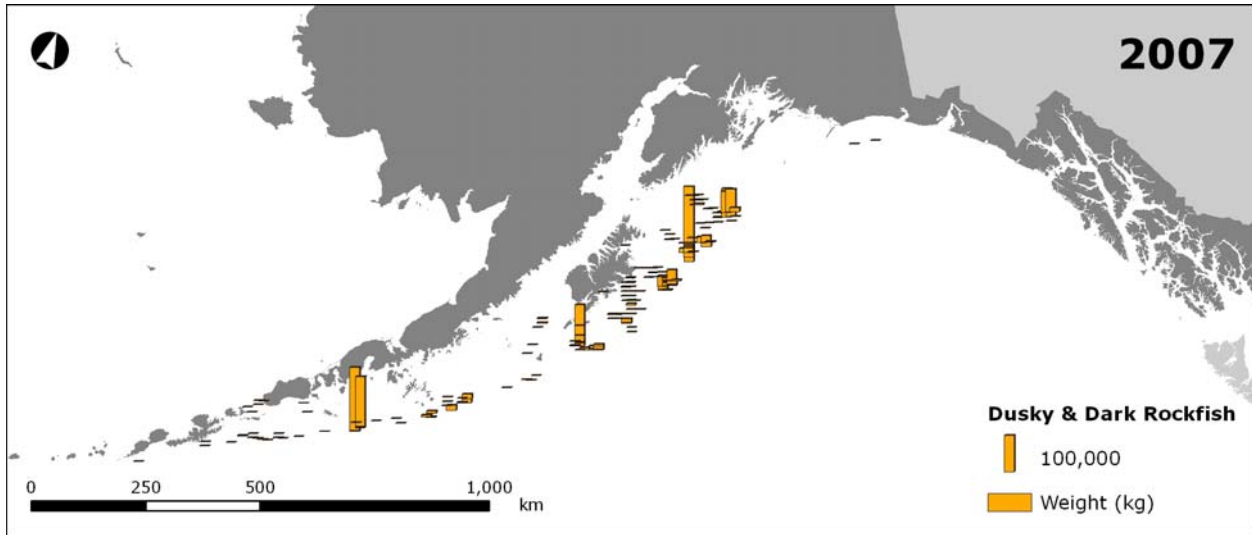
Source: Dana Hanselman

Figure 2-6. Northern rockfish catch based on observer data (100 square kilometer blocks) for 2007



Source: Dana Hanselman

Figure 2-7 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, 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 of the fisheries is contained in Section 2.4 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 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

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.

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. A 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 to 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 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.

THIS SECTION WILL BE SUPPLEMENTED WITH A DISCUSSION OF ADEQUACY OF THE INCIDENTAL CATCH ALLOWANCES TO SUPPORT OTHER FISHERIES – IN RECENT SEASONS INCIDENTAL CATCHES OF TARGET ROCKFISH HAVE RISEN SUBSTANTIALLY IN OTHER FISHERIES

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 shortaker 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.³² 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 2-45 and Table 2-46) 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 2-45. 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.

³² 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 2-46. 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 shortaker allocation	95.0*	NA	
	Maximum sector rougheye allocation	491.0*	NA	
	Maximum sector catch of MRA shortaker and rougheye - aggregate	123.8**	132.5	
	Maximum retained catch of shortaker and rougheye			718.5
Maximum permitted catches under second year co-op memberships	Allocation of shortaker to cooperatives	48.0		
	Allocation of rougheye to cooperatives	251.0		
	Maximum MRA catch of shortaker and rougheye - aggregate	61.9	132.5	
	Maximum retained catch of shortaker and rougheye			493.4
Catches in the second year	Total catch of shortaker by cooperatives	28.7	32.0	
	Total catch of rougheye by cooperatives	6.9	15.0	
	Total catch of shortaker and rougheye by limited access	54.4		
	Total catch of shortaker 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 shortaker to cooperatives from 30.03 percent to 50 percent or to manage shortaker and rougheye rockfish under a combined MRA of 2 percent for catcher processors fishing in a cooperative. This change in the management of shortaker 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 shortaker 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 2-47). 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 shortaker rockfish and rougheye rockfish in all fisheries relative to their TACs do not suggest a risk of overharvest in those years (see Table 2-48), but in 2008 catch of shortaker outside of the rockfish fishery increased substantially over historic levels.

Under the first option for modifying management of shortaker, the maximum allocation to catcher processor cooperatives would be increased to 50 percent of the shortaker TAC. In the second year of the program, catches of shortaker by catcher vessels in the rockfish fishery were 10 percent of the TAC,³³ while catches outside of the program were approximately 50 percent of the shortaker TAC. Both catcher vessel rockfish fishery catches and catches outside of the rockfish fishery reached their highest percentage of the shortaker TAC since management of shortaker was separated from rougheye management in

³³ This catch of shortaker 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).

2005.³⁴ 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.³⁵ 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.

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Table 2-47. 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.

³⁴ 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.

³⁵ 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 2-48. 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

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 (*Onchohynchus 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 2-49 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 chook 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 2-49. 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 habitat affected would be sand and sandy silt at depths of 80 to 250 fathoms (NMFS, 2005). The Pacific cod habitat 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 habitat 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 effect 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

Under status quo, the CGOA rockfish fisheries would revert back to LLP management. Participants from both sectors would likely revert to racing to catch as much fish as possible prior to catch of the TAC. Given the length of the fishery prior to implementation of the rockfish pilot program in 2007, the fisheries would likely last only a few weeks each year. As a result of a race for fish, participants (particularly in the catcher vessels and shore-based processors) often sacrifice quality of landings and products to maintain their shares of the catch, dissipating rents in the fishery. Product choices would likely be limited for processors, as they attempt to keep pace with landings. The proposed alternatives to the status quo are intended to address these issues, by allocating shares to cooperatives and ending the race for fish. Several small entities (as defined by the RFA) participate in these fisheries and experience these effects.

Under the catcher processor alternative, eligible members of the sector would be permitted to join cooperatives that would receive annual allocations based on member catch history. A cooperative's allocation would be fished in accordance with a cooperative agreement negotiated by its members. This alternative would likely benefit members of this sector, by providing cooperatives with an exclusive allocation of rockfish. These exclusive allocations, together with the coordination of fishing in cooperatives, will allow participants to determine their effort in a manner that minimizes costs. Vessels may be removed from the fishery and the rate of catch may be slowed, allowing for reduced costs and possible increases in revenues. Potential revenue improvements are uncertain for cooperative participants, as their product outputs are subject to operational limitations. Modification of vessels to produce higher value products is likely to be cost prohibitive for most members of the sector.

Under all catcher vessel alternatives, production by the shore-based sector would remain at current levels or increase. Product quality should continue to improve and output should continue to shift to higher valued products. Overall, participants in both the catcher vessel and processing sectors would likely be better off under the proposed alternatives than under status quo. The effects of the rockfish program alternatives on these sectors are not the same.

Harvesters would likely enjoy the greatest benefit under the alternative that allocates harvester shares to processors because catcher vessels will have greater negotiating leverage under this alternative since catcher vessels would not be required to form associations with identified processors. As a result, catcher vessel entities should realize the greatest benefit under this alternative, while processing entities would benefit less. Harvesters would likely have less negotiating leverage under the alternative that allows harvesters to modify their association with processor identified by its landing history, because catcher vessels will likely be required to forfeit some percentage of its qualified catch history to the identified processor. Finally, under the alternative with cooperative/processor associations, processors should have greater negotiating leverage because of the specific processor association that a catcher vessel must accept to enter the rationalized fishery. As a result, processors should benefit more than catcher vessels under this alternative.

Under all three alternatives, the distribution of benefits will vary within each sector. In addition, some participants could be disadvantaged. Under either alternative, catcher vessel entities that receive small allocations could be disadvantaged, if holders of large allocations are able to draft cooperative terms that favor holders of large allocations over holders of small allocations. Since catcher vessel participants can freely form cooperatives under the alternative with allocations of harvester shares to processors, the potential of recipients of small allocations to be disadvantaged is reduced.

Qualified processors with less historic participation in the rockfish fishery would be better situated to increase their landings from the rockfish fishery under the allocation of harvest shares to processors alternative, because the limit on entry allows all qualified processors to compete for landings. On the other hand, processors with greater historic participation would continue to enjoy less constrain from processing time pressure caused by the race for fish under an LLP management fishery.

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 2-50). 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 2-50. 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 2-50. 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 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.

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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