

March 21, 2005

Central Gulf of Alaska rockfish demonstration program documents

Enclosed are two following two documents concerning the rockfish pilot program:

- 1) A "Discussion of Three Open Issues" and
- 2) An Initial Review Draft of the RIR/EA/IRFA of the alternatives.

The discussion paper is intended to address three options in the elements that define the alternatives for the pilot program.

In reviewing the analysis you will note several highlighted areas. Highlighting is intended to show the areas that a) need supplementation or b) could require revision, depending on whether the Council elects to resolve any of the outstanding options.

Discussion of Three Open Issues

Issue 1: Section 3.3.1.3 - Prohibited Species (halibut) Allocations

Section 3.3.1.3 of the Council motion relates to making a prohibited species allowance allocations to the CP and CV sectors for halibut caught while targeting rockfish in the CGOA. Currently, halibut is a prohibited species and halibut caught while trawling for rockfish are immediately returned to the sea.

The Council motion addresses halibut prohibited species harvest with two options. Allocation of halibut to the CP and CV sectors under the pilot program is based upon historic average usage. The historic average usage is calculating by summing the total metric tons of halibut mortality in the CGOA rockfish target fisheries during the years 1996 through 2002 and then dividing that total by seven (the number of years between 1996 and 2002).

The calculation described above provides an estimated average annual mortality, shown in Table 1 below. As noted in the citation for Table 1, the data used in the calculations come from NMFS. The CP sector halibut mortality is based upon estimates of halibut bycatch from observer data. NMFS estimates the total halibut caught by the CP trawl fleet and then calculates halibut mortality, using a halibut mortality factor. The estimate for halibut mortality is shown in the center column of Table 1. The average annual halibut mortality for the CP sector is 111.29 mt. over the period from 1996-2002.

The total average annual halibut mortality for the CV sector is 113.06 mt., as noted at the bottom of Table 1. For the CV sector, the processor's weekly production reports are utilized to calculate the retained groundfish harvests. The amount of halibut discarded by the CV fleet is estimated by NMFS using projections from observer data.

The two estimates of halibut mortality for the CP and CV sectors presented above provide the estimated halibut mortality by sector for Option 1 as defined in the Council motion. The motion directs the allocation between sectors to be based upon "*the actual use of each sector*". The average annual halibut mortality for the CP sector is 111.29 mt. and the average annual halibut mortality for the CV sector is 113.06 mt.

Option 2 from the Council motion directs the prohibited species halibut allocation to be based upon "*the relative amount of target rockfish species allocated to each sector*". There are two methods to make this calculation as described below.

The first calculation for Option 2 halibut mortality allocation is shown in Table 2. To make this calculation, the total average annual mortality of halibut for the CP sector and CV sectors, 224.35 mt., is allocated between the two sectors based on their relative share of targeted rockfish harvests during the period 1996-2002.

Table 19 in the main report shows the respective harvests by permanent LLP license holders for Pacific Ocean perch, northern rockfish and pelagic shelf rockfish over the period 1996-2002. Table 2 below shows the respective totals for the CP sector and CV sectors, and also the respective total proportional share represented to those totals. The CP sector accounted for 48.34 percent of the CGOA targeted rockfish during the 1996-2002 period. Applying this proportion to the total halibut mortality (224.35 mt.) results in an allocation of 108.46 mt. to the CP sector. Similarly, the CV sector accounted for 51.66 percent of the targeted rockfish harvest in the CGOA during the 1996-2002 period. Applying this proportion to the total halibut mortality (224.35 mt.) results in an allocation of 115.89 mt. to the CV sector.

Table 1: Option 1 Halibut Mortality for the CGOA Trawl Rockfish Fishery 1996-2002

Year	vessel type	estimated halibut harvest (mt.)	estimated halibut mortality (mt.)	targeted rockfish harvest (mt.)
1996	CP	88.75	50.61	7,111.95
1997	CP	221.24	143.81	8,718.47
1998	CP	215.22	146.35	9,049.53
1999	CP	263.54	168.64	9,322.94
2000	CP	72.67	47.96	6,202.18
2001	CP	160.37	110.64	7,881.36
2002	CP	160.86	110.99	6,114.43
totals (mt.)	CP	1,182.66	779.00	54,400.86
average annual halibut mortality (mt.)			111.29	

Year	vessel type	estimated halibut harvest mt.	estimated halibut mortality mt.	targeted rockfish harvest mt.
1996	CV	163.11	92.98	7,340.23
1997	CV	76.21	49.54	4,669.52
1998	CV	127.72	86.84	5,680.23
1999	CV	194.26	124.33	8,797.19
2000	CV	206.62	136.36	10,574.27
2001	CV	298.91	206.27	8,786.00
2002	CV	137.82	95.10	10,143.63
totals (mt.)	CV	1,204.65	791.42	55,991.07
average annual halibut mortality (mt.)			113.06	

data source: Summarized from NMFS GOAHALX 1996-02.
Program data, 1996-2002.

Table 2: Option 2A Method for Halibut PSC Quota Allocation

Estimate the total halibut mortality 1996-2002 in aggregate for both CP & CV			
Allocate halibut according to relative share of targeted rockfish			
Total CP targeted rockfish 1996-2002 (permanent LLPs)	34,074.10	mt.	
Total CV targeted rockfish 1996-2002 (permanent LLPs)	<u>36,409.80</u>	mt	
total trawl CGOA rockfish harvest ⁽¹⁾	70,483.90	mt.	
proportional share of targeted CGOA rockfish by CPs	48.34%		
proportional share of targeted CGOA rockfish by CVs	51.66%		
average annual halibut mortality for CPs & CVs 1996-2002	224.35	mt.	
halibut share to CP sector	108.46	mt.	
annual halibut share to CV sector	115.89	mt.	

⁽¹⁾ source for the relative rockfish allocations for the CP and CV sectors is Table XX.

Another interpretation of the application of Option 2 is presented in the following discussion, using 2002 as the base year for allocations. The data for initial rockfish species allocation by sector and species (Table 19 in the main report) are shown in Table 3. The respective catch by species for the CP and CV sectors are calculated by species, for the target species POP, northern rockfish and pelagic shelf rockfish. Using the TACs for 2002, the 2002 allocation is calculated using the proportions from the 1996-2002 qualifying catch by species. The resulting 2002 projected allocation is in turn used as a relative proportion of the total 2002 CGOA rockfish harvest. The respective proportions are utilized to allocate the 224.35 annual halibut mortality to each of the sectors, by species. The result of these calculations is shown at the bottom of Table 3. Using the 2002 TACs as the base year, the halibut mortality allocation to the CP sector totals 116.71 mt. The equivalent halibut mortality allocation to the CV sector totals 107.64 mt.

Table 3: Option 2B - Alternate Method for Halibut PCS Quota Allocation

species	sector	qualified tons	allocation %	2002 TAC (mt.)	2002 allocation	2002 halibut allocation (mt.)
Pacific Ocean Perch	CP allocation	19,773	49.97%	8,220	4,107.6	58.07
	CV allocation	19,796	50.03%	8,220	4,112.4	58.14
Northern Rockfish	CP allocation	9,782	61.07%	4,170	2,546.7	36.00
	CV allocation	6,235	38.93%	4,170	1,623.3	22.95
Pelagic Shelf Rockfish	CP allocation	6,855	46.01%	3,480	1,601.2	22.64
	CV allocation	8,043	53.99%	3,480	1,878.8	26.56
total rockfish allocations indexed to 2002 TACs (mt.)					15,870.0	
annual average halibut mortality (1996-2002) (mt.)					224.35	
halibut share to CP sector			116.71			
annual halibut share to CV sector			107.64			

The selection of the method for making the sector allocations for halibut mortality quota is one of choice by the Council. There is not a methodological reason for selection of one method over another. Option 1 offers the simplest and most direct method, but all three methods offer generally similar results.

Issue 2: 3.3.1.2 - Secondary Species Allocation for Shortraker/Rougheye

At the February, 2005 meeting, the North Pacific Fishery Management Council added an additional option for consideration of the secondary species shortraker/rougheye allocation to the catcher vessel (CV) fleet. The new language is:

“The shortraker/rougheye allocation for the catcher vessel sector will be based on the total catch of the sector during the target rockfish fishery over total catch of all sectors which yields the highest annual percentage during the qualifying years.”

The calculation of this new option is presented in the tables and discussion below. The calculation for the relative percentage for the CV shortraker/rougheye harvest of the total CGOA harvest for all fisheries is shown in Table 4. The overall total for all years results in shortraker/rougheye harvests in the targeted CGOA trawl rockfish fishery as 4.73 percent of the entire CGOA harvest for all fisheries. However, as the table shows, the respective percentages for the individual years vary from a low of 1.87 percent in 1997 to a high of 9.36 in 1996. Since the Council language for the new option specifies the highest individual year over the qualifying period, the highest figure for the CV sector of 9.36 percent of the total CGOA harvest would be the appropriate allocation factor under this option.

As noted elsewhere in this report, the Council took action in December 2004 to separate future management and allocations of shortraker rockfish and rougheye rockfish. However, it is not possible to retroactively go back and divide the harvest records since the fish tickets for the appropriate years recorded catches for the aggregate shortraker/rougheye group instead of separate species.

Table 4: CGOA Harvest of Shortraker/Rougheye Rockfish for the CV Sector 1996-2000

Species	Year	Sector	Sector Sum (mt.)	Total CGOA Harvest (mt.)	Percent sector/total
shortraker/rougheye	1996	CV	88.08	941.27	9.36%
shortraker/rougheye	1997	CV	17.48	932.66	1.87%
shortraker/rougheye	1998	CV	42.08	869.85	4.84%
shortraker/rougheye	1999	CV	45.99	579.89	7.93%
shortraker/rougheye	2000	CV	41.06	883.70	4.65%
shortraker/rougheye	2001	CV	18.38	998.16	1.84%
shortraker/rougheye	2002	CV	22.94	631.61	3.63%
total 1996-2002			276.00	5,837.13	4.73%

Source: 1996-2002 NMFS blend data

To apply the secondary allocation under the new shortraker/rougheye, it may be necessary to split the allocation based on the respective proportion of TAC for the two species. For 2005, for example, the TAC for shortraker rockfish is 324 mt. and the TAC for rougheye rockfish is 557 mt. Applying the 9.36 percent allocation factor to the 2005 TACs results in an allocation for the CV sector of 30.32 mt. of shortraker rockfish (9.36 percent times 324 mt.) and 52.14 mt. of rougheye rockfish (9.36 percent times 557 mt.).

For purposes of comparison, the following tables (Tables 5, 6 and 7) are presented showing the allocation of shortraker/rougheye that would result using the combined harvest totals for the entire period 1996-2002 on the basis of: 1) retained harvest over total harvest; 2) retained harvest over retained harvest; and 3) total harvest over total harvest.

Using the harvests over the entire harvest period, the shortraker/rougheye allocations would be as follows for the CV fleet:

retained harvest over total harvest	3.87 percent of the CGOA TAC
retained harvest over retained harvest	5.91 percent of the CGOA TAC
total harvest over total harvest	4.87 percent of the CGOA TAC

Table 5 - Rockfish Pilot Program: Secondary Species Allocation by Sector - Retained over Total
retained harvest by species in targeted rockfish fishery divided by total CGOA harvest

Secondary Species/Sector (1)	2005 TAC (mt)	Option 1 Allocation Proportion	Option 1 Allocation (mt)	Option 2 Allocation Proportion	Option 2 Allocation (mt)	Average Harvest 1996- 2002
Pacific cod CV	25,086	1.64%	411.7	2.00%	500.8	613.4
Pacific cod CP	25,086	0.19%	48.9	0.20%	49.3	72.9
Sablefish CV	7,250	5.77%	418.4	5.74%	416.2	350.8
Sablefish CP	7,250	3.95%	286.1	3.94%	285.6	239.9
Shortraker/Rougheye CV ⁽²⁾	881	3.97%	35.0	3.87%	34.1	33.1
Shortraker/Rougheye CP ⁽²⁾	881	39.32%	346.4	39.42%	347.3	327.9
Thornyhead CV ⁽³⁾	1,010	7.21%	72.8	7.26%	73.3	41.5
Thornyhead CP ⁽³⁾	1,010	14.50%	146.5	14.86%	150.1	83.6

Source: The numerator is based upon the NPFMC Rockfish Database 2004, Version 1 and includes retained harvest only. The denominator is based upon 1996-2002 NMFS blend data and includes total catch, including discards.

Table 6 - Rockfish Pilot Program: Secondary Species Allocation by Sector - Retained over Retained
retained harvest by species in targeted rockfish fishery divided by retained CGOA harvest

Secondary Species/Sector (1)	2005 TAC (mt)	Option 1 Allocation Proportion	Option 1 Allocation (mt)	Option 2 Allocation Proportion	Option 2 Allocation (mt)	Average Harvest 1996- 2002
Pacific cod CV	25,086	1.70%	426.2	2.09%	525.2	613.4
Pacific cod CP	25,086	0.20%	50.6	0.20%	50.9	72.9
Sablefish CV	7,250	6.30%	456.9	6.31%	457.5	350.8
Sablefish CP	7,250	4.31%	312.4	4.30%	311.9	239.9
Shortraker/Rougheye CV ⁽²⁾	881	6.11%	53.8	5.91%	52.1	33.1
Shortraker/Rougheye CP ⁽²⁾	881	60.47%	532.8	59.87%	527.4	327.9
Thornyhead CV	1,010	11.00%	111.1	10.85%	109.6	41.5
Thornyhead CP	1,010	22.14%	223.6	22.94%	231.7	83.6

Source: 1996-2002 NMFS WPR data for CP vessel harvests. 1996-2002 ADF&G Fish Tickets for CV vessel harvests.

Table 2C - Rockfish Pilot Program: Secondary Species Allocation by Sector - Total over Total
total harvest (retained plus discards) by species in targeted rockfish fishery divided by total CGOA harvest

Secondary Species/Sector (1)	2005 TAC (mt)	Option 1 Allocation Proportion	Option 1 Allocation (mt)	Option 2 Allocation Proportion	Option 2 Allocation (mt)	Average Harvest 1996- 2002
Pacific cod CV	25,086	2.13%	534.7	2.54%	636.1	613.4
Pacific cod CP	25,086	0.40%	99.8	0.38%	95.1	72.9
Sablefish CV	7,250	7.71%	558.9	7.70%	558.4	350.8
Sablefish CP	7,250	7.19%	521.6	7.15%	518.6	239.9
Shortraker/Rougheye CV (2)	881	4.73%	41.7	4.87%	42.9	33.1
Shortraker/Rougheye CP (2)	881	57.25%	504.4	56.47%	497.5	327.9
Thornyhead CV	1,010	11.49%	116.1	11.65%	117.7	41.5
Thornyhead CP	1,010	23.73%	239.7	24.04%	242.8	83.6

Source: 1996-2002 NMFS blend data.

The new Council option, selecting the shortraker/rougheye allocation based on the highest individual year would result in an allocation higher than the other options presented above.

Issue 3: Section 5.4 – Processor Eligibility

Section 5.4 for Alternative 2 describes qualifying criteria for an eligible processor to be: “a processor with a substantial investment of (a) \$1,000,000 or more, or (b) \$5,000,000 or more, and one that has purchased 250 mt. or aggregate Pacific Ocean Perch, northern rockfish and pelagic shelf rockfish in any of the qualifying years.

Analysis of the qualifying criterion of 250 mt. in any year is relatively straightforward. Due to confidentiality issues, however, no further information on that issue can be disclosed. In addition, investment in facilities is not one that can be analyzed due to the lack of availability of information. In public comments on this issue at the December 2004 and February 2005 NPFMC meeting, a representative of one processing company expressed concern with the higher proposed threshold level, however, there has been no way to apply this threshold to the analyses. **The Council should consider further defining this requirement, if the suboption is selected. Specifically, the Council should specify the types of spending that would qualify as “investment”. The Council could allow any spending to count toward the threshold or limit it to certain types of spending, such as investment in plant capital, fixtures, or some other specific expenditure. Absent more specificity concerning the types of spending that would count as “investment,” this provision cannot be administered.**

Preliminary Review Draft

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

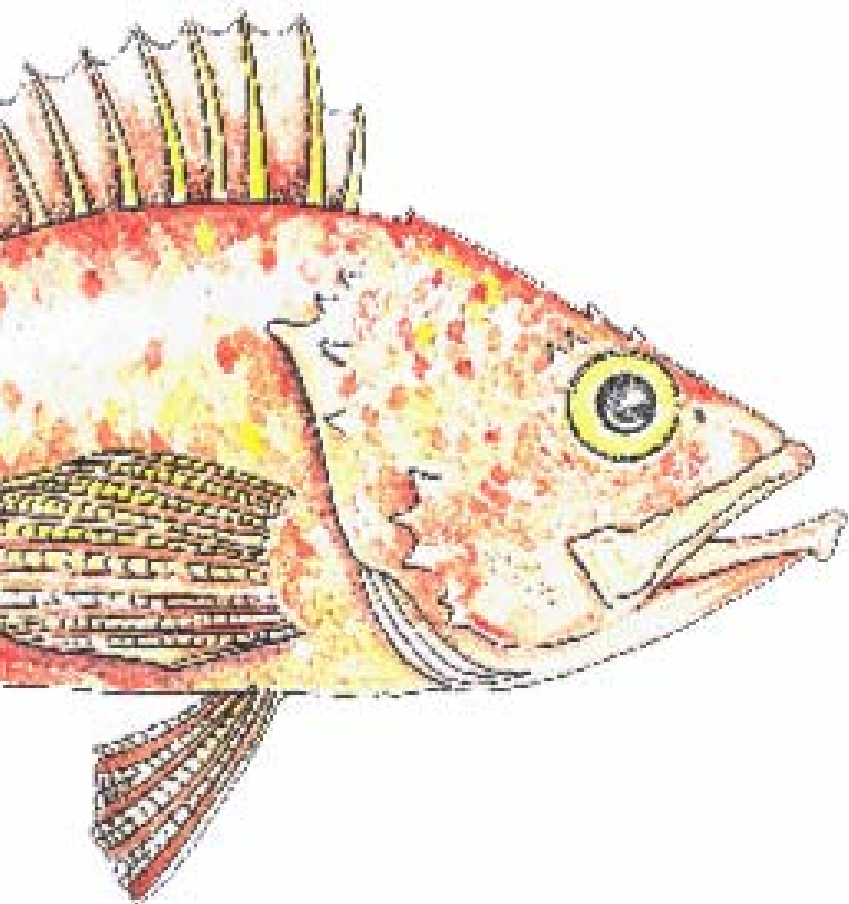
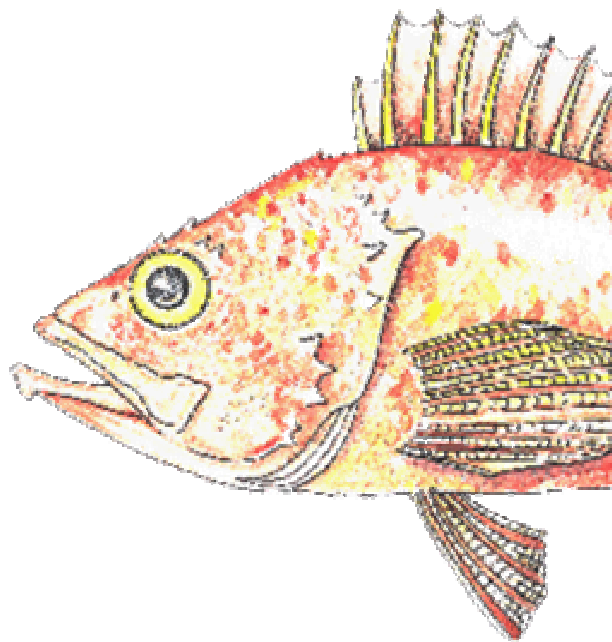
For proposed Amendment ____

CENTRAL

GULF OF ALASKA

ROCKFISH DEMONSTRATION

PROGRAM



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1. Introduction

Section 802 of the Consolidated Appropriations Act of 2004, the U.S. Congress included a directive to the Secretary of Commerce to establish, in consultation with the North Pacific Fishery Management Council (the Council), a pilot program for management of three rockfish fisheries in the Central Gulf of Alaska (the Central Gulf rockfish fisheries).¹ At the February 2004 Council meeting, National Marine Fisheries Service (NOAA Fisheries) presented a brief discussion paper requesting Council input in the development of the pilot program. Based on this request and public testimony, the Council requested industry stakeholders to prepare and submit proposed alternatives for establishing the program to the Council at its April 2004 meeting. Industry representatives presented a proposal at that meeting that defined an alternative for management of the fisheries under the pilot program. Using the industry proposal and public input and staff discussion papers, the Council developed alternatives for the pilot program management of the rockfish fisheries at its June 2004, October 2004, December 2004, and February 2005 meetings. Because of the different characteristics of the catcher vessel fleet and the catcher processor fleets, the Council has developed different, but closely related alternatives for these two sectors. In the case of the catcher vessel sector, the Council has developed for analysis two cooperative programs that differ in the relationships that would be established between participating catcher vessels and processors. In the case of the catcher processor sector, the Council has developed for analysis a cooperative program alternative and an alternative that simply makes a sector allocation.

Management actions for these rockfish fisheries must comply with applicable Federal laws and regulations. Although several laws and regulations guide this action, the principal laws and regulations that govern this action are the Consolidated Appropriations Act of 2004, 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 demonstration program management of the Central Gulf of Alaska Pacific Ocean perch, Northern rockfish, and pelagic shelf rockfish (which comprises dusky rockfish, yellowtail rockfish, and widow 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 the economic and socioeconomic effects of the alternatives, elements, and options; Section 3 contains the Environmental Assessment; and 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 FR 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

¹ A legislative floor statement providing some definition of the program envisioned by Congress is attached hereto as Appendix ___ [to be provided].

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 alternative 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:

- 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.

This Regulatory Impact Review assesses several different economic effects of the alternatives to assess the effects of the alternatives on the net benefits to the Nation. In general, the economic effects of the different alternatives cannot be quantified. Quantitative estimation of the effects requires accurate data concerning several aspects of the fishery, many of which are not available. In addition, several factors limit the predictability of the impacts of the alternatives on these fisheries. Some program aspects of the alternatives are unique. For example, the processor associations under the “catcher vessel cooperative with processor association” alternative, differs from any implemented in any fisheries to date (including the Bering Sea pollock fisheries, which it most resembles). Quantification of impacts would require detailed cost data from the harvesting and processing sectors and substantial data concerning downstream markets and thorough economic analysis of all of those data. No such information or analyses are currently available. Due to these shortcomings, much of the economic analysis is qualitative, supplemented with any quantitative information available.

2.1. Problem Statement

The Council has developed the following problem statement defining its purpose for development of the rockfish pilot program:

The present management structure of the CGOA rockfish fishery continues to exacerbate the race for fish with:

- Increased catching and processing capacity entering the fishery,
- Reduced economic viability of the historical harvesters (both catcher vessels and catcher processors) and processors,
- Decreased safety,
- Economic instability of the residential processor labor force,
- Reduced product value and utilization,
- Jeopardy to historical groundfish community stability,
- Limited ability to adapt to Magnuson-Stevens Act (MSA) requirements to minimize bycatch and protect habitat.

While the Council is formulating GOA comprehensive rationalization to address similar problems in other fisheries, a short-term solution is needed to stabilize the community of Kodiak. Kodiak has experienced multiple processing plant closures, its residential work force is at risk due to shorter and shorter processing

seasons and the community fish tax revenues continue to decrease as fish prices and port landings decrease. Congress recognized these problems and directed the Secretary in consultation with the Council, to implement a pilot rockfish program with the following legislation:

SEC. 802. GULF OF ALASKA ROCKFISH DEMONSTRATION PROGRAM. The Secretary of Commerce, in consultation with the North Pacific Fishery Management Council, shall establish a pilot program that recognizes the historic participation of fishing vessels (1996 to 2002, best 5 of 7 years) and historic participation of fish processors (1996 to 2000, best 4 of 5 years) for pacific ocean perch, northern rockfish, and pelagic shelf rockfish harvested in Central Gulf of Alaska. Such a pilot program shall (1) provide for a set-aside of up to 5 percent for the total allowable catch of such fisheries for catcher vessels not eligible to participate in the pilot program, which shall be delivered to shore-based fish processors not eligible to participate in the pilot program; (2) establish catch limits for non-rockfish species and non-target rockfish species currently harvested with pacific ocean perch, northern rockfish, and pelagic shelf rockfish, which shall be based on historical harvesting of such bycatch species. The pilot program will sunset when a Gulf of Alaska Groundfish comprehensive rationalization plan is authorized by the Council and implemented by the Secretary, or 2 years from date of implementation, whichever is earlier.

The fishing fleets have had little experience with cooperative fishery management and needs to begin the educational process. For the fishery to be rationalized all aspects of the economic portfolio of the fishery needs to be recognized. To stabilize the fishery economy all the historical players – harvesters (both catcher vessels and catcher processors) and processors need to be recognized in a meaningful way. The demonstration program is designed as a short-term program for immediate economic relief until comprehensive GOA rationalization can be implemented.

2.2. Background

The rockfish species that are the subject of this program are primarily harvested using trawl gear, although some directed fishing with fixed gear has occurred. In the Central Gulf of Alaska, the directed trawl fisheries for these rockfish typically begin about the first of July. Directed fishing for these rockfish with hook-and-line opens on January 1. Separate total allowable catches (TACs) are set for the three different fisheries. Participants usually begin by targeting Pacific Ocean perch until that directed fishery is completed, then move on to the directed Northern rockfish and pelagic shelf rockfish fisheries. The directed fisheries for all three species are usually completed during the month of July.

The current entry limitations to the harvest sector in Gulf of Alaska groundfish fisheries (which include the rockfish fisheries) have restricted the fisheries to historic participants.² The first measure limiting entry established a vessel moratorium in 1995 that generally limited entry to vessels that made a legal landing of a moratorium species between January 1, 1988 and February 9, 1992. The second, and current, limitation is the License Limitation Program (LLP), under which licenses were issued to vessel owners that used their vessels to make harvests that meet both a general landing requirement and an area landing requirement. To meet the general requirement, a vessel must have a landing of a groundfish species during the general qualifying period (GQP), which is from January 1, 1988 to June 27, 1992.³ To qualify for an area endorsement, a vessel must have a minimum number of landings from the applicable endorsement area during the endorsement qualification period, which is from January 1, 1992 to June 17, 1995. Separate endorsements apply to the Bering Sea, the Aleutian Islands, the Western Gulf of Alaska, the Central Gulf of Alaska (which also authorizes participation in West Yakutat), and Southeast Outside. Landing requirements for endorsement qualification vary with vessel length, area, and vessel designation (i.e., catcher vessel or catcher/processor).

² In addition to the measures discussed here, a complete discussion of the evolution of management of the fisheries should be contained in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (National Marine Fisheries Service, 2004).

³ An exception extends the GQP for vessels less than 60 feet that fish with pot or jig gear until December 31, 1994.

Although these limitations on entry have restricted the introduction of additional harvest capital in the fisheries, entry limitations alone are insufficient to improve efficiency substantially in the Central Gulf rockfish fisheries. For example, in the fisheries that are the subject of this program, all harvests take place in the course of a few weeks in the year. Although in some instances participants may choose to concentrate landings for efficiency reasons, the level of concentration in the current fisheries contributes to inefficiency in both harvesting and processing. Harvesters add costs and sacrifice quality of landings by racing to obtain a share of the TAC prior to competing harvesters. Processors work quickly to offload and process landings to obtain market share and avoid spoilage of landings. Slowing this race for fish will provide participants in both sectors with the opportunity to realize efficiencies. Allowing participants to schedule their activities to coordinate with participation in other fisheries should also improve efficiencies. Allowing participants to determine inputs to reduce costs of production and improve product recovery rates and quality, without risking loss of share of the fishery, should also improve efficiency. In addition, timing participation in response to market conditions could provide for some improvement in returns.

2.3. Description of the Alternatives

To address its problem statement the Council has adopted two pilot program alternatives for the catcher vessel sector and two pilot program alternatives for the catcher processor sector for analysis, in addition to the status quo. Options would create separate sectors for trawl catcher processors, trawl catcher vessels, and non-trawl catcher vessels. Under this construction, the different gear types in the catcher vessel sector would be governed by the same management program, but they would be managed as separate sectors.

For the catcher processor sector, one pilot program alternative (the catcher processor cooperative alternative) would allow harvesters to form cooperatives, which would receive annual harvest share allocations based on the qualified harvest histories of their members. Catcher processor license holders that do not join a cooperative would receive an annual allocation based on the history associated with the license that could be fished independently. The second catcher processor pilot program alternative (the catcher processor sector allocation alternative with cooperatives) would make an allocation to the sector based on the histories of catcher processors in the CGOA rockfish fisheries. Participants in the sector could either join a cooperative, which would fish a cooperative allocation, or fish in a limited access fishery with other non-members of cooperatives.

For the catcher vessel sector, one alternative (the catcher vessel cooperative with limited processor entry alternative) would allow harvesters to form cooperatives, which would receive allocations based on members' qualified harvest histories. These cooperatives would be required to deliver their landings to processors that met threshold landing requirements during the processing qualifying years. The second catcher vessel pilot program alternative (the catcher vessel cooperative with processor associations alternative) would allow each harvester to join a cooperative in association with the processor to which it delivered the most pounds of CGOA rockfish during the processor qualifying period. Each cooperative would receive an annual harvest share allocation based on the qualified harvest history of its members. Although no specific processor delivery requirement is created by this cooperative/processor relationship, since cooperative formation depends on the processor association, some delivery arrangement is likely to be incorporated into that relationship as defined by the parties. Under both of the catcher vessel alternatives, harvesters that choose not to join a cooperative would be permitted to fish in a competitive fishery that receives an allocation based on the harvest histories of non-members of cooperatives.

Under all pilot program alternatives, set asides of CGOA rockfish would be made for an entry level fishery and to support incidental harvests in other directed fisheries.

The pilot program alternatives are derived from a common set of elements with differences that reflect the different operations of the two fleets. The specific elements and options that define the alternatives follow the brief description of the alternatives (including the status quo) below.

2.3.1. The status quo alternative

Under the status quo, participation in the rockfish fisheries is limited to holders of valid LLP licenses endorsed for the Central Gulf of Alaska. Directed fishing by the trawl sector, which dominates these fisheries, begins around July 1, with the specific opening date being set to accommodate the trawl survey and monitoring over the 4th of July holiday weekend. Participants catch a variety of species when targeting CGOA rockfish and top off on other valuable species, such as sablefish and Pacific cod. These other species are currently managed under bycatch status with a maximum retainable allowance (MRA), which limits retention of the incidental catch species to a percent of the retained target harvest. Harvests are monitored inseason and each of the target rockfish fisheries is closed when managers estimate that the TAC is harvested. TACs are set to accommodate incidental catch of the rockfish species in other fisheries during the remainder of the year. After closure of the directed fishery, the three rockfish species are managed on a bycatch basis and are subject to MRAs in other target fisheries limiting the retention of rockfish relative to target species.

2.3.2. The pilot program alternatives

The different pilot program alternatives substantially overlap with one another. The summaries that follow reference each other to avoid repetition. For example, under all of the pilot program alternatives, allocations are made to two sectors, trawl catcher processors and trawl catcher vessels. These allocations are then distributed to individuals based on their historic harvests. Since these sector and individual allocations are the same under the different alternatives, the allocations are shown only once, and then are referenced to describe the distributions under the other alternatives.

Catcher processor sector allocation with cooperatives

Under the catcher processor sector allocation with cooperatives alternative, allocations would be made to the trawl catcher processor sector for target rockfish species, secondary species (Pacific cod, sablefish, shortraker, roughey, and thornyhead) based on the historic harvests of sector members. Participants in the sector could either join a cooperative, which would fish the allocation of its members in accordance with a cooperative agreement, or fish in a limited access, competitive fishery, which would receive an allocation based on the history of non-members of cooperatives.⁴ 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.

Two set asides of the target rockfish will be made prior to the allocations to the sectors under the pilot program. The first of these set asides would allocate 5 percent of the TAC for each target rockfish species which would be divided equally between two entry level fisheries (one for trawl fishermen and the other for non-trawl fishermen). The entry level fisheries would be open to harvesters and processors that are not eligible for the primary program. The entry level trawl fishery would be prosecuted by making direct, individual allocations of CGOA rockfish to applicants for the fishery. The non-trawl fishery would be conducted as a competitive fishery open to any applicants. 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.

⁴ Since the allocations of non-members of cooperatives would be made to the limited access fishery, no provision for opting out of the rockfish fishery is necessary under this alternative. Persons that do not wish to fish rockfish would be eligible for, but not required to, fish in the limited access fishery.

After removal of the two set asides, the remainder of the target rockfish would be allocated to the two sectors participating the pilot 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 best five of the seven years from 1996 to 2002 (the qualifying period). 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 calculate qualifying catch. Any holder of a permanent or interim LLP license at the time of implementation that had at least one targeted harvest of CGOA rockfish during the qualifying period would be eligible for the program.

The sector would also be allocated secondary species (shortraker, 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 all sectors harvested by the sector in the CGOA rockfish fishery. Under this approach, the sector's annual percentage of retained secondary species catch while targeting rockfish relative to total retained catch of that secondary species by all gear types and participants would be averaged over the qualifying years. These secondary species allocations would be allocated in proportion to the allocation of CGOA rockfish to cooperatives and the limited access fishery. Pacific cod would be managed using a revised maximum retainable allowance percentage of 4 percent of target rockfish. All other species would be managed using the current MRA levels.

Halibut mortality would also be allocated under the pilot program based on halibut mortality during the qualifying period. The total allocation to the pilot program would be based on total mortality of both sectors during the qualifying period (1996 to 2002, inclusive). To determine the annual allocation to the pilot program, the total mortality would be divided by the number of qualifying years (seven). The Council could choose one of two options for dividing this allocation of halibut mortality between the two sectors. Under the first, the allocation would be based on a sector's actual usage (or contribution to the halibut allocation to the program). Under the second option, the allocation would be split between the two sectors based on each sector's relative share of the target rockfish allocation under the program.

Cooperative agreements under this alternative would have a term of two years and would 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 would not be formed under the Fishermen's Collective Marketing Act (and therefore could not negotiate prices). 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. A cooperative could include fishing practice codes of conduct in its membership agreement. 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. In addition, no catcher processor could harvest in excess of 60 percent of the catcher processor pool.⁵ Persons or vessels with history in excess of these limits would be grandfathered at their historic levels.

⁵ 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.

The season for the rockfish cooperatives would be extended substantially beyond the current season. The specific season length will be set to meet the management needs of National Marine Fisheries Service (including monitoring requirements). The season will likely open in the spring (substantially earlier than the current July opening) and extend into the third quarter. As under current management, the limited access portion of the catcher processor CGOA rockfish fishery would open in the beginning of July and would close when its participants have fully harvested the allocation in that fishery. All species except for the target rockfish would be managed with MRAs. The allocated species (shortraker, rougheye, thornyhead, and sablefish) would be managed with a revised MRA, intended to maintain catch levels below the allocated amount. Pacific cod would be managed with a revised MRA of 4 percent. All other species would be managed with MRAs at their current levels.

An LLP license holder that is eligible for the program would be permitted to transfer the license. The transfer would also transfer 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.

Under all of the pilot program alternatives, sideboards will be established to limit encroachment of participants in the pilot program on other fisheries. Since the CGOA rockfish fishery is prosecuted in July, sideboards are generally intended to limit pilot 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.

The Council has requested a sideboard for Gulf fisheries that are historically constrained by halibut PSC, which would limit eligible participants to their historic halibut mortality in the month of July, in the aggregate. Currently, 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 has suggested that two separate halibut sideboards be developed (one for the deep-water complex and the other for the shallow-water complex). These July halibut sideboards would be administered by ending fishing in a complex by sector members eligible for the rockfish program when the sector halibut limitation is reached in that complex. In addition, each catcher processor participant would be required to abide by a stand down in all the Bering Sea and Aleutian Island non-pollock groundfish fisheries. The standdown 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 allocation, if the harvest of the allocation began on the traditional July opening. If multiple allocations are aggregated on a single vessel, the stand down would end when 90 percent of the total allocation fished by the vessel is harvested or after two weeks (whichever is earlier). The maximum standdown would allow participants to begin at a time other than early July, provided they are willing to abide by the two week standdown.

In lieu of the standdown 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, if halibut PSC constrains the fishery) of its members in the qualifying years.

Participants in the limited access fishery that account for less than 5 percent of the allocated catcher processor history of Pacific Ocean perch would be subject to no sideboard or standdown, beyond the aggregate sector sideboards. Limited access participants that account for 5 percent or more of the sector's Pacific Ocean perch would be required to standdown in Gulf of Alaska and Bering Sea and Aleutian Island groundfish fisheries until 90 percent of the limited access Pacific Ocean perch is harvested.

Members of the catcher processor sector eligible for the rockfish program that elect to drop out of the rockfish fisheries would not be required to comply with the standdown, but would be subject to the aggregate catch limits created by the sideboards. In addition, eligible sector members that opt out of the program would be prohibited from entering any other Gulf of Alaska groundfish fishery during the first two weeks of July that they have less than two years of participation in during the first week of July in the qualifying years.

A program review would also be conducted at the end of both the first and second year under all of the pilot program alternatives. This review would assess the effects of the program on harvesters, processors, communities, and conservation.

Catcher processor cooperatives and individual allocations

Under the catcher processor cooperative and individual allocation alternative, sector allocations of target rockfish, secondary species, and halibut PSC would be made to the catcher processor sector, as described under the catcher processor sector allocation with cooperatives alternative.

After determining the catcher processor sector target rockfish allocations, those allocations would be divided among eligible catcher processors based on their qualified CGOA rockfish harvest histories. A license holder's fishing history would be the history of the vessel(s) that led to the license and the history of any vessel that fished using the license. Similarly, secondary species (identified above) and halibut PSC would be allocated in proportion to the allocation of CGOA rockfish. Each eligible catcher processor license holder would have the choice of either joining a cooperative, to which an annual allocation would be made based on the history of its members, or receiving an annual allocation based on its own fishing history, which could be fished independently. Pacific cod would be managed by a revised MRA of 4 percent of target rockfish for participating catcher processors. All other species would be managed under their current MRAs. Cooperatives would be subject to the same rules as cooperatives under the catcher processor sector allocation with cooperatives alternative.

Sideboards would limit the participation of eligible catcher processors in other fisheries as described under the catcher processor sector allocation with cooperatives alternative above.⁶ Under this alternative, persons could choose to opt out of the program. Persons that opt out of the rockfish fishery, however, for the two weeks that follow the traditional opening of the rockfish fishery, would be prohibited from entering any other GOA target fisheries in which they do not have target participation in the first two weeks of July in the qualifying years. Program reviews would be conducted under this alternative as under the catcher processor sector allocation with cooperatives alternative.

Catcher vessel cooperative with limited processor entry

Under this alternative, the catcher vessel sector would generally receive a sector allocation of CGOA rockfish, secondary species, and halibut PSC as described under the catcher processor sector allocation alternative. The catcher vessel sector 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. In addition, individual allocations of CGOA rockfish, secondary species, and halibut PSC would be made to holders of permanent or interim catcher vessel LLP licenses with CGOA target rockfish history in the qualifying years based on CGOA rockfish history using the method and qualifying years described under the catcher processor alternatives.

⁶ Under this alternative, however, the stand down for limited access participants would not apply since no limited access fishery is provided for.

Eligible catcher vessel LLP license holders would have the choice of either joining a cooperative, to which an annual allocation would be made based on the rockfish history of its members, or fishing in a limited entry competitive fishery open to eligible license holders that choose not to join a cooperative. The limited access fishery would receive the allocation of non-members of cooperatives less 20 percent, to create an incentive for cooperative membership. The allocation withheld would be redistributed to catcher vessel cooperatives in proportion to the history of their members.⁷ The limited access fishery would be closed on the harvest of the allocation of CGOA rockfish, any secondary allocation, or the PSC halibut allocation that is necessary to support that rockfish harvest. Since the secondary species allocations are too small to support the current MRAs, MRAs for secondary species would be reduced in the limited access fishery to level that is likely to support incidental catch without prematurely closing the fishery for exceeding the allocation.

All catcher vessel harvests (including those in the limited access fishery) would be required to be delivered to an eligible processor. To be eligible, a processor must have processed in excess of 250 metric tons of CGOA rockfish per year in four of the years from 1996 to 2000, inclusive. An option could qualify any processor that processed in excess of 250 metric tons of aggregate CGOA rockfish in any one of the qualifying years provided that the processor has invested in excess of a threshold amount (either \$1,000,000 or \$5,000,000) in its facility. Processor licenses would not be transferable. In determining eligibility for a processing license, if a facility has closed and another processor has purchased the history of the closed facility, that history would be credited to the purchaser. In addition, if the owner and operator of a processing facility are not affiliated, the history would be credited to both for purposes of determining eligibility. Processing by a single entity would be limited to 30 percent of the catcher vessel sector allocation. Any processor that historically processed in excess of the cap would be grandfathered at its historic level of processing.

A cooperative would be required to have a minimum of 4 eligible LLPs. The cooperative would be required to file its agreement with the NOAA Fisheries Restricted Access Management Division to receive an annual allocation. As under the catcher processor cooperative alternative, cooperative agreements would have a term of two years and would 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 would not be FCMA cooperatives. Cooperative members would be jointly and severally liable for the harvest of the cooperative's 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. 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 reverting to the LLP license from which it came. No catcher vessel cooperative would be permitted to hold or use in excess of 30 percent of the

⁷ In its opinion dated February 3, 2005, NOAA General Counsel advised that the Council could reduce allocations to the limited entry fishery, however, the reduction must be made in accordance with the National Standards of the Magnuson Stevens Act. In particular, NOAA General Counsel cautioned that the allocation must be "fair and equitable...[and] reasonably calculated to promote conservation" (National Standard 4 of the MSA). If the Council elects to retain this share reduction, it should articulate its rationale for the reduction. In particular, the Council should explain how the reduction promotes conservation. A rationale could clearly be provided, if the reduction were left unharvested. Under the alternative as drafted, the reduction, however, is reallocated to cooperatives.

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.

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 historically prosecuted. 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 has requested a sideboard for Gulf fisheries that are historically constrained by halibut PSC, which would limit eligible participants to their historic halibut mortality in the month of July, in the aggregate. Because of the complication of attempting to manage halibut on a fishery-by-fishery basis, NOAA Fisheries has suggested that the halibut sideboards limit catch in the deep-water complex and shallow-water complex. When the July halibut sideboard limitation is reached in a complex, fishing by sideboarded vessels would be ended for July in the complex.** Qualified catcher vessels would also be limited by a second set of sideboards that would prohibit their 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, qualified catcher vessels would be limited in the month of July to their historic average total catch in the Bering Sea and Aleutian Islands Pacific cod fishery, in the aggregate. Catcher vessel participants in the AFA would be exempt from any sideboards under this program. Program reviews would be conducted as under the catcher processor sector allocation alternative.

Catcher vessel cooperative with processor associations

Under this alternative, the catcher vessel sector would receive a sector allocation as described under the catcher processor sector allocation alternative. In addition, annual allocations of CGOA rockfish, secondary species, and halibut PSC would be made to cooperatives based on the CGOA rockfish history of their members as described under the catcher processor cooperative alternative. Holders of a permanent or interim CGOA LLP license at the time of implementation with a targeted landing of CGOA rockfish in the directed fishery would be eligible for the program.

Eligible catcher vessel LLP license holders would have the choice of either joining a cooperative, to which an annual allocation would be made based on the history of its members, or fishing in a limited entry competitive fishery open to eligible license holders that choose not to join a cooperative. The allocation to the competitive fishery would be based on the histories of participants in that fishery with a 20 percent reduction to create an incentive for cooperative membership. Any allocation of an LLP holder withheld from the competitive fishery would be redistributed to catcher vessel cooperative which the LLP holder is eligible to join. All harvests from the competitive fishery must be landed with an eligible processor. This competitive fishery would be closed on the harvest of the allocation of CGOA rockfish or any of the allocated secondary species or PSC halibut that is necessary to support that rockfish harvest.

Each eligible catcher vessel license holder would be eligible to join a cooperative associated with the eligible processor to which it delivered the most pounds during the processor qualifying period (1996 to 2000, four years as selected by each eligible processor). To be eligible a processor must have processed in excess of 250 metric tons of CGOA rockfish per year in four of the years from 1996 to 2000, inclusive. **The Council motion is unclear whether this alternative includes the option to qualify any processor that processed in excess of 250 metric tons of aggregate CGOA rockfish in any one of the qualifying years provided that the processor has invested in excess of a threshold amount (either \$1,000,000 or \$5,000,000) in its facility. The analysis assumes that this option would be included in the alternative.** In determining eligibility for a processing license, if a facility has closed and another processor has purchased the history of the closed facility, that history would be credited to the purchaser. Under an option, if the owner and operator of a processing facility are not affiliated, the history would be credited

to both for purposes of determining eligibility, but would be credited only to the operator of the facility for purposes of determining harvester/processor associations.

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 licenses and associations would not be transferable. No processing entity would be permitted to process in excess of 30 percent of the catcher vessel sector allocation. Any processor that historically processed in excess of the chosen cap would be grandfathered at its historic level of processing.

A single cooperative may associate 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. The cooperative would be required to file its agreement and a contract with the associated processor with the NOAA Fisheries Restricted Access Management Division to receive an annual allocation. Cooperatives are intended only to conduct and coordinate fishing of their member's allocations and would not be FCMA cooperatives. As under the catcher processor cooperative alternative, cooperative agreements would have a term of two years and would include a fishing plan for the harvest of the cooperative's allocation. Cooperative members would be jointly and severally liable for the harvest of the cooperative's 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. 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. 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.

Cooperatives would be permitted to engage in the transfer of annual allocations subject to the consent of the associated processor. 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 reverting to the LLP license from which it came.

Sideboards are intended to limit eligible participants in the catcher vessel program to their historic activity in other fisheries. The sideboards under this alternative are the same as those described under the catcher vessel cooperative with limited processor entry alternative. A program review would be conducted under this alternative, as described under the catcher vessel cooperative with limited processor entry alternative.

Elements and options defining the pilot program alternatives

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

Alternatives, Elements and Options

The Council recommends the following elements and options for the CGOA Rockfish Pilot program be included for analysis:

Catcher Vessel Alternatives

- 1) Status Quo
- 2) Cooperative program with license limitation program for processors
- 3) Cooperative program with cooperative/processor associations

Catcher Processor Alternatives

- 1) Status Quo
- 2) Cooperative Program
- 3) Sector Allocation

Alternatives 2 and 3 are defined by the following elements and options. Differences in the elements and options between the two alternatives and across the two sectors are noted.

1 Set-asides

Prior to allocation of catch history to the sectors, NMFS shall set aside:

- 1.1 ICA: An Incidental Catch Allocation (ICA) of POP, Northern rockfish and pelagic shelf rockfish to meet the incidental catch needs of fisheries not included in the pilot program
- 1.2 Entry Level Fishery: A percentage of POP, Northern rockfish and pelagic shelf rockfish for catcher vessels not eligible to participate in the program, as mandated in the Congressional language. For the duration of this program, the annual set aside will be 5% of each of these target rockfish species.
 - o Allocations shall be apportioned between trawl and non-trawl gear:
50/50
The trawl sector's 50 percent allocation by weight (based on the aggregate TAC for Pacific Ocean perch, Northern and pelagic shelf rockfish) shall first be Pacific Ocean perch.
 - o Unharvested allocations to either sector shall be available to both sectors at the end of the third quarter.
 - o Prosecution of the entry level fishery will be supported by general allocations of PSC to the gear type not allocated under 3.3.1.3 and the general allocations of secondary species not allocated under 3.3.1.2

2 Entry-Level Fishery

2.1 Catcher Vessel Participation:

Vessels that can participate in the Entry Level fishery are those vessels that did not qualify for the CGOA rockfish pilot program.

2.2 Processor Participation:

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

2.3 Fishery participation:

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.

2.4 NMFS will determine:

- NMFS will provide for an entry level fishery.
Equal shares distributions to the vessel applicants in the trawl sector
Limited access competitive fishery in the non-trawl sector
- Entry permits are non-transferable and must be fished by the named vessel

3 Sector Allocations

3.1 Sector Definitions

Trawl catcher vessel

Trawl catcher processor

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

3.2 Rationalized Areas

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

3.3 Sector Allocations

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

- Sector allocation is based on individual qualified vessel histories with the drop-2 provision at the vessel level.
- The eligibility for entry into the program is one targeted landing of POP, Northern rockfish or PSR caught in CGOA during the qualifying period.
- The CP catch history will be based on WPR data.

3.3.1 Each sector is allocated catch history based on:

The sum of all catch history of vessels in that sector for which it earned a valid, permanent, fully transferable CGOA LLP endorsement, for the years 1996-2002 drop two.

Suboption: include history of vessels which hold a valid interim endorsement on implementation of the program

3.3.1.1 Target species:

- Qualified target species history is allocated based on retained catch (excluding meal)
- History will be allocated to each sector for POP, Northern rockfish and PSR caught in CGOA based on retained catch during the open season
- Different years may be used for determining the history of each of the three rockfish species.
- Full retention of the target rockfish species required

3.3.1.2 Secondary species:

- Secondary species history is allocated based on retained catch over retained catch while targeting the primary rockfish species listed above.
- History will be allocated to each sector for sablefish, shortraker/rougheye rockfish, thornyheads and Pacific cod.
Participants must retain all allocated secondary species and stop fishing when cap is reached.
- All non-allocated secondary 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.
- Except as otherwise provided below, secondary species allocations will be based on: Percentage of catch by sector of the secondary species within the rockfish target fisheries divided by the total number of years in the qualifying period. The calculated percentage is multiplied by the secondary species quota for that fishery year and allocated to each sector in the pilot program. (retained catch over retained catch)
Allocations of Pacific cod as a secondary species will be at the following rate of harvest history:
100 percent
For the offshore sector, Pacific cod history will be managed by MRA of 4 percent.

Option: The shortraker/rougheye allocation for the catcher vessel sector will be based on the total catch of the sector during the target rockfish fishery over total catch of all sectors which yields the highest annual percentage during the qualifying years.

3.3.1.3 Prohibited species (halibut mortality):

- Allocation to the pilot 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 years '96-'02 by the number of years (7). This allocation will be divided between sectors based on:

Option 1) The actual usage of each sector

Option 2) The relative amount of target rockfish species allocated to each sector.

4 Allocation from Sector to Vessel

4.1 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.

4.2 Basis for the distribution 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 distribution 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.)

4.3 Target species:

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

4.4 Secondary species:

Each LLP holder will receive an allocation of sector history proportional to their allocation of target rockfish history

4.5 PSC (halibut mortality)

- Each LLP holder will receive an allocation of halibut mortality equivalent to their proportion of the sector rockfish history

4.6 Allocations of secondary species:

May be fished independently of the primary species allocations.

5 Co-op provisions

5.1 Duration of cooperative agreements is 2 years.

5.2 For all sectors

- The co-op membership agreement and the Contract will be filed with the RAM Division. The Contract must contain a fishing plan for the harvest of all co-op fish.
- Co-op members shall internally allocate and manage the co-op's allocation per the Contract.
- Subject to any harvesting caps that may be adopted, allocated history may be transferred and consolidated within the co-op to the extent permitted under the Contract.
- The Contract must have a monitoring program. Co-op members are jointly and severally responsible for co-op vessels harvesting in the aggregate no more than their co-op's allocation of rockfish species, secondary species and PSC mortality, as may be adjusted by inter-co-op transfers.
- Co-ops may adopt and enforce fishing practice codes of conduct as part of their membership agreement.
- Co-op membership agreements shall allow for the entry of other eligible harvesters into the co-op under the same terms and conditions as agreed to by the original agreement.
- Co-ops will report annually to the Council as per AFA.
- The cooperatives formed under this program are harvest associations that are intended only to conduct and coordinate harvest activities of their members and are not FCMA cooperatives. Processor affiliated vessels will be permitted to join harvest cooperatives.

5.3 CP sector:

For Alternative 2:

History is allocated to the current owner of the LLP of the vessel that earned the history.

- Owners may fish their allocation independently if the LLP has a CGOA endorsement, or may enter into a cooperative arrangement with other owners.
- More than one co-op may form within the sector
- Any number of eligible LLPs may form a co-op
- Allocations may be transferred between co-ops of at least: two LLPs

For Alternative 3:

History is allocated to the current owner of the LLP of the vessel that earned the history.

- More than one co-op may form within the sector
- Allocations may be transferred between co-ops of at least:
two LLPs
- Harvesters may elect not to join a co-op, and continue to fish in an LLP/Open Access fishery. The LLP's historic share will be fished in a competitive fishery open to rockfish qualified vessels who are not members of a cooperative.

5.4 CV sector:

For Alternative 2:

- Voluntary co-ops may form between eligible harvesters.
- All cooperative harvests under this program must be delivered to eligible processors.
- Harvesters may elect not to join a co-op, and continue to fish in an LLP/Open Access fishery. Those LLPs that opt out of the cooperative portion of the pilot program will be penalized 0 to 20% of their historical share (annual allocation). The penalty share will be left with the CV cooperative portion of the rockfish fishery and will be prorated among CV cooperatives based on cooperative share holdings. The LLP's remaining share will be fished in a competitive fishery open to rockfish qualified vessels who are not members of a cooperative and must be delivered to one of the qualified processors.
- An eligible processor is a processing facility that has purchased 250 MT of aggregate Pacific Ocean Perch, Northern Rockfish, and Pelagic Shelf rockfish harvest per year, for 4 years, from 1996 to 2000. Eligible processors will be issued a license under this program. Licenses are not transferable.
Suboption: An eligible processor is a processing facility with a substantial investment of
Option A) \$1,000,000 or more
Option B) \$5,000,000 or more, and
that has purchased 250 MT of aggregate Pacific Ocean Perch, Northern Rockfish, and Pelagic Shelf rockfish in any of the qualifying years.
- If a processing facility has closed down and another processing facility has acquired that processing history through purchase, for the purpose of determining processor eligibility the history belongs to the facility that purchased that history. That history can only be credited to another facility in the community that it was generated in for purposes of establishing eligibility under this program.
- The harvesters that enter into a co-op membership agreement shall be the members of the co-op.
- A pre-season Contract between eligible, willing harvesters 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.
- Catcher vessel cooperatives are required to have at least 4 eligible LLPs
- Co-ops may engage in inter-cooperative transfers of annual allocations to other cooperatives.
- No processor associations required by co-ops.

For Alternative 3:

- Voluntary co-ops may form between eligible harvesters in association with processors.
- Catcher vessel co-ops must be associated with an eligible processor.
- An eligible processor is a processing facility that has purchased 250 MT of aggregate Pacific Ocean Perch, Northern Rockfish, and Pelagic Shelf rockfish harvest per year, for 4 years, from 1996 to 2000.
- A harvester is eligible to join a cooperative in association with the processing facility to which the harvester delivered the most pounds of the three rockfish species combined during the year's 1996 – 2000 drop 1 year (processor chooses the year to drop, same year for all LLPs). If an LLP holder has no deliveries to a qualified processor, the LLP holder may join a coop with any one of the

qualified processors, but their membership would not be considered in determining whether the threshold is met for co-op formation.

- Harvesters may elect not to join a co-op, and continue to fish in an LLP/Open Access fishery. Those LLPs that opt out of the cooperative portion of the pilot program will be penalized 0 to 20% of their historical share (annual allocation). The penalty share will be left with the LLP's associated cooperative. The LLP's remaining share will be fished in a competitive fishery open to rockfish qualified vessels who are not members of a cooperative and must be delivered to one of the qualified processors.
- 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.
- The harvesters that enter into a co-op membership agreement shall be the members of the co-op. 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.
- Catcher vessel cooperatives are required to have at least:
75 percent of the eligible historical shares for each co-op associated with its processor.
- Co-ops may engage in inter-cooperative transfers of annual allocations to other cooperatives with agreement of the associated qualified processor.

5.5 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.

6 Co-op harvest use caps

6.1 CVs:

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 co-op shall be capped at:
30% of aggregate POP, Northern Rockfish and PSR for the CV sector

6.2 CPs:

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

7 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
Eligible Processors will be grandfathered.

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

8 Program Review

Program review the first and second year after implementation to objectively measure the success of the program, including benefits and impacts to harvesters, processors and communities. Conservation benefits of the program would also be assessed.

9 Sideboards

9.1 General Provisions

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

- a. 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 total catch of those vessels 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.
- b. 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.
- c. 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

9.2 CP Specific Sideboard Provisions

CP vessels may decide to opt out of the CGOA pilot 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 9.1.

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

CPs that opt out of the rockfish pilot 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).

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.

As part of its annual review, the Council should consider the effects of “opting-out” of the CP rockfish program. Specifically, if the Council finds that the opt-out provision is used to consolidate rockfish catch while avoiding rockfish program sideboards, then the Council should take immediate action to provide a disincentive for future abuses by allocating “opt-out” fish to the fishery not the sector.

For the CP sector, the pilot 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 BSAI or 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 BSAI or GOA non-pollock groundfish fishery.

A vessel which has met either standdown requirement can then move into the BSAI or GOA open access fisheries subject to the sector level limitations in the GOA in 9.1.

To the extent permitted by the motion, history may be leased between vessels. Each person that transfers its history to another CP or CV must still refrain from operating in any other BSAI or GOA non-pollock 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 CGOA rockfish limited access fishery
- 2) two weeks from the opening of the CGOA rockfish limited access fishery prior to participating in any other BSAI or GOA non-pollock groundfish fishery.

Members of a cooperative will be subject to all limitations and restrictions described in 9.1 and 9.2 except that cooperative members shall not be subject to any standdown in the GOA groundfish fisheries. The standdown provision in the BSAI groundfish fisheries will apply to cooperative members.

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

- a. 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
- b. 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.

For Alternative 3:

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 percent 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, GOA and BSAI standdowns are in place until 90 percent of the limited access Pacific Ocean perch quota is achieved.

9.3 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.
- Qualifying vessels in the trawl CV sector would be limited, in aggregate, in the month of July, to the historic average total catch of those vessels in the BSAI Pacific cod fishery in July during the qualification years 1996 to 2002.
- AFA 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.

In the event this program has a duration of more than 2 years, the Council will reconsider the issue of use/ownership caps for companies and vessels.

2.4. Existing Conditions in the Fishery

This section describes the conditions in the CGOA rockfish fishery under the current management. Because the status quo alternative is continuation of the current management and continuation of that management is unlikely to result in substantial change in the fisheries, this section also provides much of the status quo baseline that is used to assess the effects of the pilot program alternatives under consideration. The section begins with a brief description of the management of the fisheries, and 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.

2.4.1. Management of the fisheries

Under the current management the Gulf of Alaska rockfish fisheries open on January 1st for non-trawl gear participants. The opening for trawl gear is near July 1st, but varies year-to-year. The trawl opening is generally timed to coincide with the availability of the quarterly halibut PSC allocation. The fishery is also timed to accommodate the sablefish longline survey that occurs later in the summer. The rockfish fisheries, which also take some sablefish, must be completed early enough to allow the redistribution of sablefish stocks to avoid possible survey bias. The opening is also scheduled to accommodate in-season management so that managers have adequate catch and effort information to make Federal Register closure announcements, if needed, avoiding the 4th of July holiday weekend. The opening typically coincides 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 are prosecuted from a single TAC, with the harvest from the trawl fishery limited to the remaining available TAC after the non-trawl fleet has prosecuted the fishery from its January 1st opening. Since the non-trawl fleet has shown little interest in the fisheries historically, most of the TAC has been harvested by the trawl fleet. Table 1 summarizes trawl openings and closings for all gear types in the CGOA directed rockfish fishery by species from 1996 to 2003.

Table 1. Season openings (trawl only) and closings (all gear) of the Central Gulf of Alaska directed rockfish fisheries by species 1996 to 2003.

Year	Opening for species	Opening date	Closures			Reason
			Pacific Ocean Perch	Northern Rockfish	Pelagic Shelf 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

TAC - Total Allowable Catch

PSC - Prohibited Species Catch

Nor - Northern rockfish

PSR - Pelagic Shelf rockfish

Source: NOAA fisheries status reports and groundfish closure summaries

The closings show the general progression of participation in the rockfish fisheries. Most participants target 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 usually lasts between one and two weeks. Once the Pacific Ocean perch fishery is closed, vessels will usually move on to the northern rockfish or pelagic shelf rockfish directed fisheries, although some vessels move on to other fisheries in and outside of the CGOA. The directed fisheries for northern rockfish and pelagic shelf rockfish typically last less than one month, closing before the end of July. Managers have exercised some caution in managing the fishery, occasionally closing the fisheries to ensure that the TAC is not exceeded. When sufficient TAC has remained available, managers have reopened the fisheries later to allow participants to complete the harvest.

Typically, harvests of the rockfish TACs have resulted in closure of the fisheries, although at times halibut PSC in the deep-water complex has closed the fisheries. In 2000, halibut PSC closed the pelagic shelf rockfish fishery. In 2001, halibut PSC closed both the northern rockfish and pelagic shelf rockfish fisheries in July. The fisheries were reopened on October 1st, when the fourth quarter halibut allocation came available. The fisheries closed again near the end of October after harvest of the deep-water halibut PSC allocation.

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 11th, prior to the trawl opening. In 1998, the State took over management of the nearshore pelagic shelf rockfish fisheries. Those fisheries are currently prosecuted exclusively in State waters.

2.4.2. Stocks, biology, and environmental conditions

[Summarize from EA]

2.4.3. The harvest sector

The CGOA rockfish fisheries in federal waters are currently prosecuted almost exclusively with trawl gear. Generally, participation in the federal CGOA rockfish fisheries requires an LLP license with the requisite gear, area, and operation (catcher vessel or catcher processor) endorsements. In addition, the LLP limits the length of a vessel that may use a license based on the length of the qualifying vessel.

In recent years, an increasing number of fixed gear participants (both jig and longline) have expressed an interest in participating in the rockfish fisheries.⁸ Participation with jig gear by vessels of 60 feet or less is permitted without an LLP. Table 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 a substantial number of vessels are eligible to participate in the CGOA rockfish fisheries. Currently, RAM Division has issued 25 trawl-endorsed, permanent catcher processor licenses and 106 trawl-endorsed, permanent catcher vessel licenses endorsed for operation in the CGOA. RAM division has also issued in excess of 900 non-trawl licenses endorsed for the CGOA.

⁸ For purposes of this discussion, the rockfish fisheries refer exclusively to the Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish fisheries in federal waters as currently defined. Black and blue 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.

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

Gear	Maximum length overall	LLP license status	vessel type		total
			catcher processor	catcher vessel	
trawl	under 60 feet	permanent	0	64	64
		interim	0	4	4
	60 feet or greater and less than 125	permanent	8	91	99
		interim	2	3	5
	125 feet or greater	permanent	17	16	33
		interim	2	1	3
subtotal			29	179	208
non-trawl	under 60 feet	permanent	5	698	703
		interim	1	17	18
	60 feet or greater and less than 125	permanent	24	173	197
		interim	2	11	13
	125 feet or greater	permanent	19	3	22
		interim	5	2	7
subtotal			56	904	960
all gear (unique licenses)	under 60 feet	permanent	5	704	709
		interim	1	18	19
	60 feet or greater and less than 125	permanent	29	211	240
		interim	4	13	17
	125 feet or greater	permanent	31	16	47
		interim	6	2	8
total			76	964	1040

Source: RAM Division, Groundfish LLP License List, August 3, 2004.

Although a substantial number of vessels are eligible to participate in the CGOA rockfish fisheries, most vessels eligible for the fisheries do not participate.

Table 3 shows vessel participation and harvests in metric tons by sector during the open season from 1996 to 2002 by vessels with at least one targeted landing of rockfish during that time period.⁹ The table shows the three different sectors identified by the Council, non-trawl catcher vessels, trawl catcher vessels, and trawl catcher processors. The table divides the harvests of each sector by LLP license status, showing the harvests of holders of permanent LLP licenses, interim LLP licenses,¹⁰ and persons that do not hold LLP licenses.¹¹ Table 4, the companion table, shows the portion of the annual harvest and total harvest caught by the different sectors. In addition, tables showing participation patterns for vessels for both sectors appears in [Appendix 1](#).

⁹ The open season for trawl gear begins in early July and ends when either the TAC is fully harvested or when the deep water halibut allocation is taken. The non-trawl season opens on January 1st and closes 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 Weekly Processing Reports.

¹⁰ Recall that interim status is applied to any license under dispute. The dispute could, but need not, relate to the Central Gulf of Alaska endorsement.

¹¹ Since NOAA Fisheries implemented the LLP in 1998, it is clear that no participants held LLP licenses before that time. Participants with “no LLPs” in seasons prior to 1998 are those participants that do not appear to have qualified for an LLP license.

Table 3. Participation in the Central Gulf of Alaska rockfish fisheries by gear, vessel type, and LLP status, 1996 to 2002.

Year	Sector	LLP status	Pacific Ocean perch		Northern rockfish		Pelagic shelf rockfish	
			Metric tons	Number of vessels	Metric tons	Number of vessels	Metric tons	Number of vessels
1996	Non-trawl catcher vessel	permanent						
		interim						
		none					*	2
	Trawl catcher vessel	permanent	2,216.7	28	854.7	23	334.6	26
		interim						
none								
Trawl catcher processor	permanent	1,301.4	7	1,981.9**	7	1,183.9	7	
	interim	56.2**	2	*	1	*	1	
	none	*	1	*	1	*	1	
Total			3,574.2	38	2,836.6	32	1,571.7	37
1997	Non-trawl catcher vessel	permanent			*	1	*	1
		interim						
		none					*	2
	Trawl catcher vessel	permanent	2,259.1	26	758.3	17	198.6	21
		interim						
none								
Trawl catcher processor	permanent	2,994.2	10	1,115.7	10	1,387.4	10	
	interim							
	none	576.3	3	*	3	*	3	
Total			5,829.6	39	2,264.0	31	1,815.6	37
1998	Non-trawl catcher vessel	permanent						
		interim						
		none					*	2
	Trawl catcher vessel	permanent	2,356.9	30	1,754.4	30	615.8	29
		interim						
none								
Trawl catcher processor	permanent	3,999.3**	7	896.0**	6	1,264.5	7	
	interim							
	none	*	2	*	2	*	2	
Total			6,356.3	39	2,650.4	38	2,355.7	40
1999	Non-trawl catcher vessel	permanent						
		interim						
		none					*	2
	Trawl catcher vessel	permanent	2,430.2	31	1,882.3	32	1,293.2	32
		interim						
none								
Trawl catcher processor	permanent	3,114.4	7	1,249.7	6	1,784.1	7	
	interim							
	none	1,017.6	3	528.3	3	*	3	
Total			6,562.2	41	3,660.4	41	3,364.0	44

Source: NPFMC Rockfish Database 2004, Version 1

* withheld for confidentiality

** includes any amounts from confidential cells immediately below.

*** includes amounts from confidential cells immediately above and below.

Table 3. Participation in the Central Gulf of Alaska rockfish fisheries by gear, vessel type, and LLP status, 1996 to 2002 (continued).

Year	Sector	LLP status	Pacific Ocean perch		Northern rockfish		Pelagic shelf rockfish	
			Metric tons	Number of vessels	Metric tons	Number of vessels	Metric tons	Number of vessels
2000	Non-trawl catcher vessel	permanent						
		interim						
		none					*	2
	Trawl catcher vessel	permanent	4,011.7**	30	1,681.2**	30	2,241.0***	30
		interim	*	1	*	1	*	1
none								
Trawl catcher processor	permanent	3,106.4	5	450.5	4	511.0	5	
	interim							
	none							
Total			7,118.1	36	2,131.7	35	2,752.0	38
2001	Non-trawl catcher vessel	permanent						
		interim						
		none					4.0	6
	Trawl catcher vessel	permanent	3,652.2**	31	1,239.7**	28	1,232.6**	31
		interim	*	1	*	1	*	1
none		*	1	*	1	*	1	
Trawl catcher processor	permanent	4,419.3	7	819.5	7	902.1	7	
	interim							
	none							
Total			8,071.6	40	2,059.2	37	2,138.6	46
2002	Non-trawl catcher vessel	permanent						
		interim						
		none					2.1	8
	Trawl catcher vessel	permanent	4,423.1**	32	2,099.4**	29	1,265.6**	32
		interim	*	1	*	1	*	1
none								
Trawl catcher processor	permanent	2,912.5	6	584.4	6	1,152.2	6	
	interim							
	none							
Total			7,335.6	39	2,683.9	36	2,419.9	47
All years (totals)	Non-trawl catcher vessel	permanent			*	1	16.8**	1
		interim						
		none					*	21
	Trawl catcher vessel	permanent	21,350.0**	47	10,270.1**	46	7,181.3**	46
		interim	*	2	*	2	*	2
		none	*	1	*	1	*	1
	Trawl catcher processor	permanent	20,825.3**	13	6,560.1**	12	8,192.0**	12
interim		*	2	*	1	*	1	
none		2,672.3	5	1,403.1	5	1,027.5	5	
Total			44,847.6	70	18,286.2	68	16,417.6	89

Source: NPFMC Rockfish Database 2004, Version 1

* withheld for confidentiality

** includes any amounts from confidential cells immediately below.

*** includes amounts from confidential cells immediately above and below.

Table 4. Percent of catch in Central Gulf of Alaska rockfish fishery by gear, vessel type, and LLP status, 1996 to 2002.

Year	Sector	LLP status	Pacific Ocean perch		Northern rockfish		Pelagic shelf rockfish	
			Percent of total	Number of vessels	Percent of total	Number of vessels	Percent of total	Number of vessels
1996	Non-trawl catcher vessel	permanent					*	2
		interim						
		none						
	Trawl catcher vessel	permanent	62.0	28	30.1	23	21.3	26
		interim						
		none						
Trawl catcher processor	permanent	36.4	7	70.9**	7	75.3	7	
	interim	1.6**	2	*	1	*	1	
	none	*	1	*	1	*	1	
1997	Non-trawl catcher vessel	permanent			*	1	*	1
		interim						
		none					*	2
	Trawl catcher vessel	permanent	38.8	26	33.5	17	10.9	21
		interim						
		none						
Trawl catcher processor	permanent	51.4	10	49.3	10	76.4	10	
	interim							
	none	9.9	3	*	3	*	3	
1998	Non-trawl catcher vessel	permanent						
		interim						
		none					*	2
	Trawl catcher vessel	permanent	37.1	30	66.2	30	26.1	29
		interim						
		none						
Trawl catcher processor	permanent	62.9**	7	33.8**	6	53.7	7	
	interim							
	none	*	2	*	2	*	2	
1999	Non-trawl catcher vessel	permanent						
		interim						
		none					*	2
	Trawl catcher vessel	permanent	37.0	31	51.4	32	38.4	32
		interim						
		none						
Trawl catcher processor	permanent	47.5	7	34.1	6	53.0	7	
	interim							
	none	15.5	3	14.4	3	*	3	

Source: NPFMC Rockfish Database 2004, Version 1

* withheld for confidentiality

** includes any amounts from confidential cells immediately below.

*** includes amounts from confidential cells immediately above and below.

Table 4. Percent of catch in Central Gulf of Alaska rockfish fishery by gear, vessel type, and LLP status, 1996 to 2002 (continued).

Year	Sector	LLP status	Pacific Ocean perch		Northern rockfish		Pelagic shelf rockfish	
			Percent of total	Number of vessels	Percent of total	Number of vessels	Percent of total	Number of vessels
2000	Non-trawl catcher vessel	permanent						
		interim						
		none					*	2
2000	Trawl catcher vessel	permanent	56.4**	30	78.9**	30	81.4***	30
		interim	*	1	*	1	*	1
		none						
2000	Trawl catcher processor	permanent	43.6	5	21.1	4	18.6	5
		interim						
		none						
2001	Non-trawl catcher vessel	permanent						
		interim						
		none					0.2	6
2001	Trawl catcher vessel	permanent	45.2**	31	60.2**	28	57.8**	31
		interim	*	1	*	1	*	1
		none	*	1	*	1	*	1
2001	Trawl catcher processor	permanent	54.8	7	39.8	7	42.2	7
		interim						
		none						
2002	Non-trawl catcher vessel	permanent						
		interim						
		none					0.0	8
2002	Trawl catcher vessel	permanent	60.3**	32	78.2**	29	52.4**	32
		interim	*	1	*	1	*	1
		none						
2002	Trawl catcher processor	permanent	39.7	6	21.8	6	47.6	6
		interim						
		none						
All years (totals)	Non-trawl catcher vessel	permanent			*	1	0.01**	1
		interim					*	21
		none						
	Trawl catcher vessel	permanent	47.6**	47	56.5**	46	43.7**	46
		interim	*	2	*	2	*	2
		none	*	1	*	1	*	1
Trawl catcher processor	permanent	46.4**	13	35.9**	12	49.9**	12	
	interim	*	2	*	1	*	1	
	none	6.0	5	7.7	5	6.3	5	

Source: NPFMC Rockfish Database 2004, Version 1

* withheld for confidentiality

** includes any amounts from confidential cells immediately below.

*** includes amounts from confidential cells immediately above and below.

Total harvests of the three rockfish have varied somewhat over the years. Pacific Ocean perch harvests have generally increased from a low of almost 3,600 metric tons in 1996 to a high of over 8,000 metric tons in 2001. Northern rockfish harvests follow no apparent pattern and have ranged from slightly more than 2,000 metric tons in 2001 to almost 3,700 metric tons in 1999, the only year that harvests exceeded 3,000 metric tons. Harvests of pelagic shelf rockfish rose from almost 1,600 metric tons in 1996 to over 3,300 metric tons in 1999. In the three years since 1999, harvests have range from approximately 2,100 metric tons to approximately 2,750 metric tons. The total harvest of Pacific Ocean perch, the most valuable of the rockfish species, was more than double that of the other two species during the years shown.

The tables show relatively consistent participation across sectors. In the non-trawl catcher vessel sector, two or fewer vessels showed landings of each rockfish species prior to 2001. No non-trawl catcher vessels had any landings of Pacific Ocean perch between 1996 and 2002. In 2001 and 2002, 6 vessels and 8 vessels had landings of the pelagic shelf rockfish accounting for less than 1 percent of the landings in that fishery. Total landings by the non-trawl sector from 1996 to 2002 were less than 1 percent of the total landings for all three species. Because the non-trawl sector has very limited participation in the CGOA

rockfish fisheries, much of the discussion in this section pertains only to trawl catcher vessels and trawl catcher processors.

Trawl catcher vessel participation in the rockfish fisheries ranged from 23 vessels to 32 vessels. In 1996 and 1997, fewer trawl catcher vessels participated in the fisheries than in later years. The portion of the three rockfish harvested by trawl catcher vessels generally rose in later years, with the increase in participation. In 1996, however, trawl catcher vessels harvested approximately 62 percent of Pacific Ocean perch, the highest percentage harvested by the sector in any year. Overall, the harvests of the three rockfish by trawl catcher vessels ranged 44 percent of the pelagic shelf rockfish to 56 percent of the northern rockfish. Although about 30 trawl catcher vessels participate in the different CGOA rockfish fisheries in each year, the specific vessels that participate vary year to year. From 1996 to 2002, approximately 50 different trawl catcher vessels have participated in the each of the fisheries.

Fewer trawl catcher processors participated in the rockfish fisheries than trawl catcher vessels in the time period considered. A high of 13 trawl catcher processors participated in 1997 and a low of 5 in 2000. Since non-trawl vessels have shown minimal participation, the trawl catcher processors generally compete only with trawl catcher vessels in the rockfish fisheries. Harvests of all three species have fluctuated over the years following no discernable pattern. Harvests of Pacific Ocean perch have ranged from approximately 1,300 metric tons in 1996 to approximately 4,400 metric tons in 2001. Trawl catcher processors have harvested between 38 percent (in 1996) and 63 percent (in 1998 and 1999) of the Pacific Ocean perch fishery. Participation by vessels without LLP licenses has been greater in the trawl catcher processor sector than in the trawl catcher vessels sector, with unlicensed vessels harvesting between 6 and 8 percent of the different rockfish. As with trawl catcher vessels, a variety of trawl catcher processors participate in the CGOA rockfish fisheries. So, although the annual participation by trawl catcher processors in the different fisheries has ranged from 4 vessels to 13 vessels, the total number of vessels that have participated in a fishery is 20 in the Pacific Ocean perch fishery.

Table 5 shows the retained catch of different species of fish by vessels targeting CGOA rockfish from 1996 to 2002.¹² The table also 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). 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 current allowable retention amounts. 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.¹³

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 numbers of vessels and participants over the same time period may differ.

¹³ Since the percentage used to determine the maximum retainable amount is applied to all species that are open for direct fishing, some of the “other species” retention in the table could increase the amount of the different species that could be retained.

Table 5. Retained catch and current retainable percentages for vessels targeting Central Gulf of Alaska rockfish, 1996 to 2002.

Sector	LLP license status	Target rockfish			Pacific cod			Sablefish		
		Number of vessels	Metric tons	Percent of total	Number of vessels	Metric tons	Percent of target rockfish	Number of vessels	Metric tons	Percent of target rockfish
Retainable percentage***				-			20			7
Trawl catcher vessel	permanent	49	38,148.3	81.7	47	4,293.9	11.3	49	2,455.6	6.4
	interim	2	*	*	2	*	*	2	*	*
	none	1	*	*	1	*	*	1	*	*
Trawl catcher processor	permanent	17	35,501.0	84.8	15	510.2	1.4	17	1,679.2	4.7
	interim	2	*	*	0	0.0	*	2	*	*
	none	5	5,102.9	87.0	5	*	*	5	237.2	4.6
Total		76	79,481.7	83.3	70	5,012.9	6.3	76	4,427.6	5.6

Sector	LLP license status	Shortraker/rougheye			Thornyheads			Other			All Species
		Number of vessels	Metric tons	Percent of target rockfish	Number of vessels	Metric tons	Percent of target rockfish	Number of vessels	Metric tons	Percent of target rockfish	Metric tons
Retainable percentage***				15**			15**			-	
Trawl catcher vessel	permanent	46	231.9	0.6	49	290.6	0.8	48	1,244.5	3.3	46,664.8
	interim	2	*	*	2	*	*	2	*	*	*
	none	1	*	*	1	*	*	1	*	*	*
Trawl catcher processor	permanent	16	2,295.4	6.5	17	584.9	1.6	17	1,288.5	3.6	41,859.2
	interim	1	*	*	2	*	*	2	*	*	*
	none	5	278.0	5.4	5	53.0	1.0	5	81.5	1.6	5,868.6
Total		71	2,807.4	3.5	76	943.2	1.2	75	2,692.7	3.4	95,365.4

* Withheld for confidentiality

** Retainable percentage is for combined retention of Shortraker/rougheye and thornyheads.

*** Retainable percentages refer to the current retainable percentage and are provided for comparison of historic catch to current allowable retention.

Source: NPFMC Rockfish Database 2004, Version 1

As the table shows, CGOA rockfish is the large majority of retained catch for vessels targeting rockfish. Trawl catcher vessels have significant retention of both Pacific cod and sablefish, with sablefish retained harvests of approximately 6.4 percent of target rockfish (within a percent of the retainable percentage for that species). Pacific cod retention by trawl catcher vessels is slightly more than one-half the current retainable percentage. Trawl catcher processors have had slightly less harvest of sablefish relative to their harvest of target rockfish (slightly more than 2 percent less than the current retainable percentage). Harvests of all other species (including Pacific cod) are substantially less than the retainable percentage. These figures suggest that in most instances the retainable percentage has limited only harvests of sablefish by vessels targeting rockfish. Trawl catcher processors have also harvested substantial amounts of shortraker/rougheye incidentally to their target rockfish harvests. During they years presented, catcher processor harvest of shortraker/rougheye was approximately 6.5 percent of their target rockfish harvests. Further information concerning catch of these species is provided in [Appendix 2](#), which shows the retained and total catch by vessel type and total catch from the Central Gulf of Alaska for these species during the qualifying years.

In addition to groundfish species, participants in the rockfish fishery also catch halibut. Currently, halibut is a prohibited species and halibut caught while trawling for rockfish are immediately returned to the sea.

Table 6 shows the estimated annual catch and mortality of halibut in the Central Gulf of Alaska rockfish fisheries by vessel type. The catcher processor sector halibut mortality is based upon estimates of halibut bycatch from observer data. NOAA Fisheries estimates the total halibut caught by the catcher processor trawl fleet, then calculates halibut mortality, using a halibut mortality factor. The average estimated annual halibut mortality for the catcher processor sector is 111.29 mt. over the period from 1996-2002.

The total average annual halibut mortality for the catcher vessel sector is 113.06 metric tons. For the catcher vessel sector, processor weekly production reports are utilized to calculate the retained groundfish harvests by target fishery. The amount of halibut discarded by the catcher vessel fleet is estimated by NOAA Fisheries using projections from observer data.

Table 6. Estimated halibut catch and mortality in the Central Gulf of Alaska rockfish fisheries (1996-2002).

year	vessel type	estimated halibut harvest (mt.)	estimated halibut mortality (mt.)	targeted rockfish harvest (mt.)
1996	CP	88.75	50.61	7,111.95
1997	CP	221.24	143.81	8,718.47
1998	CP	215.22	146.35	9,049.53
1999	CP	263.54	168.64	9,322.94
2000	CP	72.67	47.96	6,202.18
2001	CP	160.37	110.64	7,881.36
2002	CP	160.86	110.99	6,114.43
totals (mt.)	CP	1,182.66	779.00	54,400.86
average annual halibut mortality (mt.)			111.29	

year	vessel type	estimated halibut harvest mt.	estimated halibut mortality (mt.)	targeted rockfish harvest mt.
1996	CV	163.11	92.98	7,340.23
1997	CV	76.21	49.54	4,669.52
1998	CV	127.72	86.84	5,680.23
1999	CV	194.26	124.33	8,797.19
2000	CV	206.62	136.36	10,574.27
2001	CV	298.91	206.27	8,786.00
2002	CV	137.82	95.10	10,143.63
totals (mt.)	CV	1,204.65	791.42	55,991.07
average annual halibut mortality (mt.)			113.06	

Source: Summarized from NMFS GOAHALX 1996-02.
Program data, 1996-2002.

Participation of Rockfish Vessels in Other Fisheries

Since the rockfish fisheries are prosecuted only in July, vessels that participate in the rockfish fisheries also participate in several other fisheries in the Gulf of Alaska and the Bering Sea and Aleutian Islands.¹⁴

[To be provided - Table __ showing landings by license holders eligible for the catcher vessel sector during the qualifying years by species for all fisheries]

Table 15 below shows total product weights and revenues for the catcher processor sector during the qualifying years. The table shows that rockfish production is a relatively small portion of the annual revenues of qualified catcher processors.

¹⁴ 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 target CGOA groundfish. Additional information on the participation of these vessels in other fisheries in the month of July is contained in the analysis of the effects on other fisheries in section 2.5.17 below.

Captains and Crew in the Rockfish Fisheries¹⁵

Trawl catcher vessels in the CGOA rockfish fisheries are typically operated by a captain and two to four crewmembers. Since the fisheries have a very short duration, rockfish captains and crews often work on the same vessel in other fisheries throughout the year. A limited number of crew, however, work on other vessels in other fisheries, including fixed gear fisheries for crab and halibut. Captains and crew are typically compensated using a share system, under which they receive a portion of the revenues generated by the vessel during the season. Crew shares are 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. Captains earn share approximately one and one-half the average crew share. Both captain and crew earn relatively larger shares on vessels with fewer crew. Total crew shares 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 vary with the size of the vessel. The largest vessels have crews in excess of 50. Small vessels carry crews of fewer than 30 persons. Some deck crew also work in the processing plant. As with catcher vessels, catcher processor crews often work in several other fisheries in addition to the rockfish fisheries, as the CGOA rockfish fisheries is of relatively short duration. Most crews remain with the vessel on which they fish CGOA rockfish throughout the remainder of the year. Rockfish catcher processor crews are compensated based on vessel revenues, but earn a slightly lower percentage of revenues, since processed product generates higher revenues. Deck crew on processing vessels earn a share of between 1.5 percent and 3 percent, while the captains earn approximately between 5 and 10 percent. Processing crew earn between 0.5 percent and 2 percent, while the factory foreman earns approximately 1.5 to 3 percent. Some crewmembers (such as cooks) may be paid a daily wage (or receive a daily minimum) in some instances. Shares likely differ with the expenses that are removed in determining the revenue basis on which shares are calculated. In some cases, long term crews may be provided additional benefits, such as health insurance. Total crew shares on catcher processors might be slightly lower than on catcher vessels, as they are based on processed product revenues, and are on the order of 25 to 35 percent of the basis revenues.

2.4.4. The processing sector

This section summarizes processor participation in the CGOA rockfish fisheries. Several processors have received deliveries from these fisheries in recent years. Table 7, Table 8, and Table 9 show deliveries of CGOA Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish, respectively, to processors by processor qualification (under the catcher vessel alternatives) and port from 1996 to 2002. For purposes of qualification, the tables used the criteria identified in the main portion of the motion (and not the suboption). The number of processors satisfying the suboption criteria cannot be reported because of confidentiality limitations and the lack of availability of information concerning investments in facilities. Any processor that is eligible for the main program would then be ineligible for the entry level fishery.

¹⁵ The knowledge of captain and crew activity on rockfish vessels is limited by the a shortage of data. The following summary, therefore, relies on anecdotal information from participants in the fisheries.

Table 7. Landings with processors by qualification and port – CGOA Pacific Ocean perch.

Year		Cordova		Kodiak		Sand Point		Seward		Totals	
		Plants	Tons	Plants	Tons	Plants	Tons	Plants	Tons	Plants	Tons
1996	qualified			6	2,216.7					6	2,216.7
	unqualified										
1997	qualified			5	2259.1**					5	2259.1**
	unqualified	1	*	1	*			1	*	3	*
1998	qualified			6	2356.9**					6	2356.9**
	unqualified					2	*			2	*
1999	qualified			6	2430.2**					6	2430.2**
	unqualified					1	*			1	*
2000	qualified			6	4011.7**					6	4011.7**
	unqualified			1	*					1	*
2001	qualified			6	3,652.2					6	3,652.2
	unqualified										
2002	qualified			5	4,423.1					5	4,423.1
	unqualified										
All	qualified			6	20,607.4					6	20,607.4
	unqualified	1	*	2	*	2	*	1	*	6	742.6

* Withheld for confidentiality

**Includes amounts from same year withheld for confidentiality.

Table 7 shows landings with processors by qualification and port of CGOA Pacific Ocean perch. The table shows that less than 5 percent of landings were with processors that are not qualified for the program. Six qualified processors and six unqualified processors received landings between 1996 and 2002. Qualified processor showed consistent participation with all six participating in 5 of the 7 years. Only one of the unqualified processors participated in more than one year. All qualified processors are based in Kodiak. Unqualified processors are based in Cordova, Kodiak, Sand Point and Seward.

Table 8. Landings processors by qualification and port – CGOA Northern rockfish.

Year		Kodiak		Seward		Totals	
		Plants	Tons	Plants	Tons	Plants	Tons
1996	qualified	6	854.7			6	854.7
	unqualified						
1997	qualified	5	811.2			5	811.2
	unqualified						
1998	qualified	6	1,754.4**			6	1,754.4**
	unqualified			2	*	2	*
1999	qualified	6	1,882.3**			6	1,882.3**
	unqualified			1	*	1	*
2000	qualified	6	1,681.2**			6	1,681.2**
	unqualified	1	*			1	*
2001	qualified	6	1,239.7			6	1,239.7
	unqualified						
2002	qualified	5	2,099.4			5	2,099.4
	unqualified						
All	qualified	6	10,323.0**			6	10,323.0**
	unqualified	1	*	2	*	3	*

* Withheld for confidentiality

**Includes amounts from same year withheld for confidentiality.

Table 8 shows participation of processors in the CGOA Northern rockfish fishery from 1996 to 2002. Six qualified and three unqualified processors participated in the fishery during this period. Because only three unqualified processors participated in the fishery, no information concerning the distribution of landings between qualified and unqualified processors can be revealed. As in the Pacific Ocean perch

fishery, all six qualified processors participated in 5 of the 7 years shown, while only one unqualified processor participated in more than one year. All qualified processors are from Kodiak, while the unqualified processors are from Kodiak and Seward.

Table 9. Landings with processors by qualification and port - CGOA Pelagic shelf rockfish.

Year		Cordova		Kodiak		Seward		Totals	
		Plants	Tons	Plants	Tons	Plants	Tons	Plants	Tons
1996	qualified			6	335.3*			6	335.3*
	unqualified					1	*	1	*
1997	qualified			5	208.1**			5	208.1**
	unqualified	1	*					1	*
1998	qualified			5	587.3			5	587.3
	unqualified			1	*	3	*	4	28.6
1999	qualified			6	1293.6**			6	1293.6**
	unqualified			1	*	1	*	2	*
2000	qualified			6	2240.0**			6	2240.0**
	unqualified			2	*			2	*
2001	qualified			6	1236.6**			6	1236.6**
	unqualified			3	*			3	*
2002	qualified			6	1267.7**			6	1267.7**
	unqualified			2	*			2	**
All	qualified			6	6,940.7			6	6,940.7
	unqualified	1	*	4	219.5**	4	38.0	9	257.5

* Withheld for confidentiality

**Includes amounts from same year withheld for confidentiality.

Table 9 shows deliveries to processors of CGOA pelagic shelf rockfish from 1996 to 2002. The table shows that 6 qualified processors and 9 unqualified processor received deliveries of pelagic shelf rockfish during this period. Unqualified processors showed little consistent participation, except in Kodiak, where at least two unqualified processors participated in each of the last three years. Although participation by unqualified processors was more consistent in the pelagic shelf rockfish fishery than the other rockfish fisheries, landings with unqualified processors account for less than 5 percent of the total landings during this period.

Table 10 below shows processing of all species by qualified processors from 1996 to 2002. The data in the table are from the State of Alaska Commercial Operators Annual Reports. Since these data are not reported on a management area basis, all of the production numbers could include amounts from management areas other than the Central Gulf of Alaska.

Table 10. Production and first wholesale revenues by species of qualified processors (1996-2002).

Year	Target rockfish*			Other groundfish			Halibut		
	Number of processors	Pounds of product	First wholesale revenues (\$)	Number of processors	Pounds of product	First wholesale revenues (\$)	Number of processors	Pounds of product	First wholesale revenues (\$)
1996	5	2,177,681	1,079,184	6	76,293,620	97,178,910	6	5,851,288	17,663,681
1997	5	2,525,305	2,100,228	5	46,306,362	61,626,500	5	10,416,152	27,021,252
1998	6	3,182,861	4,138,575	6	60,225,492	75,263,476	5	6,793,551	12,908,444
1999	6	10,882,418	2,222,039	6	85,186,290	83,485,862	5	4,610,994	12,807,574
2000	6	3,918,959	3,109,583	6	52,037,853	80,525,827	6	3,671,595	10,699,500
2001	6	3,567,277	3,258,214	6	47,316,488	63,578,566	4	3,772,819	9,298,905
2002	6	4,503,351	4,739,876	6	41,264,425	59,797,762	5	3,672,234	11,673,430
Total	6	30,757,852	20,647,699	6	408,630,530	521,456,903	6	38,788,633	102,072,786

Year	Shellfish			Salmon			Other		
	Number of processors	Pounds of product	First wholesale revenues (\$)	Number of processors	Pounds of product	First wholesale revenues (\$)	Number of processors	Pounds of product	First wholesale revenues (\$)
1996	5	1,087,704	4,819,521	5	19,069,365	36,979,713	6	3,426,434	5,165,301
1997	4	953,567	3,487,086	5	16,003,627	24,954,048	5	4,771,908	3,500,340
1998	3	*	*	5	22,878,189	33,176,023	5	1,942,002	1,637,775
1999	4	680,224	4,996,787	5	21,681,651	34,300,890	5	1,607,692	1,427,174
2000	3	*	*	5	21,632,006	32,214,388	5	1,661,827	1,424,343
2001	6	1,144,961	7,026,051	5	30,990,164	34,964,468	2	2,460,394	1,914,696
2002	6	1,202,454	7,708,056	4	31,559,447	34,453,075	5	1,842,279	1,506,087
Total	6	7,479,807	38,706,671	5	163,814,449	231,042,605	6	17,712,536	16,575,716

* Includes only allocated target rockfish species .

** Withheld for confidentiality.

Source: Rockfish pilot program database (Version 1).

The table shows that rockfish production is a relatively small portion of the production by qualified processing plants (slightly less than 5 percent of total production by weight and slightly more than 2 percent of total production by weight). The first wholesale revenues on rockfish show that qualified processors receive substantially less for target rockfish products, than for other species. Although overall target rockfish production has increased in recent years, the production of other groundfish has declined substantially over the time period shown. This decline parallels the decline in groundfish harvests in the Gulf of Alaska, which resulted from stock declines in some target species, primarily pollock.

2.4.5. Ex vessel pricing and harvester/processor relationships

Ex vessel prices are 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, a processor's fleet may meet with the processor to discuss delivery scheduling among fleet members. A processor typically offers a common price to all of its fleet members. Fishermen often communicate with each other concerning processor price offers, but most perceive that little negotiating leverage exists. In last few years, a new processor has entered the market and reportedly has offered a slightly higher price than all other processors. The new entrant has drawn some vessels away from other processors, but most of the fishermen have remained with their historic processor. Usually fishermen will remain with their primary processor throughout the season. Harvesters typically deliver on a rotation, with fishing trips of less than 72 hours to maintain product quality. Fishermen typically do not receive payment for low quality fish that cannot be marketed except as meal. At times fishermen will move to another processor for a delivery midseason. These movements are typically made to avoid loss of quality because of a long wait to offload, and at times are facilitated by the processors.

Occasionally, post season bonuses are paid by processors in response to good market prices for products or in response to prices of competing processors. Processors in the rockfish fisheries are 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 move all for all of their deliveries, not just rockfish deliveries.

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

Fishermen typically separate Pacific cod and sablefish from rockfish and store them in iced totes. Pacific cod are usually bled. Sablefish are usually bled and sometimes are headed and gutted. Both species bring a substantially higher price than the target rockfish and are priced based on quality, so fishermen give extra attention to their care. Shortraker, rougheye, and thornyheads also bring a premium price, but are caught in substantially lower quantities than Pacific cod and sablefish.

Table 11 shows the number of catcher vessels, landings, ex vessel revenues, and average ex vessel price from 1996 to 2002 in the CGOA rockfish fisheries.

Table 11. Number of catcher vessels, landings, ex vessel revenues, and average ex vessel prices in the Central Gulf of Alaska Rockfish Fisheries (1996-2002).

Year	Gear	Pacific Ocean perch				Northern rockfish				Pelagic shelf rockfish			
		Number of vessels	Landings (mt)	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)	Number of vessels	Landings (mt)	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)	Number of vessels	Landings (mt)	Ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)
1996	Non-trawl									2	*	*	*
	Trawl	28	2,216.7	254,473	0.052	23	854.7	88,561	0.047	26	334.6	40,886	0.055
1997	Non-trawl					1	*	*	*	3	*	*	*
	Trawl	26	2,259.1	253,427	0.051	17	758.3	88,603	0.053	21	198.6	22,416	0.051
1998	Non-trawl									2	*	*	*
	Trawl	30	2,356.9	363,728	0.070	30	1,754.4	232,063	0.060	29	615.8	81,450	0.060
1999	Non-trawl									2	*	*	*
	Trawl	31	2,430.2	421,440	0.079	32	1,882.3	290,483	0.070	32	1,293.2	199,577	0.070
2000	Non-trawl									2	*	*	*
	Trawl	31	4,011.7	636,787	0.072	31	1,681.2	233,503	0.063	31	2,240.9	301,359	0.061
2001	Non-trawl									6	4.0	2,374	0.272
	Trawl	33	3,652.2	402,587	0.050	30	1,239.7	136,652	0.050	33	1,232.6	138,534	0.051
2002	Non-trawl									8	2.1	1,224	0.261
	Trawl	33	4,423.1	477,812	0.049	30	2,099.4	231,422	0.050	33	1,265.6	147,873	0.053
Total	Non-trawl					1	*	*	*	22	16.8	6,333	0.171
	Trawl	47	21,350.0	2,810,255	0.060	46	10,270.1	1,301,287	0.057	46	7,181.3	932,095	0.059

Source: NPFMC Rockfish Database, Version 1
 * Withheld for confidentiality

As the table shows, trawl ex vessel prices ranged from slightly less than 5 cents per pound to almost 8 cents per pound during this period. Prices were at their highest in 1996, 1997, and 1998. No particular relationship appears to exist across species, as the prices varied relative to each other across the years. Non-trawl ex vessel prices were substantially higher, particularly in the last two reported years, when they were almost 5 times the trawl price.

2.4.6. Product markets

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

Table 12 shows production quantities, first wholesale revenues and average prices from 1996 to 2002 from Commercial Operators Annual Reports. These data are aggregated across all management areas, not allowing the separation of products from the Central Gulf of Alaska directed rockfish fishery.

Table 12. Production, first wholesale revenues, and average prices of rockfish products by processors that received targeted rockfish from the Central Gulf of Alaska (1996-2002).

Pacific Ocean perch												
Year	Fillet				Surimi				Whole and head & gut			
	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)
1996	1	*	*	*	1	*	*	*	5	1,342,691	522,566	0.389
1997	4	532,930	793,307	1.489	2	*	*	*	5	1,126,674	396,216	0.352
1998	6	970,533	1,803,902	1.859	6	*	*	*	6	733,822	282,951	0.386
1999	6	517,886	620,246	1.198	1	*	*	*	3	*	*	*
2000	6	982,950	1,120,501	1.140	1	*	*	*	4	745,474	258,909	0.347
2001	6	991,028	1,424,641	1.438	1	*	*	*	4	909,472	376,516	0.414
2002	5	894,835	1,928,008	2.155	3	*	*	*	4	1,018,763	334,915	0.329
Total	8	4,997,971	7,823,210	1.565	4	3,525,587	2,310,370	0.655	10	7,670,954	2,437,360	0.318

Northern rockfish												
Year	Fillet				Surimi				Whole and head & gut			
	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)
1996	1	*	*	*					4	220,283	54,003	0.245
1997	2	*	*	*	1	*	*	*	3	*	*	*
1998	6	515,255	950,746	1.845	1	*	*	*	5	912,626	455,257	0.499
1999	2	*	*	*					4	1,454,105	218,307	0.150
2000	4	492,520	484,189	0.983					4	258,709	49,673	0.192
2001	5	278,678	426,790	1.531					3	*	*	*
2002	6	258,794	453,880	1.754	1	*	*	*	3	*	*	*
Total	7	2,049,212	3,132,966	1.529	2	*	*	*	7	3,184,011	920,369	0.289

Pelagic shelf rockfish												
Year	Fillet				Surimi				Whole and head & gut			
	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)
1996	2	*	*	*					3	*	*	*
1997	3	*	*	*					6	336,694	246,670	0.733
1998	5	100,252	187,523	1.871					8	664,874	686,326	1.032
1999	4	191,497	290,935	1.519					5	6,482,322	315,509	0.049
2000	5	640,093	809,193	1.264					4	178,084	46,258	0.260
2001	6	369,367	564,578	1.529					6	440,054	270,096	0.614
2002	5	149,677	254,740	1.702	1	*	*	*	5	209,745	297,559	1.419
Total	10	1,533,828	2,301,611	1.501	1	*	*	*	13	8,556,898	2,012,966	0.235

* Withheld for confidentiality.

The data show that most production of rockfish is whole fish and headed and gutted fish. These products generate substantially less revenue than fillets, which sell for approximately 5 times the whole and head and gut price for all species. Accepting that whole and head and gut products have substantially higher recovery rates, the return per pound of raw fish from fillet production is substantially higher than that for whole and head and gut products.¹⁶ The price differential across species is relatively small, although in recent years whole and headed and gutted pelagic shelf rockfish have sold for substantially more than whole and headed and gutted Pacific Ocean perch and northern rockfish. This price difference could be a reflection of increased participation of non-trawl participants in the pelagic shelf rockfish fisheries, which tend to produce higher quality fish. Applying estimated recovery rates to these product weights, slightly more raw fish are produced into whole and head and gut products and fillets. The amount of raw fish that

¹⁶ Recovery rates are generally approximately 25 percent for fillets, 20 percent for surimi, and 55 percent for head and gut products.

go to surimi production cannot be reveal because of confidentiality limits in two of the three fisheries, but is less than the other two product forms in the Pacific Ocean perch fishery.

In general, fillet production is largely sold into U.S. markets and surimi production is largely sold into Asian markets. The whole and head and gut production is delivered to Asia, where the whole fish is typically consumed and the head and gut is generally reprocessed. A portion of the head and gut production is returned to U.S. markets.

Table 13 shows production of secondary species products by rockfish qualified processors.

Table 13. Production, first wholesale revenues, and average product prices of secondary species by processors that received targeted rockfish from the Central Gulf of Alaska (1996-2002).

Year	Pacific cod				Sablefish				Rougheye			
	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)
1996	7	25,471,631	29,562,779	1.161	5	1,480,541	5,857,093	3.956	3	*	*	*
1997	8	26,625,305	38,136,968	1.432	8	2,318,254	10,176,174	4.390	3	*	*	*
1998	10	22,273,954	32,050,212	1.439	9	3,911,096	13,015,721	3.328	7	42,094	41,908	0.996
1999	6	33,261,085	44,396,203	1.335	6	1,577,611	5,538,332	3.511	4	54,296	37,528	0.691
2000	7	21,639,026	32,088,270	1.483	6	1,383,571	5,760,370	4.163	5	26,071	29,333	1.125
2001	9	22,665,303	30,077,297	1.327	8	1,924,852	6,957,882	3.615	6	24,636	27,279	1.107
2002	7	20,297,463	30,733,856	1.514	6	1,637,641	6,539,977	3.994	5	36,185	48,507	1.341
Total	15	172,233,767	237,045,585	1.376	13	14,233,566	53,845,549	3.783	10	228,932	242,560	1.060

Year	Shortraker				Thornyheads			
	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)	Number of processors	Pounds of product	First wholesale revenues (\$)	Average price (\$/lb)
1996	2	*	*	*	5	142,004	434,826	3.062
1997	3	*	*	*	8	234,333	560,596	2.392
1998	5	35,680	35,099	0.984	9	307,798	685,299	2.226
1999	3	*	*	*	6	132,628	267,845	2.020
2000	4	40,005	29,640	0.741	6	122,678	258,373	2.106
2001	5	9,123	7,778	0.853	8	99,613	177,713	1.784
2002	3	*	*	*	6	91,101	165,012	1.811
Total	10	144,119	134,192	0.931	12	1,130,155	2,549,664	2.256

* Withheld for confidentiality

Table 14 shows products, product revenues, and average produce prices for the catcher processor sector in the CGOA rockfish fisheries. The table shows that most production of all species is eastern cut head and gut, but that some whole fish and some western cut head and gut were also produced. Although prices of the species vary relative to one another, in most years Pacific Ocean perch brought the highest prices, while pelagic shelf rockfish sold for a higher price than northern rockfish. Prices also varied year to year, with prices at their highest in the 1996 and 1997, the first two years of the period. No information concerning western cut could be released because few vessels processed that product.

The production of secondary and other (non-allocated) species is also important to rockfish catcher processor participants. Table 15 shows the product weights, product revenues, and average product prices for secondary and non-allocated species. As the table shows, catcher processors generate substantial revenues from sablefish, greater than from northern rockfish and pelagic shelf rockfish combined in the years shown. Shortraker/rougheye revenues also exceed those from pelagic shelf rockfish during the years shown. In addition, prices for each of the allocated secondary species exceed those of all of the target CGOA rockfish. Although not shown in the table most production of secondary species is head and gut fish.

Table 14. Target Rockfish Products, Product Weights, Product Revenues, and Average Product Prices of the Catcher Processor Sector in the Central Gulf of Alaska Rockfish Fishery (1996-2002).

Year	Product	Pacific Ocean perch				Northern rockfish				Pelagic shelf rockfish			
		Number of vessels	Product weight (MT)	Product revenues (\$)	Average product price (\$)	Number of vessels	Product weight (MT)	Product revenues (\$)	Average product price (\$)	Number of vessels	Product weight (MT)	Product revenues (\$)	Average product price (\$)
1996	whole	1	*	*	*	1	*	*	*	1	*	*	*
	eastern cut	11	610.0	980,244.00	0.729	10	847.9	560,418.00	0.300	9	615.8	919,308.00	0.677
1997	whole	2	*	*	*	3	207.6	21,517.00	0.047	1	*	*	*
	eastern cut	15	1,634.7	2,444,338.00	0.678	14	622.6	447,497.00	0.326	13	735.5	996,951.00	0.615
1998	whole	2	*	*	*	3	330.7	221,508.00	0.304				
	eastern cut	10	1,755.6	1,740,588.00	0.450	8	282.7	216,254.00	0.347	9	869.9	704,313.00	0.367
1999	whole	9	1,132.0	975,367.00	0.391	7	901.5	726,689.00	0.366	2	*	*	*
	eastern cut	11	1,500.0	1,557,724.00	0.471	9	371.9	319,719.00	0.390	8	891.2	766,242.00	0.390
2000	whole	1	*	*	*	3	249.0	78,302.00	0.143	2	*	*	*
	eastern cut	5	1,545.5	1,785,118.00	0.524	4	100.7	68,960.00	0.311	5	171.3	180,738.00	0.479
2001	whole	3	53.9	34,226.00	0.288	2	*	*	*				
	eastern cut	7	2,174.3	1,690,796.00	0.353	7	395.1	245,879.00	0.282	7	451.0	358,333.00	0.360
2002	whole	1	*	*	*								
	eastern cut	6	1,443.3	1,765,196.00	0.555	6	292.2	262,836.00	0.408	6	576.1	543,668.00	0.428
All	whole	7	1,817.9	1,476,859.00	0.368	7	2,004.4	1,227,760.00	0.278	4	434.3	399,409.00	0.417
	eastern cut	20	10,663.4	11,964,004.00	0.509	18	2,913.0	2,121,563.00	0.330	18	4,310.9	4,469,553.00	0.470

* Withheld for confidentiality.

Source: NPFMC Rockfish Database, Version 1.

Table 15. Secondary and Non-Allocated Species Product Weights, Product Revenues, and Average Product Prices of the Catcher Processor Sector in the Central Gulf of Alaska Rockfish Fishery (1996-2002).

Year	Pacific cod				Sablefish				Shortraker/rougeye			
	Vessels	Product weight (mt)	Product revenues (\$)	Average product price (\$)	Vessels	Product weight (mt)	Product revenues (\$)	Average product price (\$)	Vessels	Product weight (mt)	Product revenues (\$)	Average product price (\$)
1996	1	*	*	*	11	208.5	1,752,348	3.812	10	190.3	820,551	1.956
1997	12	28.4	48,569	0.775	15	199.2	1,644,940	3.746	15	170.7	487,949	1.297
1998	9	61.7	108,733	0.799	9	228.4	1,446,786	2.874	8	238.2	464,478	0.885
1999	11	139.5	361,681	1.176	11	190.0	1,481,616	3.537	10	115.3	288,609	1.135
2000	5	27.3	72,843	1.210	5	140.4	1,285,190	4.152	5	211.9	747,070	1.599
2001	7	21.6	49,687	1.043	7	131.7	992,064	3.418	7	231.6	827,789	1.621
2002	6	26.5	61,858	1.059	6	141.4	1,099,037	3.527	6	182.0	545,592	1.360
All	18	306.7	706,072	1.044	21	1239.5	9,701,981	3.550	19	1340.0	4,182,038	1.416

Year	Thornyheads				Other			
	Vessels	Product weight (mt)	Product revenues (\$)	Average product price (\$)	Vessels	Product weight (mt)	Product revenues (\$)	Average product price (\$)
1996	11	42.2	283,229	3.044	11	85.0	129,793	0.693
1997	15	76.2	250,310	1.489	14	111.8	93,415	0.379
1998	8	80.6	297,737	1.676	10	144.6	144,656	0.454
1999	11	66.7	271,259	1.844	11	207.2	193,964	0.425
2000	5	94.0	371,515	1.792	5	206.1	227,632	0.501
2001	7	97.8	107,844	0.500	7	108.6	102,539	0.428
2002	6	98.3	276,398	1.276	5	70.2	76,927	0.497
All	21	555.8	1,858,292	1.517	21	933.4	968,926	0.471

* Withheld for confidentiality

Source: NPFMC rockfish database, Version 1

2.4.7. 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 crews 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 unlikely to go unnoticed in large cities.

Catcher vessel sector participation by community

Participants in the CGOA rockfish fisheries are from several different communities. CFEC vessel license files were used to estimate the participation by residents of different places. Table 16 shows catcher vessel landings by residents of different places during the years 1996 to 2002.

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. Non-trawl participants are primarily from Alaska, as only one person from outside the State participated in any of the fisheries in the years shown.

Table 16. Central Gulf of Alaska Rockfish Landings of Catcher Vessels by Place of Residence (1996-2002).

Year	Gear	Community	Pacific Ocean perch		Northern rockfish		Pelagic shelf rockfish	
			Number of Participants	Catch (in metric tons)	Number of Participants	Catch (in metric tons)	Number of Participants	Catch (in metric tons)
1996	Non-trawl	Other Alaska					2	*
	Trawl	Kodiak	17	1,241.6	16	592.2**	17	182.7
		Other Alaska	1	*	1	*		
		Washington	3	*	2	*	3	*
		Other State	7	759.6	7	298.6	7	115.6
Total		28	2,223.5	26	890.8	29	343.1	
1997	Non-trawl	Kodiak			1	*	2	*
	Trawl	Other Alaska					1	*
		Kodiak	16	1,410.2	10	335.8	14	96.7
		Other Alaska	1	*				
		Washington	3	*	3	*	3	*
Total		26	2,264.8	19	811.6	26	210.3	
1998	Non-trawl	Kodiak					1	*
	Trawl	Other Alaska					1	*
		Kodiak	13	1256.2**	13	779.4**	13	281.6**
		Other Alaska	2	*	2	*	1	*
		Washington	6	322.8	6	212.2	6	64.6
Total		30	2,358.4	30	1,755.1	31	619.2	
1999	Non-trawl	Kodiak					2	*
	Trawl	Other Alaska					1	*
		Kodiak	13	968.2**	14	882.7**	14	504.8**
		Other Alaska	1	*	1	*	1	*
		Washington	8	806.6	8	457.0	8	471.3
Total		31	2,430.2	32	1,882.3	34	1,293.7	
2000	Non-trawl	Kodiak					1	*
	Trawl	Other Alaska					1	*
		Kodiak	16	2183.3**	16	856.6**	16	1279.1**
		Other Alaska	1	*	1	*	1	*
		Washington	5	694.0	5	273.5	5	396.0
Total		31	4,012.6	31	1,708.3	33	2,251.9	
2001	Non-trawl	Kodiak					3	6.4***
	Trawl	Other Alaska					3	*
		Kodiak	14	1437.5**	14	573.2**	14	411.3***
		Other Alaska	1	*	1	*	1	*
		Washington	6	535.9	5	184.2	6	359.3
Total		33	3,675.1	31	1,268.3	39	1,256.3	
2002	Non-trawl	Kodiak					6	10.6***
	Trawl	Other Alaska					1	*
		Other State					1	*
		Kodiak	13	2011.3**	12	908.1**	13	554.4***
		Other Alaska	1	*	1	*	1	*
Total		33	4,423.1	30	2,119.7	41	1,304.5	

* Withheld for confidentiality

** Includes values for all cells for the same species and in same year with data suppressed for confidentiality

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

Note: Total tonnages may not agree with totals in other tables because of rounding errors.

Source: NPFMC Rockfish Database, Version 1 (2004).

[brief profile and discussion importance of rockfish to the Kodiak economy to be provided here and in Appendix – note cross reference participation in other fisheries above]

Catcher processor participation by community

Since few catcher processors participated in the rockfish fishery, disaggregation of data showing rockfish harvest by catcher processors on a community basis is not possible. Table 17 shows the number of catcher vessels participating in the CGOA rockfish fisheries by year and residence of owner from 1996 to 2002. The table shows tha most participants are Seattle-based. Two participants are based in other Washington state communities, while the remainder are from Kodiak, Alaska.

Table 17. Catcher processor participation by year and residence of vessel owner (1996-2002).

Year	Kodiak	Seattle	Other Washington	Total
1996	1	8	2	11
1997	3	12		15
1998	2	8		10
1999	1	10		11
2000		5		5
2001		5	2	7
2002	1	5		6
Total	3	16	2	21

[Brief discussion of Seattle economy and relative importance of the industry to that economy to be provided]

Processor participation by community

Information concerning participation in the processing sector appear in Table 7, Table 8, and Table 9 above. As noted, all qualified processors are Kodiak based. Processing from other communities cannot be reported, with the exception of the processing of less than 40 metric tons by processors in Seward.

This section should include

profile of the a Kodiak processors –

show relative share of rockfish processing in Kodiak as an indication of the importance of rockfish processing to Kodiak.

Also include abbreviated profile as an appendix

2.5. 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 created by the different alternatives. Predictability of these individual actions and their effects is constrained by the novelty of the programs 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 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, all of the different impacts are brought to light allowing the reader to determine the significance of impacts of the different alternatives.

In addition to the main pilot program fishery, all of the pilot 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 pilot program fishery.

2.5.1. Effects on management, monitoring, and enforcement

The current rockfish fisheries are managed at the fleet level. Managers monitor fleet harvests attempting 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. The allocations under most of the pilot program alternatives would require substantial change in this management.¹⁷ Season timing and length will change to allow recipients to slow the rate of fishing and fish at different times than the traditional July season. Monitoring will need to be modified so that these allocations are monitored at the individual or cooperative level. In addition, observer requirements will also need to be modified to suit the new system of allocations.

In addition to the management of the various allocations in the primary fishery, a monitoring program will need to be developed for the entry level fishery. Since the entry level fishery will be conducted under the same regulations under all of the pilot program alternatives, the entry level fishery is analyzed independently after the other pilot program alternatives.

Lastly, under all of the pilot program alternatives an incidental catch allowance (ICA) of target CGOA rockfish would be set aside prior to the allocations to the pilot program and the entry level fishery to support incidental rockfish catch in other CGOA fisheries. The determination of the ICA is also discussed below at the end of this section.

Status quo

Under its current management, the rockfish fisheries are conducted as a limited access race for fish. Managers must first manage the LLP, under which license holders must declare their intention to use a license on a vessel with the NOAA Fisheries.

Non-trawl fishing in the rockfish fisheries begins on January 1st. The trawl season typically opens in early July and ongoing catch is monitored by managers with the closing timed to coincide with harvest of the TAC.¹⁸

Under the current management, observer coverage varies 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

¹⁷ The catcher processor sector allocation would be managed at a fleet level in a manner similar to the offshore sector allocation under the AFA.

¹⁸ Additional information concerning current management appears in the description of the affected environment above.

feet or greater in length are required to have 30 percent observer coverage. Vessels under 60 feet have no observer requirement. Shoreside and floating processors that process in excess of 1,000 mt 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 mt and more than 500 mt of groundfish in a calendar month are required to maintain 30 percent observer coverage (CFR §679.50).

Catcher processor sector allocation with cooperatives

Under this alternative, the catcher processor sector would receive allocations of target rockfish, secondary species, and halibut PSC. Eligible catcher processors would then have the option of joining a cooperative, which would fish an allocation (target rockfish, secondary species, and halibut PSC) based on the collective histories of its members in accordance with a cooperative agreement, or fishing in a limited access fishery, which would receive an allocation based on the collective histories of non-members of cooperatives. Since these two different types of allocations would be managed differently, the discussions of management of cooperatives and the limited access fishery are separated.

The implementation of the program will require that NOAA Fisheries determine the pool of eligible persons for the catcher processor sector, the sector allocation and the individual histories of eligible persons. Cooperative agreements will be filed with NOAA Fisheries every two years, which must be reviewed for adequacy (including monitoring plan). NOAA Fisheries will be required to make annual catch allocations to cooperatives (based on member histories) and to the limited access fishery.

NOAA Fisheries would require that all participants in the pilot program to submit an annual registration in the fall prior to the year in which the fishing occurs. This requirement provides NOAA Fisheries with the time necessary to incorporate any allocations to participants in the program in the annual TAC specifications process.

Under all of the pilot program alternatives, cooperatives would be permitted to fish their allocations during an extended season. The length of the season, however, will be set to balance the interests of participants in distributing landings over a longer period of time each year and the interests of NOAA Fisheries in managing catch in the fishery. Currently, NOAA Fisheries believes that an appropriate season length to balance these interests would begin on April 15th and end on August 31st. Any fishing under the pilot program, including primary, secondary, and the entry level fishery would need to be conducted during this time period. This limitation is necessary to accommodate the additional management responsibilities from expanded observer requirements and to ensure adequate ability to manage catch, particularly halibut PSC and species that are not allocated under the program. This season would also reduce potential conflicts with the fall Pacific cod fishery, which typically opens in September.

The current July season start date for the rockfish fishery is intended to reduce halibut PSC. While the pilot program is intended to increase the industry's ability to respond to the changing market needs, NOAA Fisheries has some concern that expanding the fishery into new time periods could affect halibut PSC and incidental catch of species not allocated under the program. Additionally, the July start date was established to reduce potential conflicts with the sablefish trawl survey, which typically occurs in early summer. The proposed season dates are intended to provide a reasonable degree of additional flexibility. If additional analysis or fishing experience under the program adequately demonstrate that the fishery can be successfully prosecuted under an extended season without negative consequences, the season could be extended.

This season extension and the exclusive allocations could require substantial monitoring increases on vessels that fish cooperative allocations. Management of allocations will require that all catch under the program be monitored. To meet this end, a protocol will need to be developed for the participants in the program to notify NOAA Fisheries when fishing will be conducted under pilot program. For catcher

processors, notices will be required prior to initiating a trip to ensure adequate observer deployment. The notification would establish a default assumption that any fishing on the trip would be under the program. During the trip, fishing outside of the program could take place. Prior notice will be required to allow observers onboard to make adjustments in coverage to suit the fishing activity. This system would effectively require haul-by-haul notification of whether fishing is under the program, if the catcher processor intends to engage in both fishing under the program and outside the program on a single trip. The specific notification requirements will be developed to accommodate operational flexibility needs of participants and management, monitoring, and enforcement needs of NOAA Fisheries. NOAA Fisheries would establish minimum standards for the catcher processor fleet, specifically two observers (with each haul observed), flow scales, a sampling station with a motion-compensated platform scale (to verify accuracy of the flow scale), and an individual catch monitoring plan that would be consistent with existing standards in other fisheries. Information gathered onboard vessels would be used to validate catch accounting by inseason management. The individual catch monitoring plan could include a provision that would allow NOAA Fisheries to approve an alternative method of monitoring, if there is sufficient evidence to suggest that the fishery can be effectively managed and monitored and provide adequate information to enforcement using an alternative protocol.

Management of the limited access fishery would differ substantially from the management of cooperatives. This fishery would continue to be prosecuted early in July, with managers monitoring harvests and timing the closing of the fishery to coincide with harvest of the sector TAC. Observer coverage would continue to be maintained at its current level for this fleet to ensure adequate information for managing harvests and monitoring the fleet. Participation in the limited access component cannot be predicted. If most catcher processors choose to join cooperatives, however, it is possible that the allocation could be so small that the fishery would be opened for a very limited time, the length of which would be announced prior to the opening (e.g., a 12-hour opening announced prior to fishing). The length of any such opening would be based on estimates of harvest rates from previous seasons or openings and the estimated effort of participating vessels. If the amount of fish remaining available after the closure is adequate to support an additional opening (without overage), an additional opening would be scheduled.

In addition to managing target rockfish harvests, NOAA Fisheries would also be required to manage secondary species allocations to the limited access fishery. Catcher processors will receive secondary species allocations of sablefish, thornyheads, shortraker, and rougheye. These secondary species allocations are based on historic harvests when targeting rockfish and are intended to operate as hard caps on total harvests of the species. In a limited access fishery, management of non-target species is historically accomplished with an MRA. NOAA Fisheries would continue to use MRAs to manage allocated secondary species. The levels of the MRAs, however, will be adjusted to a level that is likely to maintain catch levels of secondary species in the limited access fishery below the allocated amount.

To maintain catch below the allocated amount, MRA levels will need to be adjusted downward substantially. Since the allocated secondary species are valuable species and NOAA Fisheries has historically managed their catch using the MRAs, historical catch of these secondary species (on which the allocations are based) has been below the current MRA levels.¹⁹ As a result, the allocations of secondary species are substantially less than would be available for harvest, if the current MRAs are maintained. Adjustment of the MRAs downward will be used to limit the incentive to target secondary species and maintain catch to a level below the allocation. Specific MRA levels will be set based on the relative allocations of target rockfish and secondary species.

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Table 5 above shows that historic harvests of secondary species are substantially below the current MRAs.

Non-allocated species will also need to be managed in the limited access fishery. These species will be managed under existing MRAs, with the exception of Pacific cod, which will be managed with a revised MRA of 4 percent of the target rockfish. Initially, the Council considered allocating Pacific cod to catcher processors in a manner similar to allocated secondary species. Catcher processors, however, have relatively low historic levels of harvest of Pacific cod, which could result in an allocation that is not adequate to support prosecution of the targeted rockfish allocation (see Table 5 and [Appendix 2](#)). The revised MRA is intended to restrict Pacific cod harvests to a level similar to historic levels, using an MRA that allows discards to ensure that Pacific cod does not restrict harvest of target rockfish.

In addition to managing aspects of the rockfish target fishery, NOAA Fisheries would need to approve and monitor and manage sideboards. Catcher processor sideboards have a few aspects that must be considered.

First, an overall sector sideboard would limit harvest of eligible catcher processors from July Bering Sea, Aleutian Islands, and Gulf of Alaska fisheries other than the CGOA rockfish fisheries. To manage and monitor this sideboard, the NOAA Fisheries would require that vessels that are subject to the sideboard make a declaration prior to fishing in any sideboarded fishery during July.

Any participant who intends to, or does, participate in any of these fisheries prior to commencing fishing in July must have adequate observer coverage on board the vessel so that all catch harvested during a sideboarded fishery will be assessed against the overall sector harvest limit. NOAA Fisheries would not provide an individual allocation of sideboard fisheries, but will establish a sector allocation.

Second, NOAA Fisheries must monitor any applicable standdowns in the BSAI and Gulf of Alaska non-pollock groundfish fisheries. These standdowns are intended to operate as sideboards, preventing rockfish participants from encroaching on other fisheries. Standdowns have a maximum length of two weeks, but could be shorter. If a participant joins a cooperative and that cooperative begins fishing the person's allocation prior to July 1, the traditional start date for the fishery, a two week standdown will apply to that participant during July. If the cooperative to which a participant belongs chooses to begin fishing the person's allocation on the traditional July opening the standdown would last either 2 weeks or until 90 percent of any annual allocations stacked with the participant's are fished. NOAA Fisheries will require participants subject to standdowns to report fishing activities during the period of the standdown and announce trips. Monitoring the 90-percent harvest requirement will be simplified because of the requirement of complete observer coverage and weighing of harvests.

Third, NOAA Fisheries must manage and monitor cooperative sideboards, which could be used to limit each cooperative to its historic catch in each of the July Gulf of Alaska groundfish fisheries other than target rockfish, in place of the standdowns. To use a cooperative sideboard, in lieu of standdowns, members of a cooperative will be required to submit to NOAA Fisheries a cooperative management plan that demonstrates that the cooperative will actively and adequately monitor harvests of members to ensure compliance with the harvest limitations of the cooperative sideboard. NOAA Fisheries has not yet developed a suite of measures that would need to be in place in order for a cooperative to manage its sideboarded fisheries without being subject to a specific standdown. Essentially, NOAA Fisheries would require a catch monitoring plan from the cooperatives sufficient to ensure that catch is adequately accounted, monitored, and reported.

Catcher Processor Cooperative

Under the catcher processor cooperative program, catcher processors would have the option of fishing an individual allocation or joining a cooperative, which would fish the collective allocations of its members in accordance with a cooperative agreement. Management (including implementation) and monitoring of fishing of these allocations will be accomplished in the manner that cooperative allocations are managed

under the catcher processor sector allocation with cooperatives alternative described above. No limited access fishery for eligible catcher processors would be created under this alternative.

Catcher Vessel Cooperative with Limited Processor Entry

Under the catcher vessel cooperative with limited processor entry program, catcher vessels would have the option of joining a cooperative (which would fish an allocation based on the history of its members) or fishing in a limited access fishery (which would receive an allocation based on the history of all non-members). The two types of allocations would require two different management approaches.

As under the catcher processor alternatives, implementation of the program will require that NOAA Fisheries determine the pool of eligible persons for the catcher vessel sector, the sector allocation and the individual histories of eligible persons. In addition, processor eligibility would be determined, based on processing histories. Cooperative agreements will be filed with NOAA Fisheries every two years, which must be reviewed for adequacy (including monitoring plan). NOAA Fisheries will be required to make annual catch allocations to cooperatives (based on member histories) and to the limited access fishery.

As under the catcher processor alternatives, NOAA Fisheries would require that all participants in the pilot program in this sector submit an annual registration in the fall prior to the year in which the fishing occurs to facilitate the incorporation of allocations in the annual TAC specifications process.

Cooperative allocations would be fished during the extended season described under the catcher processor alternatives. Fishing of exclusive allocations during an extended season will require a substantial increase in monitoring above the current levels, but because catch is processed on-shore management changes would differ from those for catcher processors. Management of allocations will require that all catch under the program be monitored. As a precursor to this monitoring, participants will need to make announced rockfish pilot program trips, to distinguish rockfish pilot program fishing from participation in other fisheries and allow deployment of adequate observer coverage. All fishing in a trip under the program would be exclusively under the program. Using this system of exclusive trips would also facilitate shoreside monitoring of offloads and account of catch against allocations. Beyond these requirements, NOAA Fisheries intends to develop monitoring programs to ensure adequate but efficient monitoring.

NOAA Fisheries intends to develop monitoring appropriate to the fishing activities of the participants. While NMFS expects that most catcher vessel catch accounting will take place shoreside, monitoring for compliance with discard and retention requirements, and sampling to determine the quantity and composition of discards will be necessary components of this program. NMFS is investigating the potential for use of video to address some of these information needs, but some level of at-sea observer coverage will be necessary for both monitoring purposes and collection of scientific data. In addition, the use of video monitoring is questionable for enforcement purposes. Resolution of issues involving chain of evidence, reliability, and admissibility in court remain to be addressed prior to use of video monitoring for some enforcement purposes. NMFS is currently engaged in a process to define monitoring information needs and evaluate alternative monitoring strategies for this program.²⁰

Monitoring allocations of halibut PSC will be problematic because NMFS would not be able to use a vessel specific rate for unobserved trips or for unobserved hauls on observed trips. It is possible that some form of fleetwide rate would have to be developed. Because of the paucity of data early in the season,

²⁰ As part of a larger ongoing alternative observer deployment project taking place in Kodiak this summer, NOAA Fisheries, in cooperation with Pacific States Marine Fisheries Commission, hopes to assess the feasibility of video monitoring of illegal discards in an environment where some discard is required. Results from this project could affect some decisions concerning appropriate monitoring.

NOAA Fisheries would probably be required to use an aggregate rate based on data from the prior year. Assuming that halibut bycatch rates remain the same as in past years, the rockfish pilot program will have an allocation of halibut PSC that would tend to frequently limit the full exploitation of target and secondary species.

An added advantage of experimentation with novel observer and monitoring practices in the rockfish pilot program is that the experimentation could provide evidence of the utility of this approach to the Council and NOAA Fisheries in the development of methods for implementing efficiencies in observer coverage and monitoring on a larger scale in forthcoming management actions, such as the comprehensive Gulf groundfish rationalization program. The development of observer and monitoring alternatives on a small scale could reduce the potential risks and provide useful lessons concerning their application in broader management settings.

In addition to the management of the exclusive cooperative allocations, NOAA Fisheries would need to manage the limited access fishery for participants that choose not to join cooperatives. The management of the limited access fishery would be the same as described under the catcher processor sector allocation with cooperatives alternative above.

In addition to the monitoring described above, all offloads will be monitored. This monitoring will ensure compliance with the harvest limitations of the various allocations under the program, as well as serving general management purposes.

Sideboards will also be managed and monitored by NOAA Fisheries for the catcher vessel sector under this alternative. Participants eligible for the catcher vessel sector will be limited to their aggregate historic catch of total catch of target species for Gulf fisheries that close because of harvest of the TAC (generally rockfish fisheries). In addition, participants in the sector will be limited to their aggregate historic catch of halibut in fisheries in the Gulf that close because of halibut bycatch (generally flatfish fisheries). Also, eligible catcher vessels will be limited to their historic catch of Pacific cod in the Bering Sea and Aleutian Islands Pacific cod fisheries. Lastly, eligible catcher vessels will be prohibited from participating in the directed yellowfin sole, other flatfish, and Pacific Ocean perch fisheries in the Bering Sea and Aleutian Islands during the month of July.

To manage and monitor this sideboard, the NOAA Fisheries would require that vessels that are subject to the sideboard to make a declaration prior to fishing in any sideboarded fishery during July. Any participant who intends to, or does, participate in any of these fisheries prior to commencing fishing in July must have adequate observer coverage on board the vessel so that all catch harvested during a sideboarded fishery will be assessed against the overall sector harvest limit. NOAA Fisheries would not provide an individual allocation of sideboard fisheries, but will establish a sector allocation.

Catcher Vessel Cooperative with Processor Association

As under the other catcher vessel alternative, participants in the catcher vessel cooperative with processor association program would also have the option of joining a cooperative (which would fish an allocation based on the history of its members) or fishing in a limited access fishery (which would receive an allocation based on the history of all non-members). As noted in the description of management under the catcher processor cooperative with limited processor entry program, these two types of allocations require different management approaches. Since the allocations and fishing activity under the two alternatives are similar, implementation and management of the fishery under this alternative is very similar to that described under the catcher cooperative with limited processor entry program above. One difference is that at implementation, NOAA Fisheries will be required to determine cooperative eligibility (i.e., processor associations) for each eligible catcher vessel participant. Sideboards under this alternative are

also the same as those described under the other catcher vessel alternative and will be managed as described under that alternative above.

Entry Level Fishery

Entry level fishery allocations totaling 5 percent of the TAC of CGOA rockfish (approximately 750 metric tons at current TACs) will be made to trawl and non-trawl catcher vessel sectors. Since the allocations to these sectors will differ, the fisheries will be managed differently.

As under the main pilot program alternatives, NOAA Fisheries would require all participants in an entry level fishery to submit an annual registration in the fall prior to the year in which the fishing occurs to facilitate the incorporation of the entry level fishery allocations in the annual TAC specifications process.

The trawl sector will be allocated 2.5 percent of the TAC of GOA rockfish in the aggregate. This allocation is to be first made from the TAC of Pacific Ocean perch. Using this approach, the trawl sector would likely be allocated only Pacific Ocean perch, as that species has accounted for in excess of half of the TAC of target CGOA rockfish in recent years. If the Pacific Ocean perch TAC declined relative to the TACs of northern rockfish and pelagic shelf rockfish, it is possible that some northern rockfish and pelagic shelf rockfish could be allocated to the entry level trawl sector. The rationale for allocating Pacific Ocean perch first to the trawl sector is that the non-trawl sector has no harvest history of the species. A relatively small allocation of Pacific ocean perch would be available for non-trawl participants at the current TACs.

The trawl allocation would be divided equally among all applicants for the entry level program. Although the number of participants in this sector cannot be predicted, 208 LLP licenses are endorsed to use trawl gear in the CGOA. Any vessels with target participation in the rockfish fishery between 1996 and 2002 are eligible for the main program, preventing their participation in the entry level program. This leaves in excess of 150 license holders that could participate in the entry level fishery. Despite the large number of persons eligible for the fishery, the trawl fishery could draw few applicants as the allocation is relatively small and potential participants have no experience in the fishery.

Each applicant for the entry level trawl fishery would receive an equal allocation from the trawl entry level sector allocation. These individual allocations would be generally managed similarly to the allocations to catcher vessels under the main program. The season for harvesting these allocations will be the same as that proposed for the main program (April 15 through August 31). To harvest an allocation, a participant would need to declare their trip as a rockfish trip. All harvests on the trip would be subject to the rules of the rockfish program and would count against the rockfish allocation. The participant would be required to comply with monitoring requirements defined for the rockfish program on that trip. The management of the entry level allocations would differ from management under the main program because secondary species would be managed under the current MRAs in the entry level fishery (see Table __ above for current MRAs). Entry level trawl allocations will require adequate and reliable monitoring of allocations, which will likely be similar to the monitoring of the main program. The monitoring must be adequate to ensure compliance with the allocation.

Given current TACs, the ability of NOAA Fisheries to effectively manage the trawl portion of the entry level fishery could be limited, if a substantial number of applications for the entry level trawl fishery are received. If the allocation to the trawl portion of the entry level fishery is unlikely to result in individual allocations that can be effectively managed by NOAA Fisheries, manageable allocations to that portion of the entry level fishery may not be possible. If this situation arises, NOAA Fisheries may choose not to open the fishery to avoid exceeding the allocation to this entry level component and the overall TAC.

The non-trawl sector will be allocated 2.5 percent of the TAC of CGOA rockfish in the aggregate. The non-trawl sector entry level fishery would be conducted on a limited entry basis, which would result in the management of that fishery in a manner similar to current management. The season for the non-trawl sector will open January 1st and remain open until the TAC is fully harvested. The ability of the non-trawl sector to harvest the TAC cannot be predicted. In the past, the non-trawl sector has had limited harvests of CGOA target rockfish, harvesting less than 20 metric tons in any year (see Table 3 and Table 4 above). The allocation of rockfish under this program will be approximately 375 metric tons. Since it is possible that the non-trawl sector may be unable to harvest this allocation, provision is included to make the unharvested portion of the allocation available to all participants in the entry level fishery (including trawl participants) at the start of the 4th quarter.

To manage trawl harvest of the remaining entry level portion at the start of the 4th quarter will require that the agency conduct a limited access fishery, similar to limited entry components of the main program. Management will require that the agency estimate the catching power of the fleet and either monitor harvests to ensure that the fishery does not overharvest the allocation or use timed openings (e.g., 12 or 24 hour openings) to limit catch of the fleet. The specific management will depend on the number of participants in the fishery and the amount of fish to be harvested. To have a reasonable estimate of the number of vessels participating in the fishery, NOAA Fisheries will require an additional application for participation in this late season fishery. The fishery will only be open to persons that participated in the earlier entry level fishery and who also apply for the late season opening. Non-trawl participants may also participate in this fishery and would likely have their catch limited by the harvest of the entry level TAC by trawlers. Given the small allocations, and the likelihood that trawl vessels could rapidly harvest any allocation, it is unlikely that the unharvested portion of the non-trawl allocation would be opened to the trawl sector.

Incidental Catch Allowance

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

Table 18 shows the annual total catch of Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish in the CGOA by trawl gear in the non-rockfish target.²¹ Catch of all three rockfish species have fluctuated greatly during this time period. For example, the lowest incidental catch of pelagic shelf rockfish was in 2003, when only 41 metric tons were harvested. In the previous year, more than 5 times that amount was caught incidentally. Similar disparities occur in the incidental harvest of both Pacific Ocean perch and northern rockfish. Based on the wide range of incidental catch, NOAA Fisheries believes that its first year ICAs would be approximately 600 metric tons for Pacific Ocean perch, 300 metric tons for northern rockfish, and 200 metric tons for pelagic shelf rockfish. These liberal allowances should be adequate to support incidental catch of rockfish in directed fisheries for other groundfish. Using these ICAs, the agency would initially manage harvests of CGOA rockfish using the MRA. If catch rates indicated that an allocation was adequate to support incidental catch through the year, NOAA Fisheries would employ its usual management measure of putting a species on prohibited species status to deter

²¹ Since non-trawl catch of rockfish is very limited, incidental catch of rockfish by trawl gear in directed fisheries for other groundfish is adequate for determining the ICA (see Table ___ above).

incidental catch and prevent rockfish bycatch from resulting in a premature closure of other directed fisheries.

Table 18. Incidental catch of Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish in CGOA trawl non-rockfish directed groundfish fisheries (1995-2004).

Species	Year										Average
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004**	
Pacific Ocean perch	573	635	384	226	352	592	323	373	557	168	418
Northern rockfish	397	267	102	173	128	235	187	255	57	114	192
Pelagic shelf rockfish*	192	169	129	146	79	171	104	222	41	36	129
Total	1,162	1,071	614	545	560	999	614	850	655	319	739

*Pelagic shelf rockfish includes dusky, widow, and yellowtail.

** 2004 data are through 10/09/04.

Source: NMFS, Alaska Region, blend databases.

2.5.2. Effects on harvest participation and fishing practices

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 is likely to be similar to current participation. Likewise, under the catcher processor sector allocation, participation in that sector will likely continue to be similar to current participation. Under the cooperative program alternatives, however, participation could change substantially, as cooperative members coordinate and consolidate fishing and distribute their harvests over a greater portion of the year. This section discusses the specific impacts on harvester participation and patterns.

Status quo

Under the status quo, the CGOA rockfish fishery would remain under its current management. Table 2 shows the number of LLP licenses with CGOA endorsements by vessel and gear type. Table 3 above shows historic participation from 1996 to 2002 by sector. Maintaining current management is likely to result in the continuation of existing fishing practices and patterns. In the current fishery, the non-trawl fishermen take 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 race for catch of rockfish when the trawl season opens in July. Typically, Pacific Ocean perch are caught first, followed by northern rockfish and pelagic shelf rockfish. In the past, catcher processors have caught more rockfish than catcher vessels. In recent years, however, the portion of the TACs caught by catcher vessels has increased and surpassed the catch of catcher processors.

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

Secondary species (such as Pacific cod, sablefish, thornyhead, shortraker, and roughey) are often harvested on separate tows from the target rockfish.²² Rockfish fishermen typically receive a higher price for these fish, but processors demand better handling and quality. To meet these demands, catcher vessels

²² Table 22 includes observer data that show the incidental catch of Pacific cod, sablefish, shortraker, roughey, and thornyheads by trawl tows targeting CGOA rockfish. These data show that incidental catch rates of these species are relatively low in tows targeting rockfish, suggesting that the incidental catch of these species in the rockfish fishery is made in tows that target the secondary species.

often separate their secondary species harvests, carrying them in iced totes, rather than in the refrigerated sea water of their holds.

Trawl catcher processors must not only harvest fish rapidly, but also must process that fish rapidly, to maintain quality and accommodate additional catch. Discards can occur if the fish is not processed quickly enough 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. With the current short seasons, 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 current management is maintained.

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. Between 1996 and 2002, 22 vessels collectively harvested less than 17 metric tons of over 16,000 metric tons harvested from the pelagic shelf rockfish fishery. Only one non-trawl vessel participated in the northern rockfish fishery, so no information on catch can be released. No non-trawl vessels participated in the Pacific Ocean perch fishery. 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. Jig participants have expressed the most interest in entry to the fisheries among non-trawl fishermen. Since small jig vessels can enter without an LLP license, it is possible that jig participation could rise if the current management is continued. Whether entry of jig vessels could substantially increase the take by non-trawl vessels cannot be predicted.

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. Currently, 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 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 remain relatively short (i.e., a few weeks at most) limiting learning time for new entrants.

Catcher processor sector allocation with cooperatives

Under this alternative, the catcher processor sector would receive a sector allocation based on historic catcher processor participation in the fisheries. The sector allocation would be divided among eligible catcher processors (holders of interim or permanent LLP licenses) based on their historic harvests. Participants could either join a cooperative, which would fish the allocation of its members in accordance with a cooperative agreement, or fish in a limited access fishery, which would fish the allocations of non-members of cooperatives. Cooperatives would be permitted to fish during an extended season. The extent to which cooperatives are likely to take advantage of that extended season is described below. The limited entry fishery would be prosecuted in early July, the same time as the existing rockfish target fishery.

Under this alternative, the catcher processor sector would receive allocations of target rockfish, secondary species, and halibut prohibited species catch. These three types of allocations are described first, followed by the fishing and participation patterns that are likely to emerge under the program.

The allocation to a sector would be based on retained CGOA rockfish in the directed fishing season by vessels in the sector from 1996 to 2002, with each vessel dropping its lowest 2 years of harvests. The history of all holders of permanent and interim LLPs would be counted toward a sector's allocation. Only the catch of vessels that have a targeted rockfish landing in the qualifying years would be considered in determining the sector allocation. The inclusion of the histories of participants with valid interim licenses at the time of implementation could be justified since holders of interim permits are allowed to participate in the current fisheries. All interim licenses are currently under appeal. Since LLP licenses can carry several area endorsements and those endorsements are not separable, the license could be interim because of a dispute unrelated to the CGOA endorsement.

Table 19 shows the allocations to the trawl catcher processor sector and the trawl catcher vessel sector. Since the table was prepared prior to the Council deciding whether to include catch of holders of interim LLP licenses or participants without LLP licenses, the table includes information on the allocations that would be made if interim license holders were excluded from the sector history or if participants without any license were included in the sector history. Several values in the table cannot be revealed because of confidentiality restrictions that require all information decipherable to be aggregated to a minimum of 4 participants. As a result, the table shows the best available information concerning eligibility and allocations to the sectors in the program.

Table 19. Sector participation, qualified history, and allocations of Central Gulf of Alaska rockfish.

Species	Qualified history	Sector	Number of participants	Qualified tons	Sector allocation (percent of qualified tons)
	Permanent LLP license holders	Trawl catcher vessel	47	19,773.0	50.0
		Trawl catcher processor	13	19,796.0	50.0
		Total	60	39,569.0	
Pacific Ocean perch	Permanent and interim LLP license holders	Trawl catcher vessel	49	*	*
		Trawl catcher processor	15	*	*
		Total	64	39,913.2	
	All historic participants	Trawl catcher vessel	50	*	*
		Trawl catcher processor	20	*	*
		Total	70	42,695.1	
	Permanent LLP license holders	Trawl catcher vessel	46	9,781.8	61.1
		Trawl catcher processor	12	6,234.9	38.9
		Total	58	16,016.6	
Northern rockfish	Permanent and interim LLP license holders	Trawl catcher vessel	48	*	*
		Trawl catcher processor	13	*	*
		Total	61	*	
	All historic participants	Trawl catcher vessel	49	*	*
		Trawl catcher processor	18	*	*
		Total	67	17,530.5	
	Permanent LLP license holders	Trawl catcher vessel	46	6,855.0	46.0
		Trawl catcher processor	12	8,043.2	54.0
		Total	58	14,898.1	
Pelagic shelf rockfish	Permanent and interim LLP license holders	Trawl catcher vessel	48	*	*
		Trawl catcher processor	13	*	*
		Total	61	*	
	All historic participants	Trawl catcher vessel	49	*	*
		Trawl catcher processor	18	*	*
		Total	67	16,090.7	

* Withheld for confidentiality

Source: NPFMC Rockfish Database 2004, Version 1

Counting only the catch of permanent LLP holders, the trawl catcher vessel sector would be allocated 50 percent of the Pacific Ocean perch fishery, 61.1 percent of the northern rockfish fishery, and 46 percent of the pelagic shelf rockfish fishery (in each case, after the allocation to the entry level fishery and the ICA). The trawl catcher processor sector would be allocated the remainder, 50 percent of the Pacific Ocean perch fishery, 38.9 percent of the northern rockfish fishery, and 54 percent of the pelagic shelf rockfish fishery.

Since total tonnages can be revealed in some instances for all participants, one can determine the percent of qualified tons that are from participants that do not hold permanent LLPs to assess the maximum possible effect of including interim LLP holders in a sector's history. Using this approach it can be concluded that catch by vessels that hold interim licenses is less than 1 percent of total qualified catch in the Pacific Ocean perch fishery. Affects on the other two fisheries cannot be predicted. Although not determinative of the distributions, the two trawl catcher vessels with interim LLP licenses have participated in the other two fisheries, while only one trawl catcher processors without an interim license has participated.

The sector allocation would be divided among cooperatives and the limited access fishery. Each person eligible for the catcher processor sector could choose to either join a cooperative that would receive an

annual allocation based on the histories of its members or enter a limited access fishery that would receive an allocation based on the histories of all catcher processor participants that chose not to join a cooperative. The allocation of each rockfish species to each cooperative would be the percent of total qualified pounds of the species harvested by its members from 1996 to 2002, with each qualified participant dropping its two years of lowest harvests of the species.

The numbers of participants in the catcher processor sector in the different fisheries and simple statistics concerning their allocations are shown in Table 20.²³ The table also shows simple statistics using 2002 as a base year for standardizing the allocations across species. The 2002 base year will be used for applying caps to cooperatives and individuals under the program. Fifteen catcher processor licenses are estimated to be eligible to receive an allocation in the CGOA rockfish fisheries.

Table 20. Mean, median, and four largest allocations by Central Gulf of Alaska rockfish species and total allocation, using 2002 as a base year.

Species	Sector	Characteristics of allocations to permanent and interim license holders			Eligible permanent and interim license holders	Eligible permanent license holders
		Mean allocation	Median allocation	Average of four largest allocations		
Northern rockfish	Catcher vessels	2.1	1.4	7.1	48	46
	Catcher processors	7.7	4.5	15.6	13	12
Pacific Ocean perch	Catcher vessels	2.0	1.6	4.5	49	47
	Catcher processors	6.7	4.5	15.6	15	13
Pelagic shelf rockfish	Catcher vessels	2.1	1.5	6.5	48	46
	Catcher processors	7.7	5.6	16.7	13	12
All - 2002 base	Catcher vessels	2.0	1.8	5.3	49	47
	Catcher processors	6.7	4.8	14.1	15	13

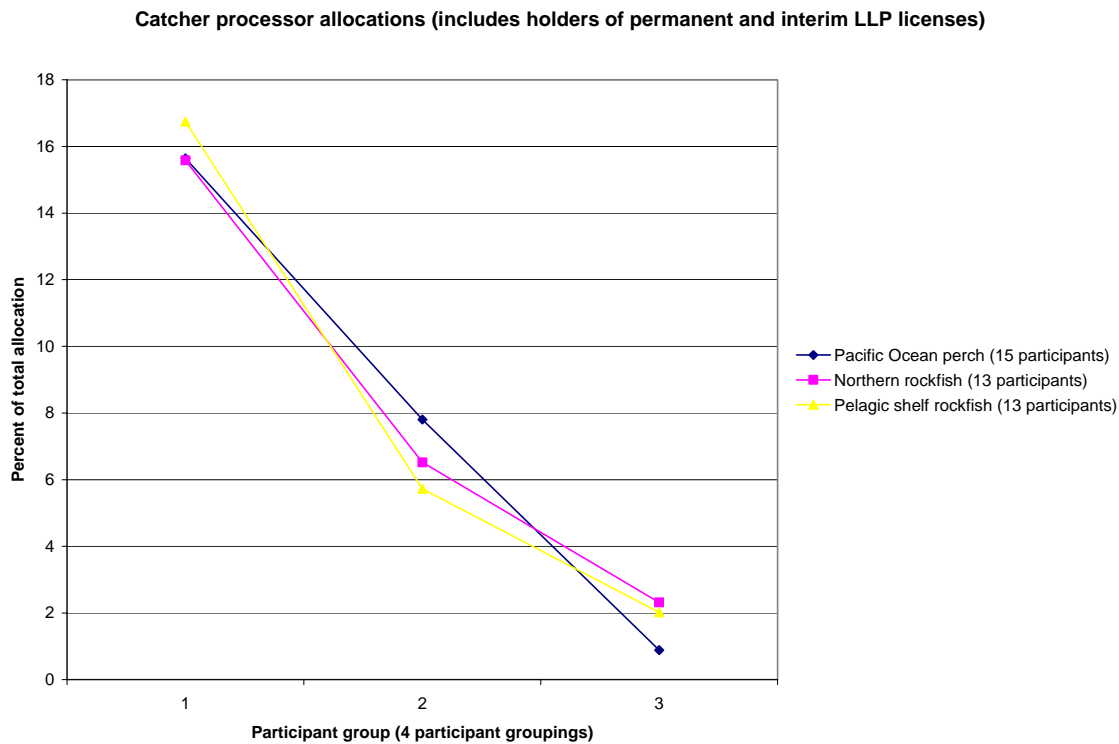
Source: NPFMC Rockfish Database 2004, Version 1

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

The table and figure show that the four largest allocations for each species are approximately 60 percent of total allocation for the species. In addition, the four largest allocations in the aggregate are slightly less than 60 percent of the total allocation of CGOA rockfish using 2002 as a basis. Notwithstanding the concentration of large allocations, since the catcher processor sector has relatively few participants, the mean allocations are all approximately 5 percent. The figure shows that approximately 5 participants in the sector will receive allocations of less than 3 percent of the sector's northern rockfish and pelagic shelf rockfish, while approximately 7 participants will receive allocations of less than 2 percent of the sector's Pacific Ocean perch.

²³ Appendix 3 lists vessels that appear to be eligible for the different sectors, based on the requirement of one targeted rockfish landing during the qualifying years.

Figure 1. Allocations to catcher processors by Central Gulf of Alaska rockfish species



Under the program, no vessel will be permitted to harvest in excess of 60 percent target rockfish allocated to the catcher processor sector allocation using 2002 as a basis (with any vessel exceeding that level of participation grandfathered). Since the four largest allocations in the sector are less than 60 percent of the sector’s allocation, it is clear that no vessel approaches this level of harvests. Further information cannot be released because of confidentiality limitations. In addition to the vessel caps, catcher processor sector participants are limited to holding and using no more than 20 percent of the annual allocation of all species combined using 2002 as a basis for aggregation (unless grandfathered).²⁴ This cap would be imposed on an individual and collective basis (similar to the halibut and sablefish IFQ caps). Using this approach, a person is credited with full ownership of direct share holdings and ownership in proportion to corporate ownership for all holdings indirectly held. Because of limited information concerning ownership of licenses and confidentiality, aggregation of holdings based on named LLP license holders provides no additional information concerning consolidation of share holdings beyond that shown and described above.

In addition to the rockfish allocations, allocations would be made to the catcher processor sector for three secondary species (sablefish, shortraker/rougheye, and thornyhead) that are typically harvested when harvesting rockfish.²⁵ The three allocations of secondary species under this alternative would be based on catch of the secondary species while targeting rockfish. Specifically, the allocation would be a portion of

²⁴ As described in deliberations this cap is intended to limit only the holdings of an individual and the shares that an individual can bring to a cooperative. Once an annual allocation is made to a cooperative, the allocation could be fished in accordance with the cooperative agreement, even if more than the individual cap amount were fished on a single vessel. Harvest from a single vessel, however, would be subject to the 60 percent vessel cap.

²⁵ Pacific cod is also considered a secondary species under the program. For catcher processors, however, Pacific cod would be managed under a revised MRA. For catcher vessels, Pacific cod would be managed using a secondary species allocation similar to those of sablefish, shortraker, rougheye, and thornyhead.

the TAC equal to the average annual percentage of the total catch of the secondary species made by the sector. In other words, the average annual percentage of total catch (including discards) of the sector divided by total catch from the CGOA (including discards) multiplied by the TAC for the year. The rationale for including discards in making the allocations is that secondary species may not be targeted in the rockfish fishery, so some discards may have occurred. The annual allocation to the sector would be the share of the total catch of the secondary species taken by the sector in the CGOA rockfish fisheries times the annual TAC for that secondary species. Table 21 shows the portion of each secondary species TAC that would be allocated to the different sectors. Notably, the table includes separate allocations of shortraker rockfish and rougheye rockfish, which will be managed as two separate species in future years. Historically, these two species had been managed using a single, combined TAC. In most cases, the allocations exceed average historic harvests. Pacific cod allocations, however, would be smaller than average historic harvests. The relatively small allocation to the catcher processor fleet has led the Council to include different provision for Pacific cod harvest by catcher processors in the rockfish program.

[For shortraker and rougheye – see discussion paper for analysis of option to allocate to catcher vessels based on highest harvest in any one of the qualifying years. Discussion in this section will be modified as necessary.]

For catcher processors, Pacific cod would be managed under a revised MRA of 4 percent. Historic harvest of Pacific cod by the catcher processor sector in the rockfish fishery have averaged less than 3 percent of the Pacific cod TAC. To avoid constraining participants with this relatively small allocation of Pacific cod, a revised MRA will be used to limit Pacific cod harvests by catcher processors. The MRA would be reduced from its current level of 20 percent to 4 percent.

Table 21. Rockfish Pilot Program: Secondary Species Allocation by Sector - Retained over Retained - retained harvest by species in targeted rockfish fishery divided by retained CGOA harvest

Secondary Species/Sector ¹	2005 TAC (mt)	Allocation Proportion	Allocation (mt)	Average Harvest 1996-2002
Pacific cod CV	25,086	2.09%	525.2	613.4
Pacific cod CP ²	25,086	0.20%	50.9	72.9
Sablefish CV	7,250	6.31%	457.5	350.8
Sablefish CP	7,250	4.30%	311.9	239.9
Shortraker/Rougheye CV		5.91%		33.1
Shortraker	324		19.1	
Rougheye	557		32.9	
Shortraker/Rougheye CP		59.87%		327.9
Shortraker	324		194.0	
Rougheye	557		333.5	
Thornyhead CV	1,010	10.85%	109.6	41.5
Thornyhead CP	1,010	22.94%	231.7	83.6

Source: 1996-2002 NMFS WPR data for CP vessel harvests. 1996-2002 ADF&G Fish Tickets for CV vessel harvests.

- 1 The average harvest/year for the 1996-2002 period includes retained harvest by vessels with permanent LLP license status.
- 2 Note that Pacific cod will not be allocated to the catcher processor sector.

Halibut PSC will also be allocated to the catcher processors through a two step process. In the first stage, an allocation would be made to the pilot program as a whole, based on historic average annual usage of halibut PSC by the rockfish fisheries. This allocation would then be divided between the sectors.

Table __ shows the allocation of halibut PSC to the rockfish fishery based on the historic average usage. The table also shows the division of that allocation between the two sectors. See discussion paper for analysis of this provision – will be inserted in draft after this meeting

[provision here will be included – depending on Council selection of option for halibut allocation at this meeting]

Description of participation and fishing patterns

Since fishing patterns in the cooperative and the limited access fisheries will likely differ, these fisheries are described separately. In addition, catcher processors may transfer their annual allocations to catcher vessel cooperatives. The potential for allocations to be transferred to catch vessels is also discussed in this section.

Historic harvests of CGOA rockfish are used to make allocations, so distribution of CGOA rockfish allocations both to and within the catcher processor sector will be similar to the historic distribution of harvests during the qualifying years. The number of persons receiving allocations is approximately twice the average annual participation in the fisheries, showing that some participants have moved in and out of the fisheries over time.

Within each cooperative, it may be anticipated that each member would receive revenues based on the allocation that the person brings to the cooperative, with participants that fish shares of others receiving compensation for their fishing expenses. Fishing within a cooperative, however, could be far more concentrated than the underlying allocations. The two most likely scenarios that would lead to consolidation of rockfish fishing on fewer vessels than receive allocations arise out of the choices of persons that receive small rockfish allocations under the program.²⁶ First, persons eligible for the program that receive relatively small allocations could choose to join a cooperative allowing other members of the cooperative to fish their allocations. Using this approach would allow some of these participants to avoid potential added costs of observers and monitoring equipment (at least in the short term). In addition, the participants' fishing activity would be simplified by not moving from fisheries for other species to fish a relatively small rockfish allocation.²⁷ A second possibility is that persons eligible for the sector with small allocations could choose to opt out of the program allowing their allocations to be redistributed to other members of the sector. Participants that opt out would not be required to standdown in fisheries in which they have met a minimum participation threshold of two years of the seven qualifying years. Consolidation of these small allocations alone would result in approximately 5 to 7 vessels participating in the sector each year.

In addition to the consolidation of relatively small rockfish allocations, other members of the sector could decide to consolidate their rockfish allocations to realize efficiencies in the rockfish fisheries and other fisheries. A cooperative that uses relatively few members to harvest its annual allocation could potentially minimize observer and monitoring equipment costs. Cooperatives that are able to manage their own sideboards would be permitted to harvest its allocation over the longer season, freeing its members to

²⁶ Based on 2002 TACs, 4 participants in the catcher processor sector would receive target rockfish allocations of less than 50 metric tons.

²⁷ These cooperative participants would then be limited in other fisheries in July by both a sector sideboard and either a cooperative sideboard managed by the cooperative or a standdown, if the cooperative does not develop a plan for managing its sideboard that is acceptable to NOAA Fisheries.

enter other fisheries in the beginning of July (without a standdown). This ability to enter other fisheries should lead to cooperatives harvesting their allocations either earlier or later than the traditional July opening, to free their members to compete in other fisheries that open early in July. The cooperative, however, would only be permitted to harvest its historic share from those other fisheries, limiting any potential impact on others. Because of this flexibility, rockfish catcher processor cooperative participants should be expected to fully harvest their historic share (sideboard amount) from these other fisheries, provided that cooperatives are able to develop sideboard monitoring plans that are satisfactory to NOAA Fisheries.

Although cooperatives that manage their own sideboards can be expected to harvest their allocations outside of the traditional early July season, the exact timing of their CGOA rockfish fishing will likely depend on the operational needs of cooperative members and their fishing success. For example, a cooperative may select fishing time to facilitate maintenance or other individual needs of its members. Low catch rates of rockfish or high rates of incidental catch of secondary species or halibut could also lead a cooperative to change its timing of rockfish targeting. Some longtime participants in the fishery suggest that rockfish aggregations are at their greatest in the summer months. If participants observe relatively high aggregations (and catch rates) in summer months, it is likely that their harvests will be concentrated in the summer regardless of whether the season is extended into the spring and fall. Catcher processors may have less incentive to fish outside of the summer months than catcher vessels, as most produce only frozen head and gut and whole products and are less likely to attempt to serve fresh fish markets that may be more accessible to the shore-based fleet.

The allocations of secondary species are based on total harvests made in the fisheries from 1996 to 2002. Since the allocation is the portion of the total catch made by the catcher processor sector in the rockfish fishery, the allocation is intended to credit harvesting at its historic rate. Secondary species are required to be retained, with all harvests counting against the allocation of the cooperative. The allocation of each secondary species to a cooperative will operate as a hard cap on the total harvests by the cooperative, so a cooperative that has fully harvested any one of its secondary species allocations would be prohibited from any additional harvest of CGOA rockfish or related allocations under the program.

These secondary species allocations might appear to be constraining because of the rigid cap. Yet, in all cases the estimated allocations of secondary species at current TACs would exceed average harvests from 1996 to 2002. Observer data also suggest that in only rare instances would secondary species allocations constrain participants.

Table 22 shows incidental catch of secondary species²⁸ in observed trawl tows that target CGOA rockfish between 1996 and 2003. The table shows amounts of secondary species in hauls by percentile. For example, the rockfish targeting haul at the 85th percentile in terms of Pacific cod, included approximately 6 pounds of cod for each one-hundred pounds of rockfish. For all species, over 50 percent of the hauls had no catch of secondary species. In addition, only sablefish and Pacific cod were observed in more than 25 percent of the tows. The total catch of each secondary species in all trawls combined is in all cases less than 3 percent of the total catch of targeted rockfish catch.

Although the secondary species allocations are not expected to be constraining in some instances they could limit rockfish harvests. If participants with relatively small rockfish allocations were to have tows with incidental catch of secondary species in the highest percentiles, it is possible that the harvest of secondary species could prevent their harvest of target rockfish. In addition, since the incidental catch allocations are based on fleet averages, relative to target rockfish, it is possible that some participants may

²⁸ Pacific cod is also included in the table, since that species is allocated as a secondary species to catcher vessels under the catcher vessel pilot program alternatives.

either have high incidental catch rates in general or a different distribution of incidental catch than the fleet average. These participants could be constrained by the secondary allocations, if they are unable to reduce incidental catch rates of secondary species. Also, if participants attempt to extend fishing over a longer season, it is possible that higher incidental catch rates of secondary species could constrain their rockfish harvests. If high incidental catch in other parts of the year is perceived as limiting, it is likely that participants would choose to concentrate their fishing under the program closer to the traditional season. Cooperatives should prove useful for addressing any constraints arising from the secondary species allocations. By distributing secondary species allocations among the cooperative members to cover cases of higher than historic average incidental catch, the cooperatives should allow members to fully harvest their allocations of target rockfish. These redistributions of secondary species allocations, however, are likely to cost the participants that are constrained by those allocations. Since secondary species historically bring higher revenues per pound than the target rockfish, it is likely that the revenues generated by the harvest of secondary species allocations will accrue to the person that holds the license with the history leading to the allocation. On the whole, the allocations of secondary species should not constrain harvests of target rockfish, unless the rates of incidental catch of secondary species in the rockfish fishery change substantially.

Although the program is intended to rationalize the rockfish fishery, it is important to recognize the value of secondary species harvests to the participants in the rockfish fishery. Historically, all of the secondary species have generated more revenues per pound for participants than the target rockfish. All of the alternatives permit persons to harvest secondary species allocations independent of the harvest of rockfish allocations. Given the value of the secondary species allocations and the harvest flexibility, participants can be expected to harvest their entire allocations of secondary species. Depending on incidental catch rates, it is likely that some cooperatives will choose to reserve a portion of the allocation of each secondary species until all of the target rockfish is harvested, after which all remaining secondary species allocations are harvested.

Table 22. Incidental catch of secondary species in observed trawl hauls targeting Central Gulf of Alaska rockfish (1996-2003).

Incidental catch species	Trawl hauls with Central Gulf rockfish targets	Hauls with bycatch species	Weight of incidental catch species	Weight of Central Gulf rockfish	25th Percentile	50th Percentile	75th Percentile	85th Percentile	95th Percentile
CGOA rockfish	2846	2846	44,973,482	44,973,482	1	1	1	1	1
Pacific Cod	2846	1389	760,898	19,227,273	0	0	0.0295	0.05895	0.1659
Sablefish	2846	1149	1,254,453	16,649,387	0	0	0.02854	0.08095	0.26119
Thornyhead	2846	700	364,015	14,843,165	0	0	0	0.00811	0.05825
Shortraker	2846	91	450,182	2,286,774	0	0	0	0	0
Rougheye	2846	32	38,494	945,896	0	0	0	0	0
Shortraker/Rougheye ⁽¹⁾	2846	13	50,960	517,809	0	0	0	0	0

Source: 1996-2003 GOA Observer data, with data calculations by NPFMC.

Central Gulf rockfish includes Pacific Ocean perch, northern rockfish and pelagic shelf rockfish.

(1) where shortraker rockfish and rougheye rockfish were combined in the observer data

As with secondary species allocations, halibut PSC allocations are based on historic halibut catch in the rockfish target fishery. Unlike current management, the specific allocations of halibut PSC could close the fishery for individual participants, in the event that bycatch of halibut PSC exceeds historic rates. Changes in the rates of halibut bycatch cannot be predicted since the most significant change in fishing activity is likely to be a change in the timing of harvests under the extended season. If participants observe an increase in the bycatch of halibut outside of the historic season, they are likely to limit their fishing activity under the program to the historic season. On the other hand, if bycatch of halibut can be

maintained at or below historic levels at other times of the year, it is possible that some participants would extend fishing to different times of the year. As with secondary species allocations, each cooperative is likely to pool halibut PSC allocations of its members to ensure that the cooperative's rockfish and secondary species allocation can be fully harvested.

Since any catcher processor limited access fishery will be managed in a manner similar to the current fishery, that fishery is likely to resemble the current fishery, with a few notable differences. Participants can be expected to race for catch during the limited time that the fisheries will remain open. First, the catch of secondary species will be limited by reduced MRAs intended to limit total catch of the secondary species to the allocated amount. These reduced MRAs are likely to act as a substantial deterrent to participation in the limited access fishery, since secondary species are considerably more valuable than target rockfish. If the fishery receives a small allocation, it is possible that the fishery would be prosecuted in a timed opening (i.e., 12 or 24 hours) to keep total harvests under the allocation to the fishery. The constraints on fishing under the limited access management, together with the low membership threshold for cooperative formation (2 licenses) will likely lead all catcher processors that choose to fish under the program to join cooperatives.

Catcher processors can also transfer their annual allocations to catcher vessel cooperatives, but would not be permitted to receive catcher vessel annual allocations. The extent of any transfers from catcher processors to catcher vessels cannot be predicted with any certainty. Transfers to the catcher processor sector are most likely to occur between catcher processors that have affiliations with the shore-based sector. In addition, transfers to the shore-based sector could be made from catcher processors that will receive relatively small allocations. The potential for transfers to catcher vessels will increase, if participants in the shore-based sector are able to develop markets for higher quality or higher processed products that cannot be served by the offshore fleet that produces mostly frozen head and gut and whole products.

Catcher processor cooperative

Under the catcher processor cooperative alternative, an allocation is made to the catcher processor sector using the same calculations as under the catcher processor sector allocation with cooperatives alternative. Allocations of secondary species and halibut PSC are also the same under this alternative. Allocations of target rockfish, secondary species, and halibut PSC within the sector are also quantitatively the same under this alternative. Table 19, Table 20, and Figure 1 describe the history allocations of target rockfish to the sector and individuals. Secondary species and halibut PSC allocations are as described under the other catcher processor alternative. This alternative, however, differs from the sector allocation alternative in that eligible catcher processors that choose not to join a cooperative would receive an individual allocation instead of being eligible for a limited access fishery. No limited access fishery would exist under this alternative.

Description of participation and fishing patterns

Participation and fishing patterns under this alternative are likely to be very similar to those under the catcher processor sector allocation alternative. Cooperative members are likely to fish outside of the traditional season to ensure that they are able to participate in other fisheries that open early in July and harvest their historic share from these other fisheries. The distribution of fishing is likely to depend on the ability of the participants to successfully target rockfish, without exceeding allocations of secondary species and halibut PSC. Market considerations could also influence choices of fishing times. Allocations of secondary species are likely to be fully harvested given the flexibility of participants to harvest those allocations independent of target rockfish.

Holders of small allocations are likely to consolidate their allocations with others to achieve harvest efficiencies or, in some cases, may opt out of the program to avoid potential restrictions from sideboards, if they are unable to come to terms with potential cooperative partners.

Although the opportunity exists for eligible catcher processors to fish individual allocations, the low threshold for cooperative formation (2 licenses) is likely to lead to all participants that choose to remain in the program to join cooperatives. Since only members of cooperatives that meet the minimum membership threshold will be permitted to transfer annual allocations, the potential benefits from cooperative membership create a strong incentive for cooperative membership. The relatively low threshold, however, could lead to more cooperatives with fewer members resulting in relatively more vessels fishing rockfish.

Catcher vessel cooperative with limited processor entry

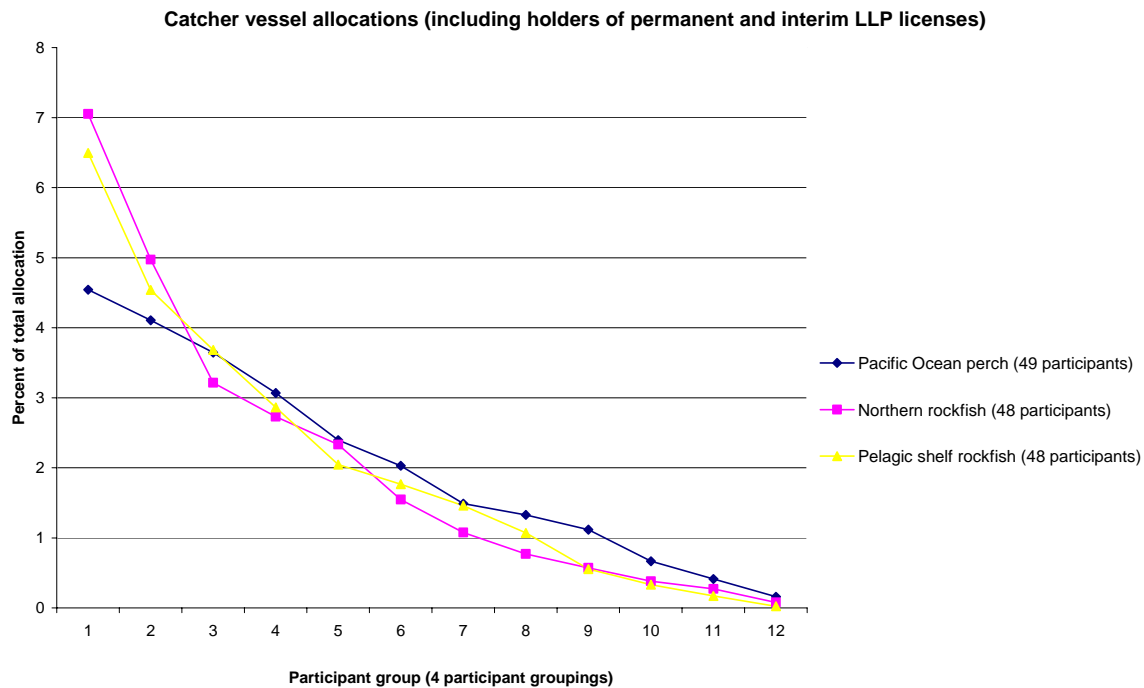
Under this alternative, an allocation to the catcher vessel sector would be made based on historic catch of the sector during the qualifying years, in the same manner as the allocations described and estimated under the catcher processor sector allocation alternative. In addition to the catcher processor sector allocation, Table 19 above shows the allocation to the catcher vessel sector under this alternative. Similarly, allocations of secondary species and halibut PSC to the catcher vessel sector would be made under the same terms as described in the catcher processor sector allocation alternative. Estimates of those allocations are shown in Table 21 for secondary species and **Table ___ above for halibut PSC [to be added – see discussion paper]**. One distinction between the catcher vessel sector and the catcher processor sector is that Pacific cod will be allocated as a secondary species to the catcher vessel sector (as shown in Table 21).

After the catcher sector allocation is determined, allocations of histories would be made to eligible LLP license holders in the catcher vessel sector. To be eligible for an allocation, a person must hold either an interim or permanent LLP license at the time of the allocation and have at least one targeted landing of CGOA rockfish between 1996 and 2002. The allocation of history to a license would be based on the catch history of vessels associated with the license from 1996 to 2002, best 5 of 7 years. The allocation of each target species to a license holder will be equivalent to the license holder's proportion of the sector history. So, a vessel with one percent of the qualified pounds of CGOA Pacific Ocean perch of the catcher processor sector would receive 1 percent of the catcher processor sector allocation of that species.

The numbers of participants in the catcher vessel sector in the different fisheries and simple statistics concerning their allocations are shown in Table 20. The table also shows simple statistics using 2002 as a base year for standardizing the allocations across species. The 2002 base year will be used for applying caps to cooperatives and individuals under the program. Forty nine licenses are estimated to be eligible to receive an allocation in the CGOA rockfish fisheries.

The distribution of catcher vessel share allocations in the different target fisheries are shown in Figure 2. Allocations are aggregated into groups of four to maintain confidentiality, with vessel groupings made in descending order from the largest estimated allocation to the smallest allocation. The last and smallest grouping contains between 4 and 7 estimated allocations, since at least 4 persons' activities must be included under confidentiality rules. The estimated allocation shown for each 4-vessel group is the average allocation to members of that group. Allocations are shown as shares of the total harvest allocation. Each legend shows the total number of vessels that would receive an allocation in each fishery. Because allocations are averages, it is possible, particularly in the grouping with the largest allocation, that the largest allocation to a single vessel is significantly different from the average of those four vessels.

Figure 2. Allocations to catcher vessels by Central Gulf of Alaska rockfish species.



The table and figure show that the four largest allocations to catcher vessel average approximately 5.3 percent of the total allocation of rockfish (using the 2002 index year). The average of the largest four allocations of northern rockfish is slightly larger, but still only approximately 7 percent of the total catcher vessel sector allocation. The median allocation is approximately 1.4 percent of the sector allocation (using the 2002 index year).

Under the program, no person will be permitted to hold or use in excess of 5 percent of the catcher vessel sector allocation.²⁹ Participants with historic harvests in excess of this cap would be grandfathered. Table 20 shows that the four largest allocations in the sector currently exceed this allocation. In addition, that table does not show specific ownership of licenses, but only the allocations to each license. LLP license ownership files show that some participants hold more than one license. Aggregation of allocations to holders of multiple licenses show that five persons would exceed the cap (based on the limited available information). The limited data available and confidentiality limitations prevent disclosure of additional information concerning the number of persons over the ownership cap. These persons would be prevented from acquiring any additional interest in the fishery, but would be permitted to retain their existing interests. In addition, no cooperative may control or hold more than 30 percent of the catcher vessel sector allocation. Since catcher vessels cooperatives are free to form among catcher vessel participants that are able to come to terms, this provision could prevent the sector from forming fewer than four cooperatives. Whether the limitation would actually prevent any consolidation of allocations within the sector cannot be predicted.

²⁹ As described in deliberations this cap is intended to limit only the holdings of an individual and the shares that an individual can bring to a cooperative. Once an annual allocation is made to a cooperative, the allocation could be fished in accordance with the cooperative agreement, even if more than the individual cap amount were fished on a single vessel. A cooperative, however, could not receive in excess of 30 percent of the aggregate cap in any instance.

Allocations of both secondary species and halibut PSC within the catcher vessel sector would be in proportion to target rockfish history. Using this approach, total qualified pounds of rockfish history (i.e., all three rockfish allocations) would determine the allocation of secondary species.

Catcher vessel sector participants would be permitted to join cooperatives with each cooperative receiving an annual allocation based on the qualified history of its members. A cooperative would be required to have at least 4 members. Non-members of cooperatives would be permitted to fish in a limited access, competitive fishery open to catcher vessel participants eligible for the program that do not join a cooperative. The allocation to the competitive fishery will be based on the histories of participants eligible for the program who choose not to join a cooperative. The annual allocation to the limited access fishery would be reduced by 20 percent. This reduction would be redistributed to catcher vessel cooperatives in proportion to the histories of their members.

Description of participation and fishing patterns

Participation and fishing practices of the catcher vessel sector are likely to change substantially from the status quo. Because fishing patterns in the cooperative and the limited access fisheries will likely differ, these fisheries are described separately.

As with catcher processors, historic harvests are used to make allocations, so distribution of allocations both to and within the catcher vessel sector are similar to the historic distribution of harvests during the qualifying years. Annual participation records show that between 30 and 35 catcher vessels participated in the fisheries each of the qualifying years. The number of persons receiving allocations is estimated at 47, more than 10 persons greater than average annual participation. The number of persons fishing under this alternative is likely to be fewer than the number of allocations and could be fewer than the participation levels of recent years. Consolidation within cooperatives will be the greatest contributor to the reduction in participation.

Since cooperative formation requirements are relatively minimal under this alternative (four qualified participants), it is likely that most persons eligible for the catcher vessel sector will join cooperatives. To save on observer coverage and operational costs, it is likely that most cooperatives will consolidate harvests to some extent. Cooperatives are likely to distribute revenues based on the allocation that the person brings to the cooperative, with fishing vessels compensated for their expenses.

Under an extended season, cooperative fishing is likely to take place outside of the traditional early July season. As with the catcher processor cooperatives, timing of fishing CGOA rockfish allocations will depend on the particular operational needs of members, market opportunities, and fishing success. While success in the fishery cannot be predicted, rockfish targeting should be expected to be concentrated during periods of the year when high catch rates of rockfish and low catch rates of secondary species and halibut occur. As noted earlier, some participants in the fishery suggest that rockfish aggregations are at their greatest in the summer months.

Fishing outside the season could provide an opportunity for some participants to try to serve markets (including a possible fresh market) that have been historically impossible to access because of the timing of the season. In addition, slowing of the race for fish will allow harvesters to focus more on improving quality of their landings. If higher quality production generates higher revenues, participants can be expected to adopt fishing techniques that improve quality, such as reducing total catch in each tow and improved icing of catch. Fishing costs could rise, but only for a more than commensurate rise in revenues.

Under this alternative, fishermen will have the flexibility to make deliveries to any qualified processor. Since six processors qualify (see below), cooperatives are likely to solicit competition for landings during

the extended season. Patterns of deliveries cannot be predicted, but it is likely that cooperatives could deliver to more than one processor to take advantage of different market opportunities.

Cooperatives will also have an incentive to consolidate catch and fish outside of the traditional July time period to ensure that cooperative members have access to other July fisheries that their members have historically fished. Catch by rockfish catcher vessel participants will be limited in those fisheries by aggregate sideboards to limit potential impacts on others. Rockfish catcher vessel participants, however, could compete among themselves for their share of the sideboard. It is possible that the cooperatives could reach an intercooperative agreement to limit catch to their own historic portion of the sideboard. Successfully reaching such an agreement will require most or all members of the sector and provision for monitoring compliance with the agreement. The potential for reaching such an agreement cannot be predicted.

As with catcher processors, the allocations of secondary species could appear to constrain the fleet, but are unlikely to prevent the harvest of rockfish by cooperatives. Since allocations are based on historic portion of the total catch made by the sector in the rockfish fishery, the allocation should be adequate to support the fleet's harvest of secondary species in the absence of any substantial changes in the TACs or changes in incidental catch rates. Secondary species are required to be retained, with all harvests counting against the allocation of the cooperative. As noted in the discussion of the catcher processor alternatives, observer data suggest that in only rare instances would secondary species allocations constrain participants in the rockfish fishery.

Participants that receive relatively small rockfish allocations that have tows with high incidental catch of secondary species could quickly exceed a secondary species allocation. Also, participants attempting to target rockfish outside of the traditional early July season could have incidental catch rates that differ from historic rates. Participants that have high incidental catch rates during these other parts of the year are likely to limit their rockfish fishing at those times to avoid the constraint of the allocation. Cooperatives should help members avoid constraining allocations by providing information to members about incidental catch rates and by pooling allocations to prevent the allocation from constraining harvests of rockfish allocations. Secondary species allocations in the fishery can be expected to be fully harvested, because of their value (which is generally higher than that of target rockfish) and because harvesters have the flexibility to harvest these allocations independently of target rockfish.

Since each cooperative will receive an allocation of halibut PSC, it is possible that halibut bycatch could close the fishery for a cooperative, in the event that bycatch exceeds historic rates. Changes in the rates of halibut bycatch cannot be predicted since the most significant change in fishing activity is likely to be a change in the timing of harvests under the extended season. If participants observe an increase in the bycatch of halibut outside of the historic season, they are likely to limit their fishing activity under the program to the historic season. On the other hand, if bycatch of halibut can be maintained at or below historic levels at other times of the year, it is possible that some participants would extend fishing to different times of the year. Pooling of allocations in cooperatives should help participants from being constrained by halibut PSC allocations.

The catcher vessel limited access fishery will be managed in the same manner as the catcher processor limited access fishery described above. Participants can be expected to race for catch during the short season, with managers closing the fishery when they estimate that the limited access TAC has been caught. Secondary species MRAs will be reduced from current levels to limit total catch of the secondary species to the allocated amount. These reduced MRAs for valuable secondary species are likely to act as a substantial deterrent to participation in the limited access fishery. A further deterrent will arise from the 20 percent reduction of all allocations to the limited access fishery. Since cooperative formation simply requires four members and since all cooperatives are required to accept membership of any person

eligible for the cooperative subject to the same terms and conditions governing other members, it is unlikely that anyone will choose to fish in the limited access fishery.

Catcher vessel cooperative with processor associations

Catcher vessel participation and fishing patterns under this alternative are likely to be similar to that described under the catcher vessel cooperative alternative with limited processor entry, with a few significant differences. Allocations will be determined using the same eligibility requirements and qualifying years, so will be the same as those described above. In addition, most of the rules governing catcher vessel participation under this alternative are the same as the rules governing participation under the other catcher vessel pilot program alternative. Yet, a few critical differences in the rule of this alternative could result in some substantial changes in participation and fishing patterns. Specifically, under this alternative most harvesters are eligible to join a single cooperative, which would be required to associate with the processor to which the harvester delivered the most rockfish during the processor qualifying years. A single cooperative would be permitted to associate with each qualified processor. Cooperative formation would require holders of 75 percent of the history eligible to join the cooperative.

As noted earlier no cooperative would be permitted to control in excess of 30 percent of the sector allocation of target rockfish using 2002 as an index year. Table 23 shows the number of qualified processors by the number of associated LLP licenses. The table shows a variety of processors, including some with 5 or fewer potentially associated licenses and 2 with 10 or more associated licenses. In addition, between 5 and 6 licenses that are eligible for allocations have no deliveries to a qualified processor. These license holders would be permitted to join any cooperative. Table 24 shows the number of eligible processors by the number of associated harvesters. The table shows that no processor would have associated harvesters that hold 30 percent or more eligible history. Consequently, no cooperative would have members that historically harvested in excess of 30 percent of the qualified history.

Table 23. Number of qualified processors by number of associated LLP licenses and number of LLP licenses without deliveries to a qualified processor.

	Number of qualified processors with				Number of LLPs with no deliveries to a qualified processor	Allocation to LLPs without deliveries to a qualified processor
	no associated LLPs	5 or fewer associated LLPs	more than 5 and fewer than 10 associated LLPs	10 or more associated LLPs		
Pacific Ocean perch	0	3	1	2	6	3.0 percent
Northern rockfish	0	3	1	2	5	1.5 percent
Pelagic shelf rockfish	0	3	1	2	6	2.1 percent

Source: NPFMC Rockfish Database 2004, Version 1

Table 24. Number of processors by allocation to associated harvesters.

	Number of processors associated with LLPs holding more than		
	30 percent of all catcher vessel history	20 percent of all catcher vessel history	10 percent of all catcher vessel history
Pacific Ocean perch	0	*	4
Northern rockfish	0	*	5
Pelagic shelf rockfish	0	*	5
Total - 2002 index	0	*	5

* Withheld for confidentiality.

Source: NPFMC Rockfish Database 2004, Version 1

Description of participation and fishing patterns

Fishing within cooperatives is likely to be similar to that described for the other catcher vessel alternative. Cooperatives, however, will be associated with a single processor. The terms of the cooperative agreement, and consequently, the cooperative/processor association are subject to negotiation between the

cooperative members and the processor. Given the processor's involvement in this contract, it is likely that each cooperative will have limited latitude to pursue markets for their landings beyond the single associated processor. The implications of these rules for the temporal distribution of fishing (and landings) cannot be predicted. Planning of fishing activity, however, will likely be more coordinated with the associated processor, which could limit the ability of harvesters to pursue the best market opportunities by changing timing of fishing. Each cooperative is likely to pattern its fishing to serve the markets pursued by its associated processor. The overall effects of the processor associations on timing of fishing cannot be predicted.

The cooperative formation rule, together with the limitations on cooperative eligibility and the requirement of a processor association, could have some impact on whether some participants choose to join a cooperative. Specifically, since each participant will be eligible for a single cooperative that must associate with a particular processor and cooperative formation requires 75 percent of the history eligible for a cooperative, the holders of that supermajority of history and the processor are likely to control the terms of the cooperative agreement. While both the cooperative and the processor will realize some benefit from more inclusive membership, it is possible that a cooperative agreement that suits the supermajority and the processor may not be agreeable to some minority participants. Cooperative membership, however, is likely to be favored by most participants in the program because of the reduced MRAs and 20 percent reduction in allocations to the limited entry fishery.

Entry level fishery

Since the limited entry fishery is comprised of a trawl sector and a non-trawl sector, each with different management, the participation and fishing practices in these two fisheries are described separately.

The non-trawl entry level fishery will receive an allocation of one-half of the 5 percent entry level target rockfish set aside. The allocation will be made first from northern rockfish and pelagic shelf rockfish, with the remainder coming from Pacific Ocean perch. Since recent Pacific Ocean perch TACs have exceeded the combined northern rockfish and pelagic shelf rockfish TACs, the sector can be expected to receive some Pacific Ocean perch in its allocation.

The entry level non-trawl fishery will be prosecuted as a limited access fishery (similar to the current limited access fishery) open to any non-trawl participants that apply to participate. Historically, non-trawl vessels have very minimal participation in the CGOA target rockfish fisheries. Although the fisheries have opened to non-trawl participants on January 1st and not opened to trawl gear until early July, non-trawl harvests never exceeded two-tenths of one percent of the TAC for any of the target species. No harvest of Pacific Ocean perch by non-trawl vessels has occurred, although some experimental gear is being used to target Pacific Ocean perch in Southeast. Despite the minimal historic participation, some non-trawl fishermen have expressed an interest in prosecuting the entry level fishery. Most have said that they will participate primarily in the summer months when the weather is the best, allowing the fleet to target these offshore rockfish. The potential success of these persons cannot be predicted. If some participants are successful in the fishery, additional entry can be expected.

The entry level trawl fishery will be allocated one-half of the 5 percent entry level set aside. This allocation will be first from the Pacific Ocean perch set aside, which in the absence of a large TAC change will be large enough to accommodate the entire trawl entry level allocation. The entry level trawl fishery is open only to LLP holders that have not participated in the target rockfish fisheries in the qualifying years. The level of participation in this fishery cannot be predicted, since participants are limited to persons with no CGOA rockfish history.

Fishing practices in this fishery are likely to resemble those in the main pilot program. Since secondary species will be managed under the current MRAs (instead of direct allocations), timing of fishing is less

likely to be constrained by incidental catch of secondary species. Some participants may try to catch secondary species to the MRA permitted amount. The small rockfish allocations when translated through the MRA mean that harvests of secondary species will be relatively smaller, making it difficult for an entry level participant to harvest secondary species to the MRA permitted amount. This could result in a substantial amount of discards, if participants do not use caution. Some entry level participants could elect to harvest under the MRA amount to avoid overcatching and discarding. Halibut PSC usage by the entry level fishery will be from the general trawl allocation of PSC to the CGOA deep-water complex. Since halibut PSC is allocated quarterly and is frequently fully harvested, the halibut PSC is likely to constrain the operations of this fleet at times throughout the year.

Harvests from both sectors of the entry level fishery will be required to be delivered to processors that are not eligible for the main program. Although the primary rockfish processors for the CGOA are included in the main program, harvesters should have some choice of processors in the entry level fishery. Processor preferences for delivery timing, however, could play some role in determining when fishing takes place in the trawl entry level fishery.

2.5.3. Effects on participation in the processing sector

Development of a rationalization program, which slows the pace of fishing and distributes landings over a longer period of time is likely to affect the processing sector in many ways. 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 current participation and practices, if the status quo is maintained.

Catcher processors in the rockfish fisheries current produce mostly whole and head and gut products. Catcher processors are likely to continue producing these products, processing catch as it is landed in the race for fish.

In the current fishery, shore-based processors race to process landings in an attempt maintain market share and to maintain a minimum quality for products. Quality, however, suffers 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, is often handled better than target rockfish catch by vessels. As a consequence, secondary species are typically processed into higher quality products.

Catcher processor sector allocation with cooperatives

Processing by catcher processors under the catcher processor sector allocation with cooperatives is likely to remain similar the current processing by this sector. Most vessels in the sector are equipped for producing a few simple products (frozen whole and head and gut fish). Because of size limitations, it is unlikely that any of these vessels will change plant configurations to process higher-valued, more processed products.

Although catcher processor product mix may not change from the status quo under this alternative, it is possible that some improvement in quality may be made by some participants. Generally, catcher processors produce a relatively high quality product, so the ability to make quality improvements may be limited.

Catcher processor cooperative

Processing of catcher processors under this alternative is likely to be the same as processing under the catcher processor sector allocation alternative.

Catcher vessel cooperative with limited processor entry

Under this alternative, only processors that have processed at least 250 metric tons of aggregate CGOA rockfish per year for four years between 1996 and 2000 will be permitted receive deliveries of rockfish harvested under the main program.³⁰ Six processors meet this qualification criteria, all of which are based in Kodiak.

Processing of shore-based plants under this alternative can be expected to change from the status quo. Share allocations to cooperatives should provide cooperatives with the ability to improve quality of landings. These quality improvements should provide processors with the ability to pursue higher revenue products. Whole and head and gut products are the leading products of shore-based plants that currently participate in the rockfish fisheries. Rockfish fillet prices, however, average 5 times the average price of whole and head and gut rockfish products. Even though recovery rates may be substantially lower and production costs higher for fillet production, the expected return on these higher valued products should be sufficient to warrant changing to fillet production, if quality can be maintained.³¹ Similarly, some plants produce substantial amounts of surimi. Average prices for fillets are more than twice the average surimi price, while these products have similar product recovery rates. If quality improvements in landings can be realized processors may also shift from surimi production to fillet production. Some processors are likely to develop products to serve a fresh market. The travel limitations of Kodiak (where all of the qualified plants are located) could pose some challenge to participants wishing to serve that market. Potential revenues in the market, however, should induce some processors to produce fish for fresh markets.

The structure of the market for landings should be competitive under this alternative, inducing some processors to aggressively pursue product improvements to attract additional landings. Although the processors will participate in a market with limited entry, eligible processors have processed in excess of 90 percent of the landings of CGOA rockfish between 1996 and 2002. Since the fishery was prosecuted over a very short period in the past and will be prosecuted under an extended season under this alternative, it is likely that competition for landings would develop despite the limit on processor entry. Although competition should exist in the market for landings, harvesters are likely to time landings to accommodate processing schedules, which processors should reward in turn with higher ex vessel prices. This timing of landings could be critical to processors meeting some market demands, particularly if a fresh market were to develop.

Some processors (particularly those with loyal fleets that have historically made deliveries from many different fisheries to the same processor) may choose to compete less in more challenging markets (such as the fresh market). These processors are likely to produce more high quality products, such as frozen fillets, but may also be expected to balance the potential costs to production of other species with their improvements of production of rockfish. The extent to which processors are able to adopt this approach would depend on the loyalty of their fleet, including the interaction of the fleet's participation in the rockfish fisheries with their participation in other fisheries. Overall, it is possible that some harvesters that

³⁰ A suboption in the current motion would qualify any processor that processed in excess of 250 metric tons in any one year between 1996 and 2002 provided that the owner also invested in excess of a minimum threshold amount in the plant. Confidentiality limitations prevent the disclosure of whether any processor meets this qualification.

³¹ Fillet recovery rates have been estimated to be approximately one-half the recovery rate for head and gut and whole products (Crapo, 1993).

participate in diverse fisheries throughout the year could choose to remain with a processor offering lower rockfish prices, if lower revenues for rockfish were to be compensated for by increased revenues from landings in other fisheries.

Catcher vessel cooperative with processor associations

Processing practices under this alternative should be similar to those under the previous alternative. The processor associations under this alternative, however, are likely to dampen competition among the eligible processors, which could limit the extent to which some processors aggressively pursue new or challenging markets.

Under this alternative, each eligible participant would be eligible to join a cooperative in association with the eligible processor to which it delivered the most pounds during the processor qualifying period. Processor eligibility would be based on the same criteria defined for other catcher vessel pilot program alternative, so six processors would be eligible under this alternative. A harvester/processor association would be determined based on the processor to which the harvester delivered the most pounds of target rockfish during the years 1996 to 2000, inclusive, with each processor permitted to drop the year of its choice from the calculation. Processor/harvester associations were estimated by dropping for each processor, the year in which the processor landed the least pounds of target rockfish.

Table 25 and Table 24 (above) show characteristics of the harvester/processor associations. Table 25 shows the number of processors that have various numbers of associated harvesters (or LLP licenses). This table also shows the number of harvesters without deliveries to a qualified processor and the estimated allocations to those harvesters. The table shows that all qualified processors have at least one associated harvester, while two have 10 or more associated harvesters. In addition, 6 harvesters that receive allocations have no deliveries to a qualified processor. These harvesters would be permitted to join any cooperative, but their allocations would not be considered in determining whether the cooperative formation threshold is met (holders of 75 percent of eligible history). Table 24 shows the number of processors by the allocations of their associated harvesters. The table shows that no processor would be associated with processors that have in excess of 30 percent of the sector’s qualified harvest history.

Table 25. Number of processors by number of associated harvesters and number of license holders with no deliveries to a qualified processor

	Number of qualified processors with				Number of LLPs	
	no associated LLPs	5 or fewer associated LLPs	more than 5 and fewer than 10 associated LLPs	10 or more associated LLPs	with no deliveries to a qualified processor	Allocation to LLPs without deliveries to a qualified processor
Pacific Ocean perch	0	3	1	2	6	3.0 percent
Northern rockfish	0	3	1	2	5	1.5 percent
Pelagic shelf rockfish	0	3	1	2	6	2.1 percent

Source: NPFMC Rockfish Database 2004, Version 1

A processing cap is intended to prevent overconsolidation of processing under the program. Under this rule, no processor would be permitted to process in excess of 30 percent of the sector’s aggregate rockfish, using 2002 as an index year. No processor is associated with harvesters that have historically processed in excess of the 30 percent limit.

Because the cooperative structure under this alternative differs from the structure under the other catcher processor alternative, it is possible that some processing differences could arise. Under this alternative, harvesters have no choice of cooperatives to join, but will be eligible for a single cooperative associated with a specific processor. As a consequence, processors are unlikely to compete for landings on a regular basis, but only in developing the terms of the cooperative agreement, which is subject to the processor’s

approval. This limit on the competition for landings from the fishery could reduce competition among processors for markets for their outputs. While some processors may aggressively pursue any available markets, it is possible that others will show less interest in extracting maximum revenues from rockfish landings, particularly if their processing of those landings could interfere with their operations in other fisheries. So, processing under this alternative should resemble that of the previous alternative, however, fewer products could be produced for challenging high revenue markets, as some processors may not perceive the need to compete as aggressively for landings due to the limited markets available to harvesters.

Entry level fishery

Processing practices in the entry level fishery should be similar to those under the catcher vessel alternative. In the trawl sector, entry level participants should time their landings to processors to receive maximum value for their landings. Entry level processors are likely to be smaller than the more established processors that have qualified for the program. Consequently, most are likely to be familiar with aggressively pursuing smaller market opportunities. Trawl allocations in the entry level are likely to be relatively small (equal shares of the approximately 375 metric tons to each trawl applicant). In addition, harvesters fishing their allocations are likely to be permitted to make their harvests over an extended season, allowing the processors to time landings to achieve processing efficiency. Given that landings of these small allocations can be timed with processors, it is likely that even small plants would be equipped to participate in the entry level trawl fishery.

Participants in the entry level non-trawl fishery, historically have received a higher price for their landings of rockfish, likely as a result of better quality of landings. Because of this higher quality and the relatively smaller landings dispersed over longer time periods, historically landings from this sector have likely been processed into higher quality products. In the entry level program, landings from this sector could be made throughout the year until the third quarter, when the trawl sector is likely to sweep up any fish remaining in the non-trawl entry level allocation. Landings from this sector, however, are likely to be concentrated in the summer months. Processors receiving landings from this sector are likely to pursue more challenging, high value markets (such as the fresh fish market).

2.5.4. Effects on catcher processor efficiency

This section of the analysis examines the effects of the alternatives on catcher processor efficiency. Since only three of the alternatives apply to catcher processors, this section only considers the effects of those three alternatives on catcher processor efficiency. The interaction of the catcher processor alternatives with the two 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.³² 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. “Allocative efficiency” considers of both the markets for inputs and outputs and choices of inputs and outputs and is a measure of the economic benefits of the choosing different mixtures 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 or 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 sectors – harvesting and processing – and expresses its intent that the rationalization program contribute to the economic stability of both sectors. To facilitate an understanding of the implications of the alternatives on these two sectors, this analysis separately assesses the implications of the different alternatives on the efficiency of the two sectors.

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

³² 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.

business, harvesters and processors invest capital and effort 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. 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 sectors, the analysis in this section devotes considerable attention to the effects of the different alternatives on the distribution of revenues between the 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.³³

For each sector discussed below, it is possible that efficiencies could differ within the sector. 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 the current LLP fishery. Catcher processors are compelled to race for rockfish harvests with other catcher processors, as well as catcher vessels participating in the fisheries during the few weeks they are open each year. Although catcher processors process their catch quickly relative to catcher vessels, quality of harvests likely suffer to some extent, as participants adopt fishing techniques to maximize catch rates, which may lead to diminished quality and dissipation of a portion of the resource rents. Particularly on vessels with smaller processing plants, fishermen 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

³³ Some analysts might consider these effects on other fisheries to be “cumulative effects” because of 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.

head and gut frozen products. Production of these products is likely to continue, if the status quo is maintained.

Catcher processor sector allocation with cooperatives

Under this alternative, the catcher processor sector is likely to realize some gains in production efficiency capturing greater rents from the fishery. As noted earlier, most eligible catcher processors are likely to join cooperatives under this alternative, since operations in the limited access fishery with reduced MRAs are likely to be less efficient (and profitable).

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

Some cooperatives may also improve efficiency in other July fisheries, if they are able to reduce the number of vessels in the rockfish fishery or change the timing of rockfish harvests (away from the traditional early July fishery). This interactive effect should arise one of two ways. Since each cooperative will be limited to the historic catch of its members in other July fisheries³⁴, the outputs of each cooperative will be limited. A cooperative could enter more vessels into these other fisheries (since no or fewer vessels will be occupied with rockfish targeting in early July) slowing the rate of harvesting and processing without reducing its total harvest from historic levels. At this slower rate, technical efficiencies similar to those in the target rockfish fishery could be realized. Alternatively, a cooperative could choose to use fewer vessels to make its historic harvests in these other fisheries, since vessels would be able to begin fishing at the opening of the non-CGOA rockfish seasons, instead of needing to race for fish in the CGOA rockfish fishery prior to entering these other fisheries. A cooperative whose members have diverse histories in several different July fisheries may be less able to achieve these efficiencies in other fisheries, since the cooperative may need to enter vessels in several fisheries simultaneously to maintain its historic shares.

Participants in this sector will also have the option of transferring their annual allocations to the shore-based sector. Some historic participants could elect to transfer their allocations for harvest by a catcher vessels cooperative, if they perceive an added benefit from fishing of the allocation by that sector. Participants with relatively small allocations who cannot achieve efficiencies internally harvesting and processing those allocations and are unable to reach satisfactory agreements with other participants in the catcher processor sector may find that transferring their small allocations to the shore-based sector could yield a better return. Whether better returns can be realized in the shore-based fishery cannot be predicted and depends on both the difference in harvesting and processing costs between the shore-based and offshore sectors and the differences in product outputs and quality. As noted in the discussion of shore-based processing below, the shore-based sector is likely to produce higher-value processed products, such as fresh fillets that cannot be processed onboard the catcher processors that participate in the rockfish

³⁴ Although cooperative members could choose to be subject to a standdown in lieu of the cooperative sideboard, it is unlikely that a cooperative would choose to accept the standdown given the opportunity to enter the July fisheries on their opening.

fisheries. Whether these different products lead to greater production efficiencies, however, depends greatly on harvesting and processing costs.

Although technical efficiencies should be realized by the catcher processor sector overall, some catcher processors eligible for the program may realize efficiencies that are substantially less than those realized by others. Eligible catcher processors that receive small rockfish allocations may have little to gain from coordinating the harvest of relatively small rockfish allocations, particularly since sideboards will limit their harvest from other July fisheries. It is also possible that some members of the sector could be disadvantaged by participating in the rockfish program, because the loss of revenues from limits on their activities in other fisheries from the sideboards may exceed the benefits of the exclusive rockfish allocations. These participants are likely to opt out of the program to remove the constraints of cooperative sideboards on their participation in other fisheries. A catcher vessel that opts out of the program would only be permitted to participate in fisheries that it has participated in during the first week of July in at least two of the seven qualifying years. This minimal limitation is unlikely to constrain any vessels that have limited rockfish history that are likely to opt out of the program.

Catcher processor cooperative

Efficiency gains under the catcher processor cooperative alternative should be similar to those realized under the other catcher processor pilot program alternative. Under this alternative, persons that choose not to enter cooperatives would be permitted to fish individual allocations, but would be prohibited from exchanging annual allocations with other participants. Notwithstanding the ability to fish individually, all eligible catcher processors that choose to remain in the program are likely to join cooperatives that will allow greater flexibility in harvesting and the exchange of shares that is likely to facilitate harvest of substantially greater portions of the allocations given the hard caps of the secondary species allocations. As under the other catcher processor alternative, some catcher processors with minimal allocations under the program may choose to opt out of the program to avoid the restrictions of the cooperative sideboards or transfer their allocations to a catcher vessel cooperative, if better returns are available from that sector. Total catcher processor efficiencies under this alternative are likely to be the same as the efficiencies under the other catcher processor alternative.

2.5.5. Effects on catcher vessel efficiency

This section examines efficiency in the catcher vessels sectors under the three alternatives that apply to the sector.

To understand the efficiency effects of these alternatives on harvesters requires consideration of the nature of the cooperatives created under the program. The harvest cooperatives are explicitly for the sole purpose of coordinating the harvest of allocations. The cooperatives are not cooperatives formed under the Fisheries Collective Management Act (FCMA). Given their form, these cooperatives cannot negotiate price or terms of deliveries with processors. Members (or even potential members of a harvest cooperative), however, may form an FCMA cooperative with the same or similar membership as a rockfish harvest cooperative.³⁵ 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 the current

³⁵ Catcher vessel participants that are affiliated with processors

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 has led most catcher vessel participants to using 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 the current management is maintained.

Returns to catcher vessels under the existing 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 current seasons, most processors have needed to process landings 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 have 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 (as the rockfish fisheries are) a substantial portion of the rents are likely to be dissipated.

Catcher vessel cooperative with limited processor entry

The catcher vessel cooperative with limited processor entry alternative is likely to improve catcher vessel efficiency over status quo management. As noted earlier, most eligible catcher vessels are likely to join cooperatives under this alternative.³⁶

Since participants will be able to gain exclusive share allocations by joining cooperatives, a harvester's share of the fishery will generally be unaffected by catch rates.³⁷ Participants, instead, will refocus their efforts toward harvesting allocations in a manner that improves technical efficiency – reducing inputs and increasing the quality of rockfish deliveries.³⁸ Most participants may be expected to choose to sacrifice some cost efficiencies (i.e., use more inputs such as fuel) to improve quality of deliveries and receive a greater price for landings. This trade off may increase costs, but should result in improvements in technical efficiency and overall efficiency of catcher vessels because of the higher price that would be paid for these landings.

Some cooperatives are likely to remove vessels from the rockfish fisheries to reduce costs. Consolidation of catch on fewer vessels and fishing outside of the traditional July season could also allow the cooperative to enter more vessels in other July fisheries to ensure that the cooperative's members maintain their historic harvests in those fisheries. Sideboards will prevent rockfish catcher vessel participants from increasing their share from July fisheries in the aggregate, but will not prevent the cooperatives from competing amongst themselves to increase their shares of the sideboard amount. The extent of this competition in other fisheries could be reduced, if cooperatives are able to agree on the division of the sideboard amount. Such an agreement could provide the sector with the opportunity to

³⁶ The alternative of participating in the limited access fishery (with allocations reduced by 20 percent and reduced MRAs to keep catch under the allocation) is unlikely to appeal to many participants. In addition, cooperative rules are favorable for cooperative membership under this alternative. For example, cooperative formation simply requires four holders of four eligible LLPs. Also, cooperatives are required to accept any eligible LLP holder as a member subject to the same rules governing other members.

³⁷ Seasons will be of limited length to accommodate management and oversight. Harvests, however, are unlikely to be constrained by season length given the current ability of the fleet to harvest the TACs of all CGOA rockfish in less than three weeks.

³⁸ Because catcher vessels deliver a single product (unprocessed fish) to shore plants, the change in their outputs arising from quality improvements is characterized as a technical efficiency improvement here. Some economists may assert that the change is actually allocative, because of the difference in quality could be argued to be effectively changing outputs. Regardless of the characterization of the change, the result is an efficiency improvement.

realize efficiency gains in those other fisheries, if harvests can be slowed. The prospect for cooperatives reaching an agreement concerning the harvest of the sideboard amount cannot be predicted.

Although processor entry into the rockfish fisheries is limited, harvesters should be able to generate additional competition for landings among the licensed processors under this alternative. Since qualified processors have processed in excess of 90 percent of all historic landings during the two to three week season, processors that have been unable to compete for additional landings because of capacity constraints during the brief season are likely to have the ability to process substantially greater quantities of rockfish, if landings can be timed to take advantage of available processing capacity.³⁹ Catcher vessel participants are likely to have the greatest negotiating leverage in the ex vessel market under this alternative, because of the extended season and the limited restriction on the processing market relative to the alternative with processor associations. As a result, catcher vessel participants should be expected to receive a greater share of resource rents under this alternative than under the other pilot program alternative. Since the CGOA rockfish fishery only a small portion of the fishing undertaken by most participants in the fishery, it is possible that some catcher vessel participants may choose to accept a lower price for landings from the rockfish fishery to maintain a relationship with a processor in other fisheries. Notwithstanding this dampening of direct competition for rockfish landings, these participants are likely to realize substantial improvements in efficiency from both cost reductions and ex vessel price increases resulting from quality improvements under this alternative.

Overall, the ability to coordinate harvest activity and remove vessels from the fleet without loss of harvest share, together with a relative improvement in bargain strength arising from the relatively weak processor protection of the limit on processor entry should result in substantial improvements in harvest sector efficiency over the status quo.

Catcher vessel cooperative with processor associations

Operations of the catcher vessel sector under this alternative should be similar to those under the other pilot program alternative. Catcher vessel efficiencies, however, are likely to be less under this alternative because of the shift of negotiating leverage to processors from the rigid cooperative/processor associations.⁴⁰

Catcher vessel fishing practices and technical efficiency gains under this alternative are likely to resemble those under the other catcher vessel pilot program alternative. Rockfish fishing will be dispersed over the longer seasons. Slowing of fishing and greater attention to handling of catch should improve quality of landings. Also, cooperatives are likely to use fewer vessels to fish rockfish to reduce costs and allow cooperative members to maintain their share of harvests in other fisheries.

Although fishing under the two catcher vessel pilot program alternatives should be similar, the ability of catcher vessels to realize benefits from technical efficiency gains (including quality improvements) will be less under this alternative because of the cooperative/processor associations. Since each catcher vessel participant will be eligible to join a single cooperative in association with the processor that it delivered the most rockfish to in the qualifying years, catcher vessel participants will have little ability to use competition for rockfish landings for leverage in price negotiations. Two potential sources of negotiating leverage might be exploited under this alternative. First, a cooperative's members could use the threat of not fishing their allocation, instead choosing to either not fish at all or fishing in the limited access fishery. The potential for negotiating leverage that arises from the opportunity to participate in the limited entry fishery is all but lost because of the 20 percent reduction in the allocation to that fishery and the

³⁹ Although most processors have substantial participation in other Gulf of Alaska LLP fisheries, substantial down times exist between seasons that occupy most of the qualified processing capacity.

⁴⁰ Although the alternative creates no specific landing requirement, given that cooperative formation requires that relationship

reduced MRAs for valuable secondary species. Either approach is likely to provide minimal leverage to the cooperative's members, who can expect to receive only their costs of fishing and normal profits (i.e., the processor will receive any rents from the fishery). Alternatively, harvesters may use their deliveries in other fisheries to induce a processor to share efficiency gains. This approach is likely to be more effective, but still should have only a limited effect since the market for those other landings is somewhat fluid, allowing the processor to compete for landings from other vessels, if formerly loyal catcher vessels threaten to move to another processor because of low ex vessel prices in the rockfish fishery. So, while catcher vessels may be able to induce some additional revenues from processors under this alternative, the potential to realize substantial gains by negotiating a share of the increase in resource rents is limited.⁴¹ A substantial portion of resource rents are likely dissipated in very short season under the status quo management. As a result, overall catcher vessel efficiency should not decline under this alternative in comparison to the status quo. The potential for any increase in rents, however, is limited by the weak negotiating position of catcher vessel participants under the alternative.

The dynamics of price negotiations under this alternative could be complicated by the limited purpose served by the harvest cooperatives and the harvest cooperative formation rules. Since the harvest cooperatives under the program are not permitted to negotiate price, members of the same harvest cooperative could conduct negotiations separately. This could disadvantage some cooperative members and lead to different price for landings of equivalent quality in the same harvest cooperative. For example, a group of catcher vessel participants eligible to associate with a processor could form an FCMA cooperative. If this FCMA cooperative includes holders of more than 25 percent of the history that is eligible to associate with the processor, the FCMA cooperative members could threaten the formation of a harvest cooperative in its negotiations with the processor. Once a cooperative has formed, any catcher vessel participants that have not agreed to delivery terms with the processor will be disadvantaged in their negotiations, losing any ability to threaten cooperative formation.⁴² The processor, on the other hand, will have less incentive to make any concessions to participants (including matching the already agreed price) once the cooperative has formed. Whether a processor is likely to assert different leverage against cooperative members will depend on the level of unification of catcher vessel participants in their negotiations. In addition, price differences could be relatively small, if the processor asserts the leverage available in its negotiations prior to formation of the harvest cooperative.

Entry level fishery

Since the program elements governing the trawl and non-trawl entry level fisheries differ, the catcher vessel efficiency effects of these alternatives are discussed separately.

Fishing practices in the trawl entry level fishery should be similar to those in the main program. The entry level participants are likely to have small allocations relative to the participants in the main program. In addition, these participants will not be permitted to transfer allocations among vessels, limiting their ability to realize technical efficiencies through consolidation. Entry level participants, however, will be subject to the current MRAs, which would allow catch of higher value secondary species in excess of the allocations in the main program. Entry level trawl participants will not be subject to time pressures of a race for fish, since each will receive an exclusive allocation, so secondary species could be harvested to the amount allowed by the MRA. This higher harvest of secondary species could contribute to revenues (and efficiency) for entry level participants. Yet, permitted harvests of secondary species are likely to be

⁴¹ The potential for a catcher vessel participant to use deliveries in other fisheries to induce a higher price in the rockfish fishery also depends on the participants fishing practices outside of the rockfish fishery. Since most catcher vessels in this fishery also have substantial participation in other Central Gulf of Alaska groundfish fisheries, the potential for using those landings to induce higher rockfish prices does exist.

⁴² The provision permitting eligible catcher vessels to join the harvest cooperative subject to the same terms and conditions as other members will not address any pricing differences, since harvest cooperatives cannot negotiate delivery terms.

small, since the directed rockfish allocations will be small. All harvests should be of relatively high quality since the exclusive harvests will allow harvesters to handle catch with care.

Participation in the entry level fishery requires that the harvester demonstrate a market for landings with a processor eligible for the entry level fishery (i.e., a processor that is not eligible for the main program). Since several processors that process landings from the Central Gulf of Alaska are not eligible for the program demonstration of a market should not be difficult. Since allocations would be harvestable at any time during an extended season, participants should have substantial negotiating leverage with processors. So, if catcher vessel participants can achieve a reasonable level of technical efficiency in harvesting allocations, they should be able to realize substantial overall efficiency.

Harvest of the remaining TAC from the non-trawl entry level fishery at the end of the third quarter is likely to be managed as a limited access fishery. As a result, harvests of this fish will likely be similar to the harvests in the status quo fishery. Quality could suffer if harvesters race to harvest the available TAC. Prices of landings from this fishery are likely to be lower than harvests made with exclusive allocations in the entry level fishery because of the quality of landings.

Non-trawl entry level participants will participate in a limited access fishery. Although the limited access fishery will be managed similarly to other competitive fisheries in the Gulf of Alaska, a race for fish that dissipates rents is not likely (at least initially). Non-trawl participants have little historic participation in the rockfish fisheries, never harvesting even one-tenth of the amount of fish that are being allocated to the sector under this program. This lack of history in the fishery raises the question of whether non-trawl vessels can successfully prosecute the fishery. It is possible that harvests by non-trawl vessels could remain relatively low under the program, with most of the allocation being caught when open to the trawl sector in the third quarter.

Any portion of the allocation harvested by the non-trawl sector should be of high quality and should bring a relatively high ex vessel price, as the few harvests of this sector in the past have generated substantially higher ex vessel prices than trawl harvests in the current fishery. Participants in this sector's entry level fishery are likely to have substantial negotiating leverage, since their harvests can be made over an extended period of time, including times when processors have less landings because few other open fisheries are being prosecuted aggressively by the high landing trawl fleet.

2.5.6. Effects on shore-based processing efficiency

Shore-based processing is provide for only under the two catcher vessel alternatives and in the entry level fishery. The efficiency effects of these alternatives are discussed in this section.

Status quo

Under the current management, fishermen race for catch, landing that catch with processors shortly after it is harvested. Because of the race for fish, 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 poorer quality are produced. Technical efficiency also is lost, as crews must be scaled up for a short period of time to accommodate the rapid pace of landings during the brief season.

Landings from non-trawl participants are a very small portion of the status quo fishery. These landings, however, bring fishermen and processors a premium price because of their relative high quality.⁴³ 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 possibly some of the small processors) reducing that negotiating fishermen's leverage somewhat.

Catcher vessel cooperative with limited processor entry

Under this alternative, fishing will be slowed as cooperative receive exclusive allocations. Technical efficiency in processing should improve as processors are better able to schedule crews to process landings. Allocative efficiency should also improve as processors improve product quality and produce more higher quality products that cannot be produced under the current management because of the relatively low quality of landings and the need to process those landings rapidly. Catcher vessel participants are likely to use cooperatives to coordinate landings contributing to technical efficiency gains in the processing sector.

Processors, however, may experience little improvement in their overall efficiency under this alternative because of their weak negotiating position in the market for landings. Although entry is limited under this alternative, the capacity of qualified processors far exceeds that necessary to process landings in a slowed fishery with an extended season. The cooperation from catcher vessels may improve quality and value of processing outputs and help processors minimize costs of production, but catcher vessels should be in a relatively good negotiating position to receive most of the benefits of those improvements through ex vessel pricing. Notwithstanding the relatively strong position fishermen have under this alternative, processors, overall, should obtain normal profits from their processing. Some less efficient processors may be unable to realize normal profits. These processors may be expected to drop out of the rockfish fishery.

Some processors may be able to gain some negotiating leverage through landings from fishermen in other fisheries. The extent of this leverage is likely to be limited and only arise from landings in fisheries in which fishermen have limited markets for their landings (such as the flatfish fisheries).

Catcher vessel cooperative with processor associations

As under the other catcher vessel pilot program alternative, technical efficiencies and product improvements in the processing sector are likely to occur under this alternative. The slower rate of fishing should allow processors to reduce processing costs and produce higher value and higher quality outputs.

Unlike the other catcher vessel alternative, this alternative provides processors with a substantial advantage in the market for landings through processor/cooperative associations. Since each qualified catcher vessel participant will have to join a cooperative in association with a specific processor, fishermen will have little negotiating leverage with respect to their landings. Any potential negotiating leverage for the fishermen arise from their activities in other fisheries. The outcome should be that processor efficiency improves substantially with the reduction in processing costs and product improvements (some arising from improved quality of landings). Processors are likely to capture most of the increase in rents under this alternative, improving overall processing efficiency.

Entry level fishery

In the trawl entry level fishery technical efficiency and product improvements should be similar to those realized under the two catcher vessel pilot program alternatives. The distribution of benefits from these

⁴³ The specific processed products from CGOA rockfish non-trawl cannot be separated from processed products from other non-trawl fisheries. Both fishermen and processors assert that products from this fishery are generally of higher quality and sell for a higher price than products from the main fishery.

improvements (i.e., distribution of rents) should be similar to those under the catcher vessel cooperative with limited processor entry, as fishermen should have better negotiating leverage than processors in the market for landings over the extended season. Processors, however, should realize normal profits from their landings.

Processor efficiencies from harvests by trawlers of any remaining TAC from the non-trawl allocation should be similar to those of the status quo fishery. The relatively small amount of the allocation remaining at this point in the year, however, could lead to limited participation and a very short season in the fishery. If this fourth quarter season is very short allowing only one or two tows for rockfish, it is possible that quality could be maintained, as harvesters perceive little loss of opportunity from handling catch with care. In the fourth quarter trawl fishery, it is possible that some of the negotiating leverage could shift back to processors. Fishermen, however, should be able to generate competition by negotiating with several processors prior to the opening.

Efficiency in the processing sector in the non-trawl entry level fishery should be the same as processor efficiency for non-trawl participants under the status quo.

2.5.7. 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 analyses of efficiency of the fishing and processing sectors above.

Status quo

Overall production efficiency in the CGOA rockfish fisheries is likely to remain at its current level, if the status quo management is continued. For catcher processors, quality of products is relatively high as catch is processed quickly onboard. These vessels are likely to continue producing exclusively whole and head and gut products, as is the current practice. 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 produce higher valued products.

Production of rockfish caught by non-trawl vessels is likely to remain at the current level of efficiency. Catch is likely to be of high quality and will be processed into relatively high valued products.

Catcher processor sector allocation with cooperatives alternative

Overall production efficiency is likely to increase slightly under this alternative, as catcher processors are able to make some quality improvements with the ending of the race for fish under the current management. Product form (whole and head and gut) are likely to remain the same under this alternative due to operational limitations. Some technical efficiencies could be realized through the consolidation of catch on fewer vessels, but vessels will not be retired because rockfish is a minor part of each vessel's annual activity.

Catcher processor cooperative alternative

The change in overall production efficiency under this alternative is likely to be the same as under the other catcher processor alternative. Minor improvements in quality and technical efficiencies could result in some overall production efficiency gains.

Catcher vessel cooperatives with limited processor entry

Overall production efficiency should improve substantially under this alternative. Quality of rockfish landings should improve as the race for fish is ended. Processors should also be able to better handle landings producing higher quality and higher valued products. Both sectors should realize some gains in

technical efficiency through better scheduling of their activities. Costs should be reduced as participants in both sectors are able to determine inputs to reduce costs of production without concern over losing their share in the fishery, if production is slowed.

Catcher vessel cooperatives with processor associations

Overall production efficiency should also improve substantially under this alternative. As under the previous catcher vessel alternative, quality of production should improve and higher valued products should be produced. Participants in both sectors should realize some efficiencies in cost, as they will no longer have to race to preserve their share of fish. Efficiency gains under this alternative, however, could be less than under the other catcher vessel alternative. The strict cooperative/processor association under this alternative could reduce the incentive for some processors to aggressively pursue markets for rockfish landings.

Entry level fishery

The trawl sector of the entry level fishery should realize levels of overall production efficiency similar to that realized under the catcher vessel alternatives. The entry level fishery, however, may not be as successful in achieving efficiencies as the main program alternatives because of the limited allocation to the fishery. With small allocations, efficiencies in operational costs could be hard to realize for both sectors, since no consolidation of allocations is permitted. Efficiency of the trawl sector in the harvest of the remaining non-trawl allocation at the start of the fourth quarter should be similar to the status quo efficiency.

Overall production efficiency of catch from the non-trawl entry level fishery should be similar to the level of efficiency achieved by the non-trawl sector in the status quo fishery. Catch can be expected to be of relatively high quality and processed into relatively high valued products.

2.5.8. Effects on consumers

This section examines the effects of the pilot 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 pilot program alternatives are again grouped in this section, because the effects are similar under those alternatives.

Status quo

Consumers are likely to be supplied with products from the rockfish fisheries that resemble those currently produced under status quo management. Catcher processors are likely to continue to produce high quality frozen head and gut and whole fish, most of which is 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.

Most of the catcher vessel production is sent to Asia, much of which returns after reprocessing. Some catch is 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.

Pilot program alternatives

Production of the catcher vessel sector is likely to be similar to current production under the pilot program alternatives. Some quality improvement could occur, but these vessels already produce high quality products because their catch is processed onboard soon after it is harvested. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian consumers, as most of the production from this sector is sold into that market.

Substantial changes are likely to occur in the production of catcher vessel harvests to the benefit of consumers. Catcher vessel landings are likely to be of higher quality under both of the catcher vessel pilot program alternatives. Processors are also likely to slow lines allowing them to produce fillets, instead of the less processed whole and head and gut products currently produced. This should limit the amount of reprocessing of products abroad for importation to U.S. markets. Some processors are likely to attempt to serve domestic fresh markets, which would also benefit U.S. consumers. Most of the benefits of production improvements in the fisheries are likely to be realized by U.S. consumers.

Although the effects on consumers of the two catcher vessels alternatives are likely to be similar, a few differences could arise. Under the alternative without cooperative/processor associations, processors will be forced to compete more aggressively in the market for landings. This could lead to less aggressive competition in the product outputs markets, if some processors perceive no threat to their supply of fish from reducing competition. Lesser competition is likely to be manifest in lower quality outputs, as processors perceive less need to search for higher revenues in the market place. The impact of this on benefits to consumers is not obvious and depends on the extent to which prices affect demand for the products. It is generally accepted that a measure of consumer benefit is the difference between the amount consumers are willing to pay for a product and the amount that is actually paid in the market (i.e., consumer surplus). For a given quantity of the product all of which is purchased, this difference will be larger for products that consumers are less able obtain substitutes (i.e., products with fewer substitutes are likely to have steeper demand curves). In general, one would surmise that lower quality products have relatively greater substitutes (i.e., flatter demand curves) than higher quality products, as substitutes are more readily available. Assuming the same quantity of production, higher quality products therefore could be argued to bring a greater benefit to consumers, as consumers in general are willing to pay more than the market price for higher quality products. Assuming that this argument holds, consumer surplus is likely to be greater under the processor limited entry alternative than the alternative with processor associations. The magnitude of this difference depends on the degree to which competition in product markets is dampened by the protection of the processor associations.

2.5.9. Effects on management, monitoring, and enforcement costs

Management, monitoring, and enforcement under the different alternatives are described in section 2.5.1 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 pilot program alternatives

Under the catcher processor pilot program alternatives, NOAA Fisheries will incur additional costs of determining eligibility and making allocations of history to participants under the program. Cooperative agreements will be reviewed by the agency. Annual allocations must be made to cooperatives (and to either a limited access fishery or individuals, if any persons eligible for the program choose not to join a cooperative). NOAA Fisheries will be required to conduct catch accounting for the different allocations and monitor the allocations using observer data. The costs to NOAA Fisheries are likely to exceed the current costs of managing the rockfish fisheries under the LLP, which are in large part coordinated with management costs of several fisheries (and therefore are dispersed across several fisheries). Enforcement costs are also likely to rise under the pilot program, as enforcement personnel will be required to oversee activities over a longer period. In addition, individual accountability for catch of cooperative allocations requires additional enforcement resources. If a limited access fishery is required (which is not likely) additional inseason management of a limited access fishery with a relatively small allocation will be

required. This management is generally similar to the current management. Although the cost of the management for a smaller fleet should be less, the additional complication of monitoring a very small fleet fishing a very small allocation could add to those costs.

In addition to costs that will be borne by NOAA Fisheries, participants in the fishery are likely to have some additional costs. To date, NOAA Fisheries has maintained that to fully monitor total catch on a catcher processor requires the use of flow scales with every haul observed. A sampling station with a motion-compensated platform scale (to verify accuracy of the flow scale) could also be required on board the vessel. Currently, three of the vessels that carry licenses that are eligible for the program have both flow scales and observer stations. One vessel carrying a license eligible for the program has flow scales but no approved observer station (NMFS, 2004). Fully outfitting vessels to meet the monitoring requirements could be costly.⁴⁴ Approximately one-half of the vessels qualifying for this program, however, would be subject to minimum groundfish retention standard requirements to continue their participation in Bering Sea fisheries. Since that program also requires these same monitoring upgrades, the cost of the upgrades for those vessels should be considered a cost of maintaining the vessel's operations in both the CGOA rockfish fisheries and the Bering Sea fisheries, rather than simply a cost of continued participation in the rockfish fisheries. In addition, it is possible that some participants may choose have their allocations harvested by vessels with adequate monitoring equipment and facilities, instead of upgrading their vessels to participate in the cooperative component of the rockfish fisheries.

Added costs of observers are difficult to predict under the program. A requirement that all catch under the program be observed is likely to result in some added observer coverage for vessels harvesting fish under the program. A certified observer is estimated to cost approximately \$375 per day. The rockfish fishery has remained open approximately 2 to 3 weeks each year. The cost of an observer for approximately 2 and ½ weeks is approximately \$6,500. If an average vessel attempted to slow fishing to improve quality of products under the program fishing could be extended beyond the current 2 and ½ weeks. In considering these costs, it is also important to consider costs will vary with the size of the allocation fished and that several participants' allocations vary from the average.

The extent of the additional coverage, however, is difficult to predict because participants may coordinate fishing under the program to focus observer coverage to reduce costs. Savings are likely to be realized not only by participants stacking history on a single vessel, but also through coordinating monitoring within a trip. For example, a catcher processor harvesting allocations in the program may be able to catch pilot program rockfish and non-pilot program fish in a single trip. If pilot program tows are coordinated with an observer that is already on the vessel to observe harvests in the fisheries for other species, some savings on observer costs may be realized. The coordination of observer coverage for fishing under the program will determine the extent to which participants are able to realize observer costs savings by coordinating observer coverage for their rockfish fishing and other fishing activity.

The overall rise of administration and enforcement costs will be reduced by the very small catcher processor fleet that is eligible for the program.

Catcher vessel pilot program alternatives

As under the catcher processor pilot program alternatives, NOAA Fisheries will incur additional costs under the catcher vessel pilot program alternatives of determining eligibility and making allocations of history to participants under the program. Cooperative agreements will be reviewed by the agency.

⁴⁴ Approved flow scales are estimated to cost \$50,000. Observer station equipment, including an approved platform scale, is estimated to cost between \$6,000 and \$12,000. Installation costs are likely to vary across vessels and cannot be predicted. In addition, smaller vessels in the fleet could have difficulty accommodating these equipment and facility upgrades. As a result, installation could range from \$20,000 to \$250,000. Total costs of equipment and installation would therefore range from approximately \$75,000 to \$300,000. Costs in excess of \$150,000 are likely to be rare.

Annual allocations must be made to cooperatives (and to either a limited access fishery or individuals, if any persons eligible for the program choose not to join a cooperative). NOAA Fisheries will be required to conduct catch accounting for the different allocations and monitor the allocations using observer data. Enforcement costs are also likely to rise under the pilot program, as more resources will be required because of the cooperative allocations and the longer seasons. If an entry level fishery is prosecuted by non-members of cooperatives, cost of management would rise to an extent similar to the costs described for the limited access catcher processor fishery.

Observer costs, borne by the fleet, are likely to increase for the catcher vessel sector to provide adequate information concerning fishing activity under the program. The extent of these additional costs is not known, and depends on the specific monitoring program developed by NOAA Fisheries and the fishing practices of participants. To reduce observer costs (and operational costs), it is likely that some rockfish harvesting will be consolidated within (and possibly across) cooperatives. The extent of the impact of this consolidation cannot be predicted and will depend on costs in general, including observer costs.

Entry level fisheries

For both entry level sectors, NOAA Fisheries would have some expense related to the application process for persons that wish to participate in the program. Once applications are received, NOAA Fisheries would also have the expense of making allocations to the two fisheries and to the individual participants in the trawl sector. Since none of the allocations are history based, the computation of allocations would be very simple and virtually cost free.

For the trawl catcher vessel sector, the entry level fishery would be managed, monitored and enforced in a manner similar to the main pilot program catcher vessel fishery. Costs of management, monitoring, and enforcement would be similar to that described in for the catcher vessel pilot program alternatives. Some reduction in costs is likely to be realized because of the similar requirements for the pilot program and the entry level program. The specific costs will depend on the number of applicants for the program, which cannot be predicted.

For the non-trawl sector, the entry level fishery would be managed, monitored, and enforced in a manner similar to the limited access fisheries under the LLP. In general these fisheries cost less to manage. In addition, NOAA Fisheries expenses should be reduced since protocol for these fisheries are already well defined.

NOAA Fisheries is also like to have some additional expense, if the non-trawl allocation is opened for harvest by trawl vessels at the end of the third quarter. The agency will likely require a second application process for this fishery, which would be used to estimate the catching power of participants and determine whether a limited opening should be set for the fishery (i.e., 12 or 24 hour opening). The general expense of management and monitoring this opening should be similar to the management of the current LLP fisheries.

2.5.10. 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 stock sizes, the public may experience some loss of value, if catch from the fishery is not well utilized and goes to waste. No known studies of these

non-use values have been conducted to date, preventing any quantitative estimates of their value. This section, however, provides a qualitative analysis of these non-use benefits.⁴⁵

Status Quo

In the current fisheries, catch of all species of interest are limited either by TAC or by PSC limits. Managers 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 all species harvested. 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).⁴⁶ Additionally, minor amounts of other species are caught incidentally, much of which is discarded (see Table ____). Mortality of discards of incidental catch reduces the non-use values to the public that arise through productive use of the resource.

Pilot program alternatives

Under the pilot 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 public 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 productive use of the resource. In addition, production from rockfish catch under the program is likely to be of substantially higher quality and of higher valued products in the catcher vessel sector. These improvements could also provide non-use benefits to the public that values the productive use of the resource.

2.5.11. Effects on net benefits to the nation

The net benefits to the Nation arising out of the change in management can accrue from several sources. First, production efficiencies in harvesting and processing could occur as a direct result of management changes. These production changes may affect the benefits realized by U.S. consumers, through changes in product quality, availability, variety, and price. Further, the changes in conduct of the fisheries and management could result in changes in the environment, which yield benefit changes to the Nation through ecosystem productivity changes and welfare changes attributable to non use/passive use values. These various contributing effects of the alternatives to the net benefits to the Nation are summarized in the sections above. This section summarizes the different effects to allow comparison of the different alternatives and conclusions concerning the overall effects of the alternatives on net benefits to the Nation.

Status Quo

If the current management of the rockfish fisheries is continued, net benefits to the Nation are likely to remain at their current level. For catcher processors, quality of the whole and head and gut production is relatively high. Few consumer benefits from this production are realized in the U.S., as most fish is sold into foreign markets. For the shore-based sector, quality of landings and value of processed products

⁴⁵ This section intends to discuss only the public benefits from the environmental consequences of the alternatives.

⁴⁶ 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.

suffer decreasing production efficiency. Consumer benefits of these harvests are diminished by the quality and product value. In addition, a substantial portion of any consumer benefits is not realized by U.S. consumers, as much of the production is sold into foreign markets. Costs of monitoring and management are relatively low, as catch is monitored at the fleet level. Non-use benefits to the public are decreased to some extent by waste and bycatch.

Catcher processor sector allocation with cooperatives alternative

Net benefits to the Nation will be affected by a few different factors under the catcher processor sector allocation with cooperatives alternative. Production efficiency should increase slightly, as some participants realize moderate improvements in quality of production. Few, if any, benefits of production improvements will be realized by U.S. consumers, as this fleet is likely to continue to serve international markets. Costs of management, monitoring, and enforcement will increase to administer and oversee the cooperative allocations. Some vessels may be required to purchase additional monitoring equipment. Since that additional equipment will be required for participation in other fisheries, only a portion of its cost should be attributed to participation in the rockfish fisheries. The amount attributable to the rockfish fisheries will vary among participants. Some participants may avoid these costs altogether, if their allocations are fished by other cooperative members. Some additional benefits to the Nation could arise through reduction in bycatch, since the program requires full retention of several species. Since discard rates of these species are relatively low in the current fishery, these benefits are likely not substantial.

Catcher processor cooperative alternative

The effects of this alternative on Net benefits to the nation should be the same as those realized under the other catcher processor alternative.

Catcher vessel cooperatives with limited processor entry

A few different factors will affect net benefits to the Nation under the catcher vessel cooperatives with limited processor entry alternative. Slowing the rate for fishing and extending the season should lead to substantial increases in production efficiency, as participants in both sectors improve quality and higher value products are produced. These production improvements should lead to benefits for U.S. consumers, as this fleet is likely maintain or increase production for domestic markets. In addition, greater production is likely to occur domestically, as fewer primary products are shipped abroad for reprocessing. Increased administration and oversight necessary for cooperative allocations and an extended season will result in an increase in costs of management, monitoring, and enforcement. Participants may also require additional observer coverage. Some additional benefits to the Nation could arise through reduction in bycatch, since the program requires full retention of several species. Since discard rates of these species are relatively low in the current fishery, these benefits are likely not substantial.

Catcher vessel cooperatives with processor associations

Changes in net benefits to the Nation under this alternative are likely to be similar to the changes in net benefits to the Nation under the other catcher vessel alternative.⁴⁷ Overall gains in net benefits to the Nation, however, could be reduced under this alternative, if processors perceive less need to compete in product markets because of the relatively tight linkage of the processor associations under this alternative. Whether competition in product markets is dampened depends on the specific situation of the processors and fishermen that deliver to the processor (including factors such as the markets the processor serves, the

⁴⁷ The distribution of benefits among participants is likely to differ from the distribution under the previous alternative. The relatively strong, processor association is likely to limit the need for processors to compete for landings, resulting in the a greater distribution of benefits to processors under this alternative. Also, this distribution could affect benefits to the Nation, since some processors are foreign owned. Net benefits to the Nation will be reduced to the extent that the increase in benefits realized by foreign owned processors are redistributed to their foreign-based parent owners.

extent of involvement of the processor and fishermen in other fisheries, and the cost of developing participation in new and challenging markets).

2.5.12. Effects on entry into the fisheries

The ability of interested persons to enter the rockfish fisheries differs under the status quo and the different pilot program alternatives. Since the “entry level fishery” is a component of any pilot program, the analysis analyzes the main program alternatives given the existence of the entry level fishery. Since entry opportunities are very similar across all pilot program alternatives, these alternatives are analyzed in a single discussion, with any differences discussed within that section.

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 current active in the rockfish fisheries, several persons holding those licenses could enter the fishery. The lack of entry to the fishery under continuation of the status quo is a result of overcapacity in the fishery, which is demonstrated by the very short seasons. If the current management is continued, entry of additional vessels is unlikely. In the long run, some persons may choose to enter the fishery, but only if current participants depart from the fishery.

Entry to the non-trawl sector is also limited by the LLP. Jig vessels under 60 feet, however, do not require an LLP license to fish in federal waters, so fishermen wishing to use jig gear off of these relatively small vessels are not limited. If the status quo management is maintained, 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.

Pilot program alternatives

To assess the effect of the pilot program alternatives, one must first develop a workable definition of entry. This analysis assumes that entry means more than simply entering a vessel into the fishery, but instead means the development of one’s participation to resemble a typical participant in the fishery. The analysis examines both the potential to achieve that level of participation and the potential processes by which a person could develop participation to that level.

Using the definition, entry to the trawl fishery is clearly limited by the rules of the pilot program alternatives. Although entry to the “entry level fishery” is open to all LLP holders, this fishery is unlikely to support activities of a typical rockfish vessel. To enter the rockfish fisheries at the level of a typical participant, a person must acquire one or more licenses that are eligible and carry history adequate to support the operation of a vessel. Alternatively, a person could acquire a single license to enter the fishery, then enter a cooperative and acquire annual allocations within a cooperative to fish on a vessel. While this entry is possible, the cooperative structures that are effective at reducing transactions costs for existing participants are also likely to limit the ability of a new entrant to acquire additional portions of the cooperative’s annual allocation to fish on a vessel. Clearly entry is quite limited under the pilot program alternatives. In addition, the prices of eligible licenses are likely to vary with history in other fisheries. Since any transaction is likely to value all groundfish history related to the non-severable license, it is possible that some rockfish licenses with substantial history in other fisheries could be very costly despite relatively small qualifying rockfish histories.⁴⁸ The extent of the effects of histories in other fisheries on the prices of licenses cannot be predicted. Whether entry is more effectively limited by the

⁴⁸ Histories in other fisheries will likely be considered valuable for its potential value in other rationalization programs, such as comprehensive Gulf rationalization.

pilot program than under the existing management (which allows free entry to a fishery that dissipates a substantial portion of the rents in a race for fish) is uncertain.

For catcher vessels, entry is likely to be more limited under the catcher vessel cooperative with limited processor entry alternative. Under this alternative, catcher vessels are likely to receive a substantially greater portion of the rents in the fishery. These rents are likely to be capitalized into the eligible licenses driving up the costs of those licenses to potential entrants. Acquisition of annual allocations under the program is also likely to be more costly under this alternative. Under the catcher vessel cooperative with processor association alternative, entry of catcher vessels should be less costly as catcher vessel participants are likely to realize little more than normal profits from their participation in the fishery. Entry, however, could still be costly, if most rockfish eligible licenses carry substantial history in other fisheries.

Entry to the non-trawl sector is likely to be similar to entry in the status quo fishery. In recent years, non-trawl participants have harvested a very small portion of the target rockfish TACs. Unless harvests can be increased substantially in the future, the relatively small 2.5 percent allocation should be adequate to support any participants in this sector that wish to enter the fisheries.

2.5.13. Effects on fishing crew

The effects on fishing crew of the different pilot program alternatives are likely to be the same. To simplify the analysis the discussion of those alternatives are consolidated in a single discussion.

Status quo

Crew participation and compensation in the rockfish fishery are likely to continue in their current manner, if the status quo management is continued. Most crewmembers currently work in several different fisheries on the vessel that they work on during the rockfish season, while some move to other vessels for particular fisheries. Crew are compensated on a share basis, receiving a specific percent of the vessel's revenues (with crew of greater experience or in more demanding positions receiving greater shares). The existing patterns of crew participation and compensation are likely to remain the same, if the current management is maintained.

Pilot program

The development of the pilot program is likely to have some minor effects on crew. Fishing can be expected to slow and occur outside of the traditional July season. In addition, some vessels that have historically participated are likely to no longer fish in the rockfish fisheries. Notwithstanding this decrease in vessels in the rockfish fishery, it is unlikely that any vessels will entirely leave the North Pacific fisheries, as most rockfish vessels also have substantial participation in other fisheries.

Crew compensation could change in some cases. Crew on some vessels that leave the rockfish fishery are likely to lose some income, if the vessel is unable to make up the loss in revenues in other fisheries. This income is not likely to be a substantial portion of a person's annual income, but could be significant to the crewmember in some cases. In addition, crew on vessels that remain in the rockfish could realize an increase in income from increased harvests and revenues in the fishery. Catch increases are likely under all alternatives. Revenue increases should be the greatest for catcher vessels under the catcher vessel with limited processor entry because of the increased negotiating leverage of catcher vessels and product improvements under that alternative. Catcher vessel crews, however, may not fare as well under the catcher vessel cooperative with processor association alternative, as catcher vessel negotiating leverage is likely to be substantially weaker. Crew on catcher processors that participate in the fishery could benefit from consolidation of harvests on fewer vessels and possibly a minor increase in revenues, if quality improvements are realized.

2.5.14. Effects on shore-based processing crew

Shore-based processing crew could be affected by the pilot program. Affects are likely to be similar under the two catcher vessel alternatives, so they are discussed in a single section.

Status quo

Processing practices are likely to remain unchanged, if current management is maintained. In the current fishery, crews are employed processing rockfish for a relatively short period of time. When rockfish is processed, relatively large crews are necessary to maintain a flow of fish through plants that keeps pace with vessel offloads. Less attention to quality is permitted by the need to process fish quickly and processing work is compressed over a very short time period. Although most plant workers are also employed in other fisheries, the short intense season means that their employment is more sporadic. Processing landings from limited access, competitive fisheries hinders the ability of plants to develop regular employment schedules. The absence of regular employment also makes it more difficult for plants to retain good employees.

Pilot program alternatives

Shore-based processing employment should change some under the pilot program alternatives. Harvests from the rockfish fishery are likely to be distributed over a longer period of time to improve quality and to produce higher valued, more processed products. Landings are likely to be scheduled to serve particular markets, but also to facilitate the scheduling of crews. Although the rockfish fishery is a relatively small portion of the processing of participating qualified processors, the pilot program alternatives are likely to contribute to stability in processing employment, if landings are distributed across periods when plants are less utilized. This increased stability could lead to fewer processing jobs at peak times, but the remaining jobs should provide more stable and consistent employment.

The effects of the two catcher processor alternatives could be slightly different. The alternative with processor associations is likely to have greater stability across processors, as each qualified processor can be expected to be associated with a cooperative composed of vessels that made historic landings it. Each processor should have a relatively strong position in negotiations with cooperative members to schedule landings at time preferred by the processor. Under the limited processor entry alternative, processors will need to compete more aggressively for landings for the cooperatives. While landings can be expected to be scheduled to achieve efficiencies through serving available markets and addressing employment scheduling needs, it is possible that some processors will lose landings in the competition. This change in the distribution of landings could be disruptive to processing crew employment, at least in the short run.

2.5.15. 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. Excessive consolidation could mitigate management issues that might arise in this program and are most certain to arise in future programs that are more comprehensive.

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 allocations are made under the existing management, no issue concerning excessive shares exists.

Catcher processor pilot program alternatives

Under the catcher processor pilot program alternatives, participants would be permitted to consolidate the harvest of up to 60 percent of the CGOA rockfish allocation to the sector on a single vessel. Although some vessels currently have significant participation in the fishery, this consolidation is equal to approximately the allocation to the four greatest participants in the sector. Assuming the sector consolidated catch to the extent permitted by the program, few vessels are likely to develop any experience harvesting allocations under the program.

Although considerable consolidation is allowed at the vessel level, an individual cap would prevent any person from holding or using in excess of 20 percent of the sector's allocation.⁴⁹ Although this cap could prevent some consolidation, the number of persons retaining interests in this small fishery could be reduced somewhat from the initial allocation to 13 participants. The sector's participation in the fishery historically has been concentrated in relatively few participants.

Catcher vessel pilot program alternatives

The catcher vessel pilot program alternatives prevent any cooperative from controlling in excess of 30 percent of the sector's allocation in the fishery. A parallel cap would limit any eligible plant from processing excess of 30 percent of the sector's allocation.⁵⁰ This cap is slightly larger than the greatest potential allocation to a single cooperative under the alternative with processor associations, so historically, no group of vessels that could co-op under that alternative would have harvested in excess of the cap and no processor has historically processed in excess of the cap amount. The cap would prevent consolidation under that alternative by the leasing of shares among cooperatives. The extent to which the cap would prevent consolidation under the limited processor entry alternative cannot be predicted, but it would prevent consolidation to an extent that fewer than four cooperatives would exist and fish allocations under the program or fewer than four processors would participate in the fishery. Six processors have adequate processing to qualify for the program.

An additional cap would limit any individual from holding or using in excess of 5 percent of the catcher vessel sector allocation. A few participants that have historically exceeded 5 percent of the harvest in the

⁴⁹ Although this 20 percent individual cap might appear inconsistent with permitting the harvest of 60 percent on a vessel, the potential inconsistency is resolved by applying the individual cap to the allocation brought to the cooperative by an individual. So, the individual cap would limit the amount of history that a person may hold (by virtue of license holdings) and the amount of history that the person could bring to a cooperative through leases of annual allocations. Using this approach, any leasing of annual allocations by a cooperative would need to be accomplished through members to allow application of the individual caps.

⁵⁰ Under both catcher processor alternatives, a participant in that sector could bring their allocation onshore to be harvested by a catcher vessel cooperative and processed onshore. This use of catcher processor shares would be subject to catcher processor caps only (and would not count toward either a catcher vessel cap or a shore-based processing cap), since the caps apply exclusively to use and control of the different sector's allocations.

fishery would be grandfathered to the extent of their history. This cap would allow some consolidation in the fishery, particularly for the participants with relatively little qualifying history.

2.5.16. 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 race 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 the current 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.

Pilot program alternatives

Management of the fishery under an extended season with exclusive allocations to cooperatives should reduce the incentive for fishermen to continue fishing in inclement weather or when operational dangers arise. Although a person's allocation will not be jeopardized by decisions to delay fishing to reduce safety risks, some incentives may exist for persons to fish in inclement weather (including market opportunities and operational cost savings). Many proponents contend that share-based management (or rationalization) makes fisheries safer, but little empirical work has been undertaken to prove that conclusion. Overall, the incentive for participants to fish in inclement weather should be reduced under the pilot program alternatives.

2.5.17. 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

Continuation of the current management will have no effect (beyond the current effects) on other fisheries. The opening of the rockfish fisheries is scheduled to distribute effort between rockfish and flatfish in the North Pacific. Continuation of the status quo should continue the current distribution of effort.

Catcher processor alternatives

Under the catcher processor alternatives, intersector sideboards will be established to limit license holders eligible for the rockfish program from increasing their effort in other fisheries. Under the alternatives, the sector will be limited in the aggregate 1) to their historic catch of target species in Gulf of Alaska July fisheries that are typically constrained by catch of the target species and 2) to their historic average halibut mortality in Gulf of Alaska July fisheries that are typically constrained by catch of halibut. Table 26 shows the reasons for closings of the different July fisheries during the qualifying years. Although management has changed over time, in general, the rockfish fisheries in the Gulf close because of harvest of the TAC and the flatfish fisheries in the Gulf close because of halibut PSC bycatch limits. Based on these closure summaries, catch limitations on target species would be established for Western Gulf of Alaska Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish and Western Yakutat Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish, while halibut PSC limits would be established

for Gulf of Alaska flatfish (rex sole, deep-water flatfish, arrowtooth flounder, shallow-water flatfish, flathead sole) – shallow-water is pollock, Pacific cod, shallow-water flatfish, flathead sole, Atka mackerel, skates, and “other species – deep-water is sablefish, rockfish, deepwater flatfish, rex sole, and arrowtooth flounder.

Table 26. Reasons for closures in Gulf of Alaska July groundfisheries (1996-2002)

		1996	1997	1998	1999	2000	2001	2002
Western Gulf	Pacific Ocean perch	TAC	TAC	TAC	TAC	TAC	TAC	TAC
	Northern rockfish	TAC	TAC	TAC		TAC	TAC	TAC
	Pelagic shelf rockfish			TAC		halibut	halibut	halibut
	Other rockfish		TAC	TAC		bycatch	bycatch	bycatch
	Shallow water flatfish					halibut	halibut	halibut
	Deep water flatfish						halibut	halibut
	Rex sole					halibut	halibut	halibut
	Flathead sole					halibut	halibut	halibut
	Arrowtooth flounder					TAC	halibut	halibut
Central Gulf	Other rockfish					bycatch	bycatch	bycatch
	Shallow water flatfish					halibut	halibut	halibut
	Deep water flatfish					halibut	halibut	halibut
	Rex sole					halibut	halibut	halibut
	Flathead sole					halibut	halibut	halibut
	Arrowtooth flounder					halibut	halibut	halibut
West Yakutat	Pacific Ocean perch	TAC*	TAC*	TAC*	TAC*		TAC	TAC
	Northern rockfish	bycatch*	TAC*	bycatch*	bycatch*			
	Pelagic shelf rockfish			TAC*		TAC	TAC	TAC
	Other rockfish		TAC*	TAC*	TAC*	TAC	bycatch	bycatch
	Shallow water flatfish					halibut	halibut	halibut
	Deep water flatfish					halibut	halibut	halibut
	Rex sole					halibut	halibut	halibut
	Flathead sole					halibut	halibut	halibut
	Arrowtooth flounder					halibut	halibut	halibut
Gulfwide	Shallow water complex	halibut	halibut	TAC	halibut			
	Deep water complex	halibut	TAC	halibut	halibut			

* Managed in the Eastern Gulf

To estimate sideboard amounts, data from the weekending dates shown in Table 27 were used. These dates were chosen to estimate July harvests as specified by the Council motion. Table and Table show retained harvest from possible sideboard fisheries by rockfish eligible catch processor participants and catcher vessel participants, respectively. To the extent possible, each table shows the percentage of the sector’s retained catch and total retained catch taken by rockfish eligible participants. “Transfer history” is included in the tables by including both the harvests of the vessel that is currently associated with the LLP license and the vessel that was originally associated with the LLP license, in the case of transferred LLP licenses. The tables include all retained catch by eligible participants regardless of whether the species was targeted.

[estimates of halibut bycatch for deep-water and shallow-water complex will be provided for each sector – used for limitation on harvests from July fisheries that traditionally close because of halibut]

Table 27 Weekending dates for data used to generate retained harvest of sideboard species.

Weekending Dates for Sideboarded Species Table of Retained Harvests

1996	1997	1998	1999	2000	2001	2002
6-Jul	5-Jul	4-Jul	3-Jul	8-Jul	7-Jul	6-Jul
13-Jul	12-Jul	11-Jul	10-Jul	15-Jul	14-Jul	13-Jul
20-Jul	19-Jul	18-Jul	17-Jul	22-Jul	21-Jul	20-Jul
27-Jul	26-Jul	25-Jul	24-Jul	29-Jul	28-Jul	27-Jul
3-Aug	2-Aug	1-Aug	31-Jul		4-Aug	3-Aug

Table 28. Retained catch of other species by rockfish eligible catcher processor participants in July

	Eligible catcher processors				Other catcher processors		All catcher processors		All vessels		
	Participants	Retained catch (MT)	Percentage of catcher processor retained catch	Percentage of all retained catch	Participants	Retained catch (MT)	Participants	Retained catch (MT)	Participants	Retained catch (MT)	
Aleutian Islands Pacific Ocean perch	1996	5	106	100	100	0	0	5	106	5	106
	1997	0	0	0	0	0	0	0	0	0	0
	1998	3	*	*	*	2	*	5	6,851	5	6,851
	1999	5	*	*	*	1	*	6	10,258	6	10,258
	2000	3	3,873	50	50	3	3,830	6	7,702	6	7,702
	2001	3	2,068	32	32	3	4,413	6	6,481	6	6,481
	2002	0	0	0	0	0	0	0	0	0	0
	Total	5	18,514	59	59	4	12,884	9	31,398	9	31,398
Bering Sea/Aleutian Islands other flatfish (rocksole, flathead sole arrowtooth flounder, Alaska plaice, other flatfish)	1996	6	478	11	11	9	3,877	15	4,355	15	4,355
	1997	9	3,490	33	33	12	7,041	21	10,530	21	10,530
	1998	8	1,244	19	19	10	5,139	18	6,383	18	6,383
	1999	12	2,616	27	27	25	7,005	37	9,621	37	9,621
	2000	6	880	19	19	19	3,835	25	4,716	25	4,716
	2001	11	1,747	25	25	24	5,303	35	7,050	35	7,050
	2002	12	2,485	50	50	25	2,491	37	4,976	37	4,976
	Total	13	12,940	27	27	30	34,691	43	47,631	43	47,631
Bering Sea/Aleutian Islands Pacific cod	1996	6	1,135	54	54	8	974	14	2,109	14	2,109
	1997	9	595	45	45	12	722	21	1,317	21	1,317
	1998	8	434	34	*	10	845	18	1,278	21	*
	1999	12	534	31	31	25	1,162	37	1,696	37	1,696
	2000	6	324	26	25	20	914	26	1,238	51	1,275
	2001	11	1,439	48	37	24	1,550	35	2,989	92	3,899
	2002	12	1,168	43	33	25	1,571	37	2,739	91	3,586
	Total	13	5,628	42	36	29	7,738	42	13,365	116	15,654
Bering Sea/Aleutian Islands yellowfin sole	1996	0	0	0	0	4	213	4	213	4	213
	1997	8	897	54	54	11	751	19	1,648	19	1,648
	1998	5	1,322	78	78	8	379	13	1,701	13	1,701
	1999	10	1,672	66	66	11	850	21	2,522	21	2,522
	2000	2	*	*	*	4	*	6	340	6	340
	2001	10	2,077	73	73	8	764	18	2,842	18	2,842
	2002	11	7,796	51	51	22	7,482	33	15,279	33	15,279
	Total	12	13,911	57	57	24	10,632	36	24,543	36	24,543

* Withheld for confidentiality

Table 28. Retained catch of other species by rockfish eligible catcher processor participants in July (continued)

		Eligible catcher processors				Other catcher processors		All catcher processors		All vessels	
		Participants	Retained catch (MT)	Percentage of catcher processor retained catch	Percentage of all retained catch	Participants	Retained catch (MT)	Participants	Retained catch (MT)	Participants	Retained catch (MT)
Gulf of Alaska flatfish (rex sole, deep water flatfish, arrowtooth flounder, shallow water flatfish, flathead sole)	1996	16	1,567	*	24	7	*	23	*	58	6,451
	1997	14	325	60	10	4	216	18	540	46	3,275
	1998	11	1,110	66	39	5	560	16	1,669	42	2,815
	1999	10	1,138	81	77	5	262	15	1,400	38	1,481
	2000	10	1,754	58	48	5	1,290	15	3,044	33	3,633
	2001	10	861	*	35	3	*	13	*	34	2,441
	2002	5	*	*	*	2	*	7	1,453	30	2,468
	Total	16	7,817	61	35	11	4,900	27	12,717	75	22,564
Western Gulf of Alaska rockfish	1996	7	421	50	50	4	414	11	835	11	835
	1997	4	991	56	*	3	764	7	1,755	9	*
	1998	5	773	86	86	3	126	8	899	8	899
	1999	6	*	*	*	2	*	8	2,468	8	2,468
	2000	5	1,390	76	76	4	444	9	1,835	9	1,835
	2001	5	793	65	65	3	432	8	1,225	8	1,225
	2002	3	*	*	*	2	*	5	48	5	48
	Total	10	6,720	74	*	8	*	18	9,064	20	*
Western Yakutat rockfish	1996	4	*	*	*	1	*	5	2,094	9	2,098
	1997	3	1,293	100	88	0	0	3	1,293	8	1,471
	1998	1	*	*	*	1	*	2	*	5	*
	1999	3	*	*	*	1	*	4	1,297	6	1,374
	2000	1	*	*	*	0	0	1	*	2	*
	2001	1	*	*	*	1	*	2	*	3	*
	2002	0	0	0	0	0	0	0	0	0	0
	Total	5	*	*	*	2	*	7	8,357	21	8,638

* Withheld for confidentiality

Table 29. Retained harvests of other species by rockfish eligible catcher vessel participants in July.

		Eligible catcher vessels				Other catcher vessels		All catcher vessels		All vessels	
		Participants	Retained catch (MT)	Percentage of catcher vessel retained catch	Percentage of all retained catch	Participants	Retained catch (MT)	Participants	Retained catch (MT)	Participants	Retained catch (MT)
Aleutian Islands Pacific Ocean perch	1996	0	0	0	0	0	0	0	5	106	
	1997	0	0	0	0	0	0	0	0	0	
	1998	0	0	0	0	0	0	0	5	6,851	
	1999	0	0	0	0	0	0	0	6	10,258	
	2000	0	0	0	0	0	0	0	6	7,702	
	2001	0	0	0	0	0	0	0	6	6,481	
	2002	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	9	31,398	
Bering Sea/Aleutian Islands other flatfish (rocksole, flathead sole arrowtooth flounder, Alaska plaice, other flatfish)	1996	0	0	0	0	0	0	0	15	4,355	
	1997	0	0	0	0	0	0	0	21	10,530	
	1998	0	0	0	0	0	0	0	18	6,383	
	1999	0	0	0	0	0	0	0	37	9,621	
	2000	0	0	0	0	0	0	0	25	4,716	
	2001	0	0	0	0	0	0	0	35	7,050	
	2002	0	0	0	0	0	0	0	37	4,976	
	Total	0	0	0	0	0	0	0	43	47,631	
Bering Sea/Aleutian Islands Pacific cod	1996	0	0	0	0	0	0	0	14	2,109	
	1997	0	0	0	0	0	0	0	21	1,317	
	1998	1	*	*	*	2	*	3	21	*	
	1999	0	0	0	0	0	0	0	37	1,696	
	2000	5	10	26	1	20	27	25	51	1,275	
	2001	10	15	2	0	47	896	57	92	3,899	
	2002	8	156	18	4	46	691	54	91	3,586	
	Total	13	290	13	2	61	1,998	74	116	15,654	
Bering Sea/Aleutian Islands yellowfin sole	1996	0	0	0	0	0	0	0	4	213	
	1997	0	0	0	0	0	0	0	19	1,648	
	1998	0	0	0	0	0	0	0	13	1,701	
	1999	0	0	0	0	0	0	0	21	2,522	
	2000	0	0	0	0	0	0	0	6	340	
	2001	0	0	0	0	0	0	0	18	2,842	
	2002	0	0	0	0	0	0	0	33	15,279	
	Total	0	0	0	0	0	0	0	36	24,543	

* Withheld for confidentiality

Table 29. Retained harvests of other species by rockfish eligible catcher vessel participants in July. (continued)

		Eligible catcher vessels				Other catcher vessels		All catcher vessels		All vessels	
		Participants	Retained catch (MT)	Percentage of catcher vessel retained catch	Percentage of all retained catch	Participants	Retained catch (MT)	Participants	Retained catch (MT)	Participants	Retained catch (MT)
Gulf of Alaska flatfish (rex sole, deep water flatfish, arrowtooth flounder, shallow water flatfish, flathead sole)	1996	33	2,769	*	43	2	*	35	*	58	6,451
	1997	27	2,722	*	83	1	*	28	*	46	3,275
	1998	26	1,145	100	41	0	0	26	1,145	42	2,815
	1999	23	81	100	5	0	0	23	81	38	1,481
	2000	18	589	100	16	0	0	18	589	33	3,633
	2001	19	1,357	*	56	2	*	21	*	34	2,441
	2002	23	1,015	100	41	0	0	23	1,015	30	2,468
	Total	44	9,678	98	43	4	169	48	9,847	75	22,564
Western Gulf of Alaska rockfish	1996	0	0	0	0	0	0	0	0	11	835
	1997	1	*	*	*	1	*	2	*	9	*
	1998	0	0	0	0	0	0	0	0	8	899
	1999	0	0	0	0	0	0	0	0	8	2,468
	2000	0	0	0	0	0	0	0	0	9	1,835
	2001	0	0	0	0	0	0	0	0	8	1,225
	2002	0	0	0	0	0	0	0	0	5	48
	Total	1	*	*	*	1	*	2	*	20	*
Western Yakutat rockfish	1996	4	4	100	0	0	4	4	9	2,098	
	1997	5	178	100	12	0	5	178	8	1,471	
	1998	3	*	*	*	0	0	3	*	5	*
	1999	2	*	*	*	0	0	2	77	6	1,374
	2000	1	*	*	*	0	0	1	*	2	*
	2001	1	*	*	*	0	0	1	*	3	*
	2002	0	0	0	0	0	0	0	0	0	0
	Total	14	282	100	3	0	0	14	282	21	8,638

* Withheld for confidentiality

In addition, either a cooperative sideboard or a standdown would apply to any eligible license holders that elect to participate in the program. As noted earlier, most participants can be expected to opt for a cooperative level sideboard, under which a cooperative would be limited to its historic catch in sideboarded fisheries. These limitations should be sufficient to prevent participants from encroaching on other fisheries by increasing their efforts.

Under sector allocation with cooperatives, any eligible license holder that opted out of the program that has over 5 percent of the sector’s qualified Pacific Ocean perch catch would be prevented from fishing in any fishery that the license holder did not participate in the first week of July during at least two of the seven qualifying years. This provision is intended to prevent participants with multiple licenses and substantial history from opting on license out of the program and entering other fisheries in which the license holder has no history. The history from the “opt out license” would be reallocated within the sector, including to other licenses also held by the holder of the “opt out license”. To determine whether an eligible license holder participated in another fishery in the first week of July will require identification of the operative first weeks for each year. Table 29 shows the weekending dates from the first two weeks of July in each of the qualifying years. **For completing the analysis and directing NOAA Fisheries implementation of the program, the Council should identify the weekending dates that should be applied to implement this provision.** Seven licenses are estimated to have history in excess of the 5 percent threshold. **The analysis may not be able to provide further information on this provision because of confidentiality protections.** Whether this provision can effectively prevent participants from increasing participation in non-rockfish fisheries to the detriment of other persons eligible for the program cannot be determined with any certainty. Since the provision does not apply to the catcher processor cooperative alternative, to the extent that the provision provides any protection to eligible persons within the sector, that protection will not be present under that alternative. The two alternatives do not appear to differ in a way that would make the provision more applicable to one than the other.

Table 29. Rockfish opening dates and weekending dates for federal data (1996-2002).

	Opening	1 st Weekending date	2 nd Weekending date
1996	July 1	July 6	July 13
1997	July 1	July 5	July 12
1998	July 1	July 4	July 11
1999	July 4	July 3	July 10
2000	July 4	July 8	July 15
2001	July 1	July 7	July 14
2002	June 30	July 6	July 13

Catcher vessel alternatives

Catcher vessel participation in other fisheries is limited by the same sector sideboard that limits the catcher processor sector. Under sideboards eligible catcher vessel license holders will be limited in the aggregate 1) to their historic catch of target species in Gulf of Alaska July fisheries that are typically constrained by catch of the target species and 2) to their historic average halibut mortality in Gulf of Alaska July fisheries that are typically constrained by catch of halibut. Table 29 shows retained harvest from sideboard fisheries by rockfish eligible catch vessel participants. **table to be provided will show the limitations for the sector on halibut usage in July.** These sideboards should effectively prevent members of this sector from increasing their participation in other Gulf of Alaska July fisheries. In addition, the eligible catcher vessel license holders would be prohibited from entering the Bering Sea and Aleutian Islands directed fisheries for yellowfin sole, other flatfish, and Pacific Ocean perch in the month of July, as these vessels have not historically participated in those fisheries. Lastly, the eligible license holders

would be limited in the aggregate to their historic catch of Pacific cod in the Bering Sea and Aleutian Islands in the month of July. Table shows sector participation and history from the various Bering Sea and Aleutian Islands fisheries. These limitations should effectively prevent the sector from redistributing effort to increase July participation in these other fisheries.

3. Environmental Assessment

In Section 802 of the Consolidated Appropriations Act of 2004 the U.S. Congress directed to the Secretary of Commerce to establish, in consultation with the Council, a pilot program for management of the Central Gulf rockfish fisheries. In response to this directive, and at the request of NOAA Fisheries, the Council has developed two pilot program alternatives for the catcher vessel sector and two pilot program alternatives for the catcher processor sector for analysis. This section of the document contains an environmental assessment of the proposed pilot program alternatives and the status quo addressing the requirement for a regulatory impact review of E.O. 12866.

3.1. Problem Statement

The Council has developed the following problem statement defining its purpose for development of the rockfish pilot program:

The present management structure of the CGOA rockfish fishery continues to exacerbate the race for fish with:

- Increased catching and processing capacity entering the fishery,
- Reduced economic viability of the historical harvesters (both catcher vessels and catcher processors) and processors,
- Decreased safety,
- Economic instability of the residential processor labor force,
- Reduced product value and utilization,
- Jeopardy to historical groundfish community stability,
- Limited ability to adapt to Magnuson-Stevens Act (MSA) requirements to minimize bycatch and protect habitat.

While the Council is formulating GOA comprehensive rationalization to address similar problems in other fisheries, a short-term solution is needed to stabilize the community of Kodiak. Kodiak has experienced multiple processing plant closures, its residential work force is at risk due to shorter and shorter processing seasons and the community fish tax revenues continue to decrease as fish prices and port landings decrease. Congress recognized these problems and directed the Secretary in consultation with the Council, to implement a pilot rockfish program with the following legislation:

SEC. 802. GULF OF ALASKA ROCKFISH DEMONSTRATION PROGRAM. The Secretary of Commerce, in consultation with the North Pacific Fishery Management Council, shall establish a pilot program that recognizes the historic participation of fishing vessels (1996 to 2002, best 5 of 7 years) and historic participation of fish processors (1996 to 2000, best 4 of 5 years) for pacific ocean perch, northern rockfish, and pelagic shelf rockfish harvested in Central Gulf of Alaska. Such a pilot program shall (1) provide for a set-aside of up to 5 percent for the total allowable catch of such fisheries for catcher vessels not eligible to participate in the pilot program, which shall be delivered to shore-based fish processors not eligible to participate in the pilot program; (2) establish catch limits for non-rockfish species and non-target rockfish species currently harvested with pacific ocean perch, northern rockfish, and pelagic shelf rockfish, which shall be based on historical harvesting of such bycatch species. The pilot program will sunset when a Gulf of Alaska Groundfish comprehensive rationalization plan is authorized by the Council and implemented by the Secretary, or 2 years from date of implementation, whichever is earlier.

The fishing fleets have had little experience with cooperative fishery management and needs to begin the educational process. For the fishery to be rationalized all aspects of the economic portfolio of the fishery needs to

recognized. To stabilize the fishery economy all the historical players – harvesters (both catcher vessels and catcher processors) and processors need to be recognized in a meaningful way. The demonstration program is designed as a short-term program for immediate economic relief until comprehensive GOA rationalization can be implemented.

3.2. The alternatives

To address its problem statement the Council has adopted two pilot program alternatives for the catcher vessel sector and two pilot program alternatives for the catcher processor sector for analysis, in addition to the status quo. Options would create separate sectors for trawl catcher processors, trawl catcher vessels, and non-trawl catcher vessels. Under this construction, the different gear types in the catcher vessel sector would be governed by the same management program, but they would be managed as separate sectors.

For the catcher processor sector, one pilot program alternative would allow harvesters to form cooperatives, which would receive annual harvest share allocations based on the qualified harvest histories of their members. Alternatively, a catcher processor license holder would receive an annual allocation based on the history associated with the license that could be fished independently. The second catcher processor pilot program alternative would simply make an allocation to the sector based on the histories of catcher processors in the CGOA rockfish fisheries.

For the catcher vessel sector, one pilot program alternative would allow each harvester to join a cooperative in association with the processor to which it delivered the most pounds of CGOA rockfish during the processor qualifying period. Cooperatives would receive an annual harvest share allocation based on the qualified harvest history of its members. Although no specific processor delivery requirement is created by this cooperative/processor relationship, since cooperative formation depends on the processor association, some delivery arrangement is likely to be incorporated into that relationship. The second catcher vessel pilot program alternative would allow harvesters to form cooperatives, which again would receive allocations based on members' qualified harvest histories. These cooperatives would be required to deliver their landings to processors that met threshold landing requirements during the processing qualifying years. Under both of these alternatives, harvesters that choose not to join a cooperative would be permitted to fish in a competitive fishery that receives an allocation based on the harvest histories of non-members of cooperatives.

Under all of the pilot program alternatives, set asides of CGOA rockfish would be made for an entry level fishery and to support incidental harvests in other directed fisheries.

The pilot program alternatives are derived from a common set of elements with differences that reflect the different operations of the two fleets. The specific elements and options that define the alternatives follow the brief description of the alternatives (including status quo) below.

3.2.1. Alternatives considered but not advanced for analysis

The Council developed the alternatives using a list of elements and options proposed by industry proponents of the program, the public, and the Advisory Panel. A complete set of those elements and options is attached hereto as **Appendix __ [to be included]**.

[Supplement with discussion of rationale for choosing alternatives selected]

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 Gulf of Alaska 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 Gulf of Alaska 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 between 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 principal target rockfish species for this pilot project 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 POP 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 2003 are included in Table 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 280mt 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 30. Overfishing limit, allowable biological catch, total allowable catch, and catch of Central Gulf of Alaska Pacific Ocean perch (1996-2003).

Pacific Ocean Perch (mt.)				
Year	Overfishing Level	ABC	TAC	Catch
2004	9,960	8,390	8,390	8,446
2003	10,120	8,510	8,510	8,106
2002	9,760	8,220	8,220	8,262
2001	11,350	9,610	9,610	9,249
2000	15,390	9,240	9,240	8,379
1999	18,490	6,760	6,760	7,910
1998	18,090	6,600	6,600	7,452
1997	19,760	6,690	5,352	6,720
1996	10,165	3,860	3,333	5,145
Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications, 1996-2004.				
Available at: http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm				

Northern Rockfish

The northern rockfish, *Sebastes polypsinis*, 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 lifestages of northern rockfish but actual information on these lifestages 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. Most of the catch has been taken in the Central GOA management area, where the majority of the exploitable biomass is concentrated. The northern rockfish ABC 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 majority of the exploitable biomass of northern rockfish is located in the Central GOA. The weighted average apportionment utilized for the 2004 fishery was 84.10% of the biomass in the Central GOA. 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 2003 are included in Table 31.

Based on observer program data from 1990-1998, 80% of the catch of northern rockfish came from the directed fishery while 18% came as bycatch in other fisheries (Clausen and Heifetz 2004, in 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 31. Overfishing limit, allowable biological catch, total allowable catch, and catch of Central Gulf of Alaska northern rockfish (1996-2003).

Northern Rockfish (mt.)				
Year	Overfishing Level (Gulfwide)	ABC	TAC	Catch
2004	5,790	4,100	4,100	3,711
2003	6,560	4,640	4,640	4,810
2002	5,910	4,170	4,170	2,999
2001	5,780	4,280	4,280	2,588
2000	7,510	4,490	4,490	2,578
1999	9,420	4,150	4,150	4,825
1998	9,420	4,150	4,150	2,967
1997	9,420	4,150	4,150	2,870
1996	9,926	4,610	4,610	3,146
Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications, 1996-2004.				
Available at: http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm				

Pelagic Shelf Rockfish

The pelagic shelf rockfish are a managed assemblage of mid-water, schooling rockfish which inhabit the continental shelf area of the Gulf of Alaska. 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 Gulf of Alaska.

There are two distinct species of dusky rockfish in the Gulf of Alaska, 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, [supplement with information concerning the separation of species.]) The majority available data on dusky rockfish from trawl surveys and the commercial fishery is on light dusky rockfish. Currently an annual stock assessment with an age-structured model is being done for light dusky rockfish. There exists the potential in the future to separate light and dark dusky for management purposes, with dark dusky being removed to the state for jurisdiction over management, similar to black

and blue rockfish in 1998. However, at present the two are managed as one species despite the majority of the catch (??) being comprised of light dusky rockfish.

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).

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 1996-2003 are included in Table 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 32. Overfishing limit, allowable biological catch, total allowable catch, and catch of Central Gulf of Alaska pelagic shelf rockfish (1996-2003).

Pelagic Shelf Rockfish (mt.)				
Year	Overfishing Level	ABC	TAC	Catch
	(Gulfwide)			
2004	5,570	3,010	3,010	2,158
2003	8,220	3,480	3,480	2,209
2002	8,220	3,480	3,480	2,680
2001	9,040	4,080	4,080	2,436
2000	9,040	4,080	4,080	3,074
1999	8,190	3,370	3,370	3,835
1998	8,040	3,260	3,260	2,477
1997(Offshore*)	8,400	3,320*	3,320*	1,760*
1997(Nearshore**)		260**	260**	199**
1996	8,704	3,200	3,200	1,849

Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications, 1996-2004.

Available at: <http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm>

3.3.3. Allocated secondary species stocks and prohibited species catch

The following section summarizes biological, ecosystem, and fishery information concerning other species that are caught incidentally in the Central Gulf of Alaska rockfish fisheries, including sablefish, shortraker rockfish, rougheye rockfish, thornyhead rockfish, and Pacific cod.

Sablefish

Sablefish (*Anoploma fimbria*) are distributed from northern Mexico to the Gulf of Alaska, 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 Gulf of Alaska; 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 Gulf of Alaska (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 Gulf of Alaska 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 Gulf of Alaska, 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 of 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 Gulf of Alaska.

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 of 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 Gulf of Alaska: 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 1996-2003 are included in Table 33.

The sablefish quota in the Central Gulf of Alaska 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, "other species," and aggregated amounts of non-groundfish species is 1 percent. Deep water flatfish, rex sole, flatehead sole, shallow water flatfish, Pacific Ocean perch, shortraker rockfish, rougheye rockfish, northern rockfish, pelagic shelf rockfish, thornyheads, and other rockfish have an MRA of 7 percent. Sablefish may not be retained for directed arrowtooth flounder.

Table 33. Overfishing limit, allowable biological catch, total allowable catch, and catch of Central Gulf of Alaska pelagic shelf rockfish (1996-2003).

Sablefish (mt.)				
Year	Overfishing Level	ABC	TAC	Catch
	(Gulfwide)			
2004 (H&L)	22,160	16,550	5,840	6,096
2004 (Trawl)	'''		1,460	989
2003 (H&L)	20,020	6,440	5,152	5,661
2003 (Trawl)			1,288	1,429
2002 (H&L)	19,350	5,430	4,344	4,611
2002 (Trawl)			1,086	1,569
2001 (H&L)	15,720	5,410	4,328	4,434
2001 (Trawl)			1,082	1,084
2000 (H&L)	16,660	5,730	4,584	4,786
2000 (Trawl)			1,146	1,386
1999 (H&L)	19,720	5,590	4,472	4,557
1999 (Trawl)			1,118	1,316
1998 (H&L)	23,450	6,320	5,056	4,674
1998 (Trawl)			1,264	1,245
1997 (H&L)	39,950	6,410	5,128	4,935
1997 (Trawl)			1,282	1,302
1996 (H&L)	22,800	6,900	5,520	5,122
1996 (Trawl)			1,380	1,650
<i>H&L refers to hook and line fishing gear.</i>				
Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications, 1996-2004.				
Available at: http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm				

Shortraker/Rougheye rockfish

As with most other rockfish, shortraker rockfish (*Sebastes borealis*) and rougheye rockfish (*Sebastes aleutianus*) are slow growing and long-lived. They inhabit waters of the outer continental shelf and continental slope. Shortraker are consistently most abundant in the Yakutat area. Rougheye are typically most abundant in the Southeastern area. Estimates of maximum age of shortraker rockfish is 120 years, while estimates of maximum age of rougheye rockfish range from 90 years to 140 years.

Shortraker and rougheye rockfish have traditionally been combined for management purposes. Prior to 2004 there was no requirement to report catchers of these two species separately and fishermen and processors could report shortraker, rougheye or shortraker/rougheye catch. Beginning in 2005, on the suggestion of the Scientific and Statistical Committee, the management of these two species will be separated to protect shortraker rockfish from disproportionate harvest within the shortraker/rougheye group. Instead, the ABC for shortraker rockfish will be the estimated proportion of shortraker in the shortraker/rougheye catch in trawl surveys. An important component of management is the accurate estimation of shortraker catch within that group in the commercial fishery. This estimation is particularly problematic in the longline fleet, which is primarily composed of small vessels with little or no observer coverage in the Gulf of Alaska. A pilot program is underway to develop further information on catch from the unobserved portion of the fleet.

As with other slope rockfish, shortraker and rougheye appear to be influenced by periodic abundant year classes. Availability of suitable zooplankton prey in sufficient quantity for larval and post-larval rockfish may be an important determining factor of year class strength. Information is unavailable to further assess this relationship. Adult shortraker and rougheye are thought to opportunistically feed on mollusks and fish. Little is known about the abundance trends of rockfish prey items. Rockfish are preyed on by a variety of other fish at all life stages, and to some extent marine mammals during late juvenile and adult stages. Whether any particular predator has a significant or dominant effect is unknown. Predator effects on larval, post-larval, and small juvenile fish, but information on these stages and their predators is nil.

Shortraker/rougheye are harvested incidentally by both longline and trawl gear. In 1991, management of these species were separated from slope rockfish in 1991. Historically, both species were harvested in directed longline and trawl fisheries. Currently, no directed fishery exists for these species, but incidental catch is permitted under MRAs. Currently, these species are part of the “aggregated rockfish” MRA, which includes other slope rockfish species. The current MRA is 15 percent for basis species in the deep-water complex and 5 percent for species in the shallow-water complex.

Shortraker and rougheye are caught with both trawl and hook and line gear. The ABC and TAC for shortraker and rougheye are apportioned by each of the three GOA areas while the OFL is managed gulfwide. The relative proportions by areas are calculated based on comparison with the most recent trawl survey results. The largest proportional allocation in 2003 and 1999 was in the Central GOA (52% of the ABC/TAC 2003, 42% in 1999) while in previous years the Eastern GOA had the largest proportional allocation. The ABC, OFL and TAC for the complex from 1996-2003 are included in Table 34.

Discards of thornyheads by weight were highest in 2001 and 2002 in the sablefish fishery followed by rockfish and the combined flatfish fishery (Gaichas and Ianelli 2003). 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 34. Overfishing limit, allowable biological catch, total allowable catch, and catch of Central Gulf of Alaska shortraker/rougheye rockfish (1996-2003).

Shortraker/rougheye (mt.)				
Year	Overfishing Level	ABC	TAC	Catch
	(Gulfwide)			
2004	2,510	656	656	329
2003	2,340	840	840	856
2002	2,340	840	840	631
2001	2,510	930	930	998
2000	2,510	930	930	887
1999	2,740	970	970	580
1998	2,740	970	970	868
1997	2,740	970	970	931
1996	2,925	1,210	1,210	941
Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications, 1996-2004.				
Available at: http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm				

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 Gulf of Alaska 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 Gulf of Alaska, 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 Gulf of Alaska 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). Groundfish species that are commonly associated with thornyheads include: arrowtooth flounder, Pacific ocean perch, sablefish, rex sole, Dover sole, shorttraker rockfish, rougheye rockfish and grenadiers (Alverson 1964, in Gaichas and Ianelli 2003).

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.

Thornyhead rockfish are caught with both trawl and hook and line gear. Directed fishing for thornyheads is not permitted currently. The ABC and TAC for thornyheads 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 most recent trawl survey results. The largest proportional allocation in 2003 and 1999 was in the Central GOA (52% of the ABC/TAC 2003, 42% in 1999) while in previous years the Eastern GOA had the largest proportional allocation. The ABC, OFL and TAC for the complex from 1996-2003 are included in Table 35.

Discards of thornyheads by weight were highest in 2001 and 2002 in the sablefish fishery followed by rockfish and the combined flatfish fishery (Gaichas and Ianelli 2003).

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 35. Overfishing limit, allowable biological catch, total allowable catch, and catch of Central Gulf of Alaska thornyhead (1996-2003).

Thonyhead (mt.)				
Year	Overfishing Level	ABC	TAC	Catch
	(Gulfwide)			
2004	2,590	1,940	1,940	401
2003	3,050	840	840	744
2002	2,330	840	840	505
2001	2,770	970	970	523
2000	2,820	990	990	551
1999	2,800	700	700	583
1998	2,840	710	710	716
1997 (Gulfwide)	2,400	1,700	1,700	1,240
1996 (Gulfwide)	2,200	1,560	1,248	1,132
Source: NMFS Annual Catch Reports & Groundfish Harvest Specifications, 1996-2004.				
Available at: http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm				

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 Gulf of Alaska, 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 Gulf of Alaska. 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 Gulf of Alaska.

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, 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. 90 percent of the TAC is allocated to the inshore component and 10 percent to the offshore component. On the Central Gulf, 60 percent of each component's quota is allocated to the A season (January 1 to June 10), and 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 1996-2003 are included in Table 36.

Table 36. Overfishing limit, allowable biological catch, total allowable catch, and catch of Central Gulf of Alaska Pacific cod (1996-2003).

Pacific cod (mt.)				
Year	Overfishing Level	ABC	TAC	Catch
	(Gulfwide)			
2004 (Inshore)	102,000	35,800	27,116	25,129
2004 (Offshore)			2,712	1,931
2003 (Inshore)	70,100	29,000	20,421	22,584
2003 (Offshore)			2,269	2,159
2002 (Inshore)	77,100	31,680	22,311	22,665
2002 (Offshore)			2,479	2,393
2001 (Inshore)	91,200	38,650	27,225	25,255
2001 (Offshore)			3,025	2,066
2000 (Inshore)	102,000	43,550	30,672	30,257
2000 (Offshore)			3,408	1,928
1999 (Inshore)	134,000	53,170	38,642	40,928
1999 (Offshore)			4,293	3,619
1998 (Inshore)	141,000	49,080	37,548	38,031
1998 (Offshore)			4,172	3,405
1997 (Inshore)	180,000	51,400	42,321	43,406
1997 (Offshore)			1,369	271
1996 (Inshore)	88,000	42,900	38,610	42,213
1996 (Offshore)			4,290	5,351

Halibut

Pacific halibut (*Hippoglossus stenolepis*) range from the Eastern Bering Sea to Oregon, with the center of abundance in the Gulf of Alaska. 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 a 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.

NOAA Fisheries regulates the bycatch of halibut in Gulf of Alaska groundfish fisheries. The Council and NOAA Fisheries set mortality rates each year and TAC apportionments each year for each gear and target fishery group. In limited access fisheries, NOAA Fisheries monitors halibut mortality throughout the year (including using extrapolated estimates for unobserved vessels), closing fisheries when the applicable bycatch mortality limit is estimated to be reached (50 CFR 79.21). Other measures have been used to reduce halibut bycatch including area closures, careful release requirements, a vessel incentive program to hold individual vessels accountable for excessive bycatch, public reporting of individual bycatch rates, and gear modifications.

In recent years, the halibut mortality limit in the Gulf of Alaska trawl fisheries has been 2,000 metric tons. Of this, 800 metric tons is allocated to the deep-water complex, which includes the rockfish fisheries. This allocation is split among seasons, with the third season (starting in July, when the rockfish fisheries open) being allocated 400 metric tons. If the halibut mortality limit is reached prior to the catch of the rockfish TAC, the rockfish fisheries are closed for the season and reopened when a rollover of any amounts of mortality not used in the first two seasons comes available in September. In the Central Gulf of Alaska trawl rockfish fisheries, a halibut mortality rate of 67 percent was set for 2005 and 2006 in the TAC specification process.

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 harvest 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. Prohibited species include: 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 37 provides an overview of the prohibited species catch that has resulted from the CGOA rockfish fishery over the seven year period from 1996-2002. 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 harvested, not the weight of the harvest, with the exception of herring. The last column in the table shows the harvest of herring in kilograms.

Table 37. Prohibited Species Catches in the Targeted CGOA Rockfish Fishery - 1996-2002

year/sector	targeted groundfish (mt.)	halibut mortality (nos)	bairdi mortality (nos)	red king crab mortality (nos)	chinook salmon mortality (nos)	other salmon mortality (nos)	other king crab mortality (nos)	other tanner crab mortality (nos)	herring mortality (kgs.)
1996 CP totals	7,112.00	50.6	60.83	0	14.68	0.19	422.52	393.18	20.4
1997 CP totals	8,718.50	143.8	62.19	0	2,201.69	362.24	456.28	0	0
1998 CP totals	9,049.50	146.4	19.2	0	51.79	145.55	276.66	0	0
1999 CP totals	9,322.90	168.6	173.52	226.09	140.53	619.7	332.05	0	0
2000 CP totals	6,202.20	48	0.19	0	905.71	81.5	279.2	0	57.5
2001 CP totals	7,881.40	110.6	1,615.10	0	176.98	129.93	324.68	36	0
2002 CP totals	6,114.40	111	724.49	0	1,139.02	671.17	354.25	0	0
1996 CV totals	7,340.20	93	4,172.38	0	121.23	49.74	75.4	163.84	0
1997 CV totals	4,669.50	49.5	6,770.81	0	0	0	0	0	0
1998 CV totals	5,680.20	86.8	2,726.97	0	55.42	207.7	82.38	0	0
1999 CV totals	8,797.20	124.3	384.54	5.23	328.02	909.44	130.59	0	0
2000 CV totals	10,574.30	136.4	223.51	0	210.79	485.29	0	0	0
2001 CV totals	5,887.30	114.8	12.16	0	51.2	144.38	39.11	0	0
2002 CV totals	10,143.60	95.1	178.36	0	107.89	222.91	21.12	0	0

Source: NMFS, based on GOA observer data, 1996-2002

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 38 shows the annual harvest of the non-allocated secondary species for the period from 1996 through 2002 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.

Table 38. Incidental catch of unallocated species by sector in the Central Gulf of Alaska target rockfish fishery (1996-2002).

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Atka Mackerel	1996	CP	1.02	8.96
Atka Mackerel	1997	CP	1.02	7.40
Atka Mackerel	1998	CP	0.04	38.20
Atka Mackerel	1999	CP	0.13	0.75
Atka Mackerel	2001	CP	6.90	17.92
Atka Mackerel	2002	CP	11.08	29.57
total 1996-2002 harvest			20.18	102.80

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Atka Mackerel	1996	CV	2.61	8.96
Atka Mackerel	1998	CV	0.00	38.20
Atka Mackerel	1999	CV	0.00	0.75
Atka Mackerel	2000	CV	1.29	2.45
Atka Mackerel	2001	CV	0.00	17.92
Atka Mackerel	2002	CV	15.02	29.57
total 1996-2002 harvest			18.92	97.85

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Arrowtooth Flounder	1996	CP	271.04	19,739.55
Arrowtooth Flounder	1997	CP	524.86	12,619.02
Arrowtooth Flounder	1998	CP	773.99	9,589.66
Arrowtooth Flounder	1999	CP	937.77	11,458.38
Arrowtooth Flounder	2000	CP	589.04	17,633.50
Arrowtooth Flounder	2001	CP	326.89	12,732.61
Arrowtooth Flounder	2002	CP	394.23	14,894.73
total 1996-2002 harvest			3,817.82	98,667.45

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Arrowtooth Flounder	1996	CV	1,507.46	19,739.55
Arrowtooth Flounder	1997	CV	476.85	12,619.02
Arrowtooth Flounder	1998	CV	659.36	9,589.66
Arrowtooth Flounder	1999	CV	1,232.85	11,458.38
Arrowtooth Flounder	2000	CV	1,659.44	17,633.50
Arrowtooth Flounder	2001	CV	1,035.09	12,732.61
Arrowtooth Flounder	2002	CV	746.62	14,894.73
total 1996-2002 harvest			7,317.68	98,667.45

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Flathead Sole	1996	CP	7.48	2,165.45
Flathead Sole	1997	CP	13.59	1,933.09
Flathead Sole	1998	CP	5.91	1,167.92
Flathead Sole	1999	CP	6.64	686.67
Flathead Sole	2000	CP	2.39	1,270.62
Flathead Sole	2001	CP	19.64	1,309.87
Flathead Sole	2002	CP	2.64	1,724.84
total 1996-2002 harvest			58.27	10,258.47

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Flathead Sole	1996	CV	99.76	2,165.45
Flathead Sole	1997	CV	32.24	1,933.09
Flathead Sole	1998	CV	12.53	1,167.92
Flathead Sole	1999	CV	50.90	686.67
Flathead Sole	2000	CV	71.62	1,270.62
Flathead Sole	2001	CV	70.93	1,309.87
Flathead Sole	2002	CV	17.07	1,724.84
total 1996-2002 harvest			355.03	10,258.47

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Other flatfish	1996	CP	59.83	10,853.66
Other flatfish	1997	CP	115.71	9,983.95
Other flatfish	1998	CP	37.52	5,386.01
Other flatfish	1999	CP	33.46	4,144.98
Other flatfish	2000	CP	28.10	7,129.99
Other flatfish	2001	CP	70.45	6,613.22
Other flatfish	2002	CP	48.55	7,444.01
total 1996-2002 harvest			393.62	51,555.82

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Other flatfish	1996	CV	579.42	10,853.66
Other flatfish	1997	CV	158.68	9,983.95
Other flatfish	1998	CV	97.39	5,386.01
Other flatfish	1999	CV	157.09	4,144.98
Other flatfish	2000	CV	490.82	7,129.99
Other flatfish	2001	CV	459.48	6,613.22
Other flatfish	2002	CV	154.76	7,444.01
total 1996-2002 harvest			2,097.63	51,555.82

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Other rockfish	1996	CP	489.67	1,278.30
Other rockfish	1997	CP	843.70	1,184.31
Other rockfish	1998	CP	553.51	828.71
Other rockfish	1999	CP	252.77	688.32
Other rockfish	2000	CP	221.47	550.54
Other rockfish	2001	CP	220.85	461.60
Other rockfish	2002	CP	367.93	600.34
total 1996-2002 harvest			2,949.90	5,592.12

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Other rockfish	1996	CV	382.53	1,278.30
Other rockfish	1997	CV	32.98	1,184.31
Other rockfish	1998	CV	58.33	828.71
Other rockfish	1999	CV	307.17	688.32
Other rockfish	2000	CV	61.91	550.54
Other rockfish	2001	CV	34.91	461.60
Other rockfish	2002	CV	49.60	600.34
total 1996-2002 harvest			927.43	5,592.12

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Other species	1996	CP	54.38	3,699.30
Other species	1997	CP	98.05	4,508.58
Other species	1998	CP	63.85	2,691.32
Other species	1999	CP	60.01	2,778.81
Other species	2000	CP	55.01	4,982.18
Other species	2001	CP	118.04	4,334.61
Other species	2002	CP	115.54	3,444.54
total 1996-2002 harvest			522.18	20,540.47

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Other species	1996	CV	65.24	3,699.30
Other species	1997	CV	63.52	4,508.58
Other species	1998	CV	45.85	2,691.32
Other species	1999	CV	153.01	5,557.62
Other species	2000	CV	307.77	12,030.97
Other species	2001	CV	474.68	13,000.62
Other species	2002	CV	373.58	10,615.65
total 1996-2002 harvest			1,405.78	38,523.78

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Pollock	1996	CP	27.02	25,653.92
Pollock	1997	CP	130.10	57,977.89
Pollock	1998	CP	35.73	88,078.00
Pollock	1999	CP	18.51	68,273.75
Pollock	2000	CP	17.03	47,685.81
Pollock	2001	CP	11.85	37,663.33
Pollock	2002	CP	7.50	31,437.34
total 1996-2002 harvest			247.73	356,770.05

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Pollock	1996	CV	48.85	25,653.92
Pollock	1997	CV	47.10	57,977.89
Pollock	1998	CV	47.97	88,078.00
Pollock	1999	CV	30.94	68,273.75
Pollock	2000	CV	117.07	47,685.81
Pollock	2001	CV	53.38	37,663.33
Pollock	2002	CV	92.80	31,437.34
total 1996-2002 harvest			438.11	356,770.05

Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Rex Sole	1996	CP	40.88	5,202.28
Rex Sole	1997	CP	87.18	2,437.59
Rex Sole	1998	CP	28.31	2,194.75
Rex Sole	1999	CP	32.17	2,392.90
Rex Sole	2000	CP	12.14	2,700.10
Rex Sole	2001	CP	65.43	2,490.94
Rex Sole	2002	CP	55.64	2,618.59
Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Species	Year	Sector	Sector harvest (mt.)	Total CGOA harvest (mt.)
Rex Sole	1996	CV	202.20	5,202.28
Rex Sole	1997	CV	52.29	2,437.59
Rex Sole	1998	CV	24.70	2,194.75
Rex Sole	1999	CV	116.00	2,392.90
Rex Sole	2000	CV	73.14	2,700.10
Rex Sole	2001	CV	151.66	2,490.94
Rex Sole	2002	CV	163.14	2,618.59
total 1996-2002 harvest			783.12	20,037.16

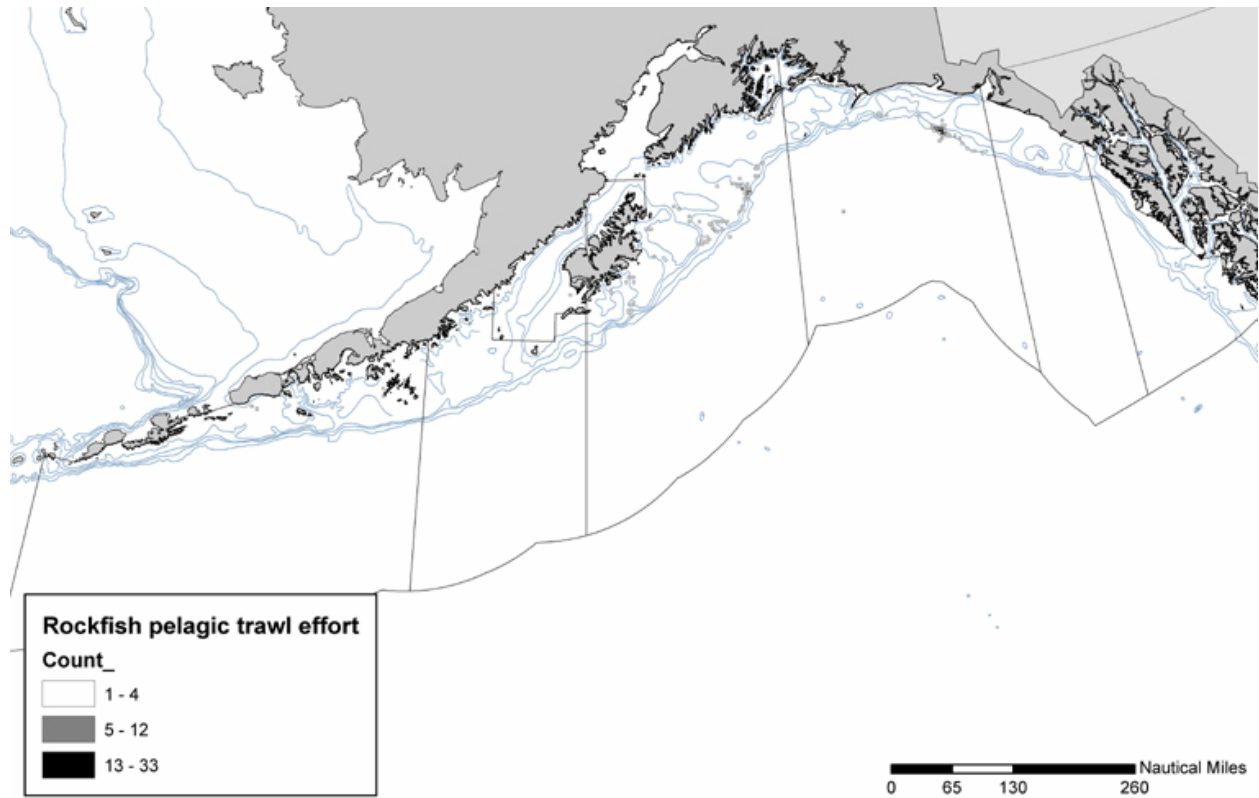
3.3.6. Benthic habitat and essential fish habitat

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 health 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 are scheduled to be implemented by August 13, 2006.

Figure 3 shows the concentration of observed rockfish pelagic trawl hauls from 1990 to 2002. The figure suggests that slope rockfish pelagic trawl fisheries (including all three of the CGOA target rockfish fisheries) occur at relatively low effort levels (fewer than 33 observed hauls/25 square kilometers from 1990 to 2002) in all locations in the Gulf of Alaska. The areas of greatest concentration are on the slope south of the Kenai Peninsula, with fewer areas of concentration south of Kodiak Island.

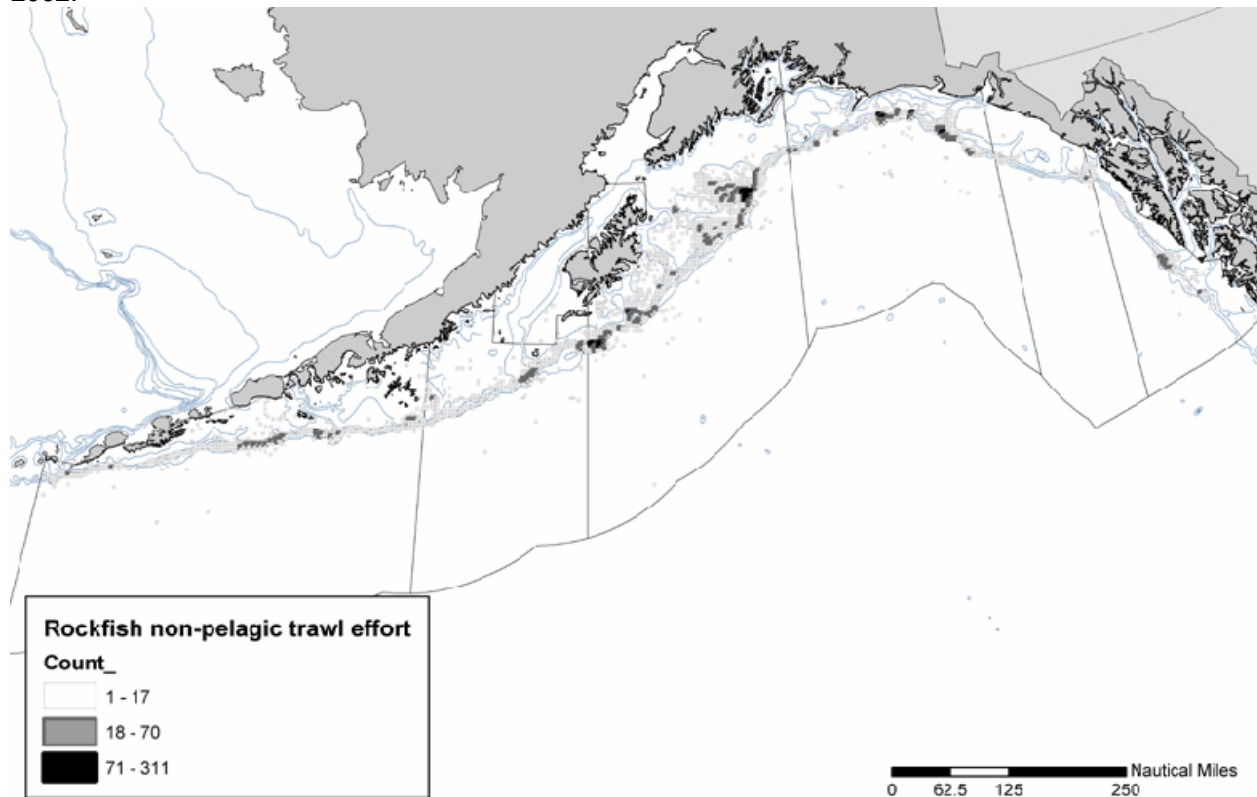
Figure 4 shows the concentration of observed rockfish non-pelagic (bottom) trawl hauls from 1990 to 2002. The figure suggests that bottom trawl fishery for slope rockfish has taken place at relatively low effort levels all along slope areas. As with the pelagic trawl effort, concentrations of bottom trawl effort (more than 71 observed hauls/25 square kilometers from 1990 to 2002) in the Central Gulf have occurred south of Kodiak Island and south of the Kenai Peninsula. The Pacific Ocean perch fishery occurs over sand, gravel, and mud at depths of 90 to 200 fathoms. The northern rockfish and pelagic shelf rockfish fisheries occur over rock, gravel, and hard sand at depths of 40 to 80 fathoms. The analysis of the EIS provides detailed descriptions of EFH and the effects of fishing on EFH (NMFS, 2004).

Figure 3. Observed slope rockfish pelagic trawl effort (hauls/25 square kilometers), 1990 to 2002.



Source: Cathy Coon, NPFMC Staff, North Pacific Observer Program Data.

Figure 4. Observed slope rockfish non-pelagic (bottom) trawl effort (hauls/25 square kilometers), 1990 to 2002.



Source: Cathy Coon, NPFMC Staff, North Pacific Observer Program Data.

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.

Of the species listed under the ESA and present in the action area, some may be negatively affected by commercial groundfish fishing. Section 7 consultations with respect to the actions of the Federal groundfish fisheries have been done for all the species listed above, either individually or in groups. Additional information on endangered and threatened species appears in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (NMFS 2004).

3.3.8. Forage fish

Forage fish are those species that are a critical food source for many marine mammal, seabird, and fish species. Biomass estimates of forage fish are uncertain because independent surveys for forage fish have not been implemented. Preliminary estimates from ecosystem models suggest that stocks of forage fish are stable. Catch of forage fish by commercial fisheries is small and results in insignificant forage fish mortality. Additional detail analysis of the effects of commercial fisheries on forage fish appears in the

Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (NMFS 2004).

3.3.9. Marine mammals

Marine mammals not listed under the ESA that may be present in the BSAI and GOA include cetaceans [minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), Dall's porpoise (*Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*) and the beaked whales (e.g., *Berardius bairdii* and *Mesoplodon* spp.)] and pinnipeds [northern fur seals (*Callorhinus ursinus*) and Pacific harbor seals (*Phoca vitulina*)] and the sea otter (*Enhydra lutris*).

Direct and indirect interactions between marine mammals and groundfish harvest occur due to overlap in the size and species of groundfish harvested in the fisheries that are also important marine mammal prey and due to temporal and spatial overlap in marine mammal foraging and commercial fishing activities. A detailed analysis of the effects of commercial fisheries on marine mammals appears in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (NMFS 2004).

3.3.10. Seabirds

Many seabirds occur in Alaskan waters indicating a potential for interaction with commercial fisheries. The most numerous seabirds in Alaska are northern fulmars, storm petrels, kittiwakes, murrelets, auklets, and puffins. These groups, and others, represent 38 species of seabirds that breed in Alaska. Eight species of Alaska seabirds breed only in Alaska and in Siberia. Populations of five other species are concentrated in Alaska but range throughout the North Pacific region. Marine waters off Alaska provide critical feeding grounds for these species as well as others that do not breed in Alaska but migrate to Alaska during summer, and for other species that breed in Canada or Eurasia and overwinter in Alaska. A detailed analysis of the effects of commercial fisheries on seabirds appears in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (NMFS 2004).

3.3.11. The ecosystem

An ecosystem is a spatially explicit area that includes all organisms and components of the abiotic environment within its boundaries. The Gulf of Alaska 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.

[background section to be provided – mostly discussion of Kodiak and processing crews]

3.3.13. Economic and socioeconomic factors

[summarized from the RIR]

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 alternatives. Predictability of these individual actions and their effects is constrained by the novelty of the programs 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.

Although the management of the catcher vessel sector and the catcher processor sector are similar under the different alternatives, those different sectors are likely to The analysis

3.4.1. Effects on Management

[To be added – summary of relevant portions of the discussion from RIR – significant differences are:

- 1) timing of seasons
- 2) management of catch (cooperatives v. limited access)
- 3) management and oversight of catch (including PSC)]

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 are likely to be similar to current patterns of fishing. Trawl catch is likely to dominate the fisheries, with that catch concentrated shortly after the early July opening. (Table 1 above lists season openings and closings for the rockfish fisheries.)

Catch of catcher vessels typically occurs close to port because of the need to offload harvests and return to the fishing grounds to maximize total catch. In addition, processors have demanded that fishermen limit trips to less than 72 hours as a means of ensure quality of catch. The limitation on fishing trip time effectively limits 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 is concentrated in the grounds near Kodiak. While catcher processors are also subject to the time limitation of the season, since they process their catch on board, their fishing activity is not spatially limited in the same manner as catcher vessel harvests.

Participants are likely to continue to catch valuable secondary species (Pacific cod, sablefish, thornyhead rockfish, shortraker 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 try to strike a balance of time harvesting target rockfish and valuable secondary species in an attempt to maximize their total revenues.

Pilot program alternatives

For the most part fishing patterns are likely to be similar under all of the pilot program alternatives, so those patterns are summarized in this single discussion.

The two most pronounced differences in fishing practices that are likely under the pilot program are the spatial and temporal distribution of catch. Because the programs allocate cooperative fishing privileges, which may be fished during an extended season, participants in the program are likely to slow their rate of harvest and distribute that harvest over greater time and a larger area.

Changes in activities across the two sectors are likely to differ somewhat because of operational requirements. Catcher vessels have typically been limited in the range of fishing activity by processor demands related to the quality of landings. Typical rockfish fishing trips last less than 72 hours. As participants in the pilot program alternatives strive to improve quality of landings, it is unlikely that fishing trip lengths will lengthen. As a result, catcher vessel fishing is still likely 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 may distribute their catch over larger areas of the grounds. The extent of this distribution of catch could be limited, if catcher processors perceive a cost reduction benefit to concentrating catch in one area. If catch is consolidated on a few catcher processors, concentration of landings temporally is more likely.

Both sectors should 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 are likely to schedule fishing to avoid conflicts with their participation in other fisheries. At a minimum, one would expect substantial fishing to occur prior to or after the traditional July season to allow participants to fish in other July fisheries. Catch may also be distributed throughout the season (by catcher vessels particularly) to attempt 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 strictly 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. One reason that the current opening is scheduled for early July is to avoid halibut bycatch. The extent to which participants will be able to harvest rockfish at other times and avoid halibut cannot be predicted. If participants find that halibut bycatch is relatively high outside of the traditional season, they are likely to restrict their fishing to times when halibut bycatch rates are low.

3.4.3. Effects on target rockfish stocks

Status quo

Current management of the fisheries and fishing patterns should continue under the status quo. Rockfish are conservatively managed under in the current fishery, with from the limited access fishery harvests limited by TAC. Under this management a TAC can be exceeded, if managers have difficulty projecting when the fleet will have completed harvest of the TAC. Allowable biological catch limits are rarely, if ever exceeded, and it can be expected that overfishing limits will not be exceeded.

Pilot program alternatives

The pilot 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 the change in management, 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 current management, in which effort is concentrated as a result of participants attempting to maximize their catch. 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 revenues. 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.

In addition, under some of the alternatives, participants could elect to participate in a limited access fishery similar to the current management. Few participants are expected to elect to fish in this fishery, primarily because catch of secondary species will be constrained (see discussion in 3.7.2 below). Catch of target rockfish will be limited by the allocation to the limited access fishery, so, total harvest of target rockfish by rockfish fishery participants will be limited by the overall TAC. Harvests from a limited access fishery are likely to be concentrated similar to the catch in the current fishery, which does not have any negative impact on target rockfish stocks. In conclusion, no negative impacts to rockfish stocks are expected from any of the pilot program alternatives.

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 pilot program. Those species are Pacific cod, sablefish, shortraker, rougheye, and thornyheads. In addition, halibut mortality will be allocated under the pilot program alternatives. This section briefly examines the effects on the stocks of those species.

Status quo

Under the status quo management, catch of secondary species in the target rockfish fishery will continue to be limited by MRA and by TACs that limit overall catch from all fisheries. Incidental catch of Pacific cod and sablefish in the rockfish fishery is approximately 15 percent of the TAC of those species in the Central Gulf of Alaska. Incidental catch of thornyheads by the rockfish fisheries during the qualifying years was approximately 25 percent of the Central Gulf total catch, while incidental catch of shortraker/rougheye (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 in the rockfish fishery is limited by MRA, with total catch limited by the current system of putting species in bycatch status, if the TAC is reached and closing fisheries that incidentally catch the species, if the allowable biological catch is reached. In addition, separate TACs for shortraker and rougheye will be established in 2005 to ensure the integrity of their independent stocks.

Halibut is managed as PSC in the CGOA rockfish fisheries. Catch of halibut is required to be discarded and is accounted for against the deep-water complex PSC allocation. Although halibut PSC has occasionally required the closure of the target rockfish fisheries (see Table 1), the fishery does not have negative effects on halibut stocks.

Pilot program alternatives

Similar to the target rockfish stocks, no negative effects on secondary species stocks are expected to occur under the pilot program alternatives. Catch of these species will be limited by cooperative allocations, which are more restrictive than the current MRAs.⁵¹ In addition, discards are not permitted for these species under the pilot program. Management of these allocations should contribute to more precise management of stocks under the program. Overall harvests will continue to be limited by TACs that apply to total catch from all fisheries.

As noted above, some rockfish participants could elect to participate in a limited access fishery. Secondary species harvest from any such limited access fishery will be limited to the allocation to participants in the limited access fishery using reduced MRAs. These reduced MRAs should be a substantial disincentive for participation in the limited access fishery. In any case, harvests of secondary species will be limited to the allocation, which should ensure that overall TAC is not exceeded. Overall, the pilot program alternatives should have no negative effects on these stocks.

The pilot 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 could take place out of the traditional July season (when halibut bycatch has been observed to be low), mortality will be constrained by the allocations of halibut mortality. The allocations of halibut are based on historic halibut mortality usage in the fisheries and will not allow overall halibut mortality in Central Gulf of Alaska fisheries to exceed historic levels. Although some participants in the pilot program could elect to participate in a limited entry fishery under some of the alternatives, these limited access fisheries will be prosecuted under strict limitations on halibut mortality, which are also based on historic halibut mortality in the rockfish fisheries. As a result, the limited access fishery should not increase halibut mortality in the rockfish fisheries.

In conclusion, the pilot program alternatives should have no negative impact on halibut stocks.

⁵¹ For the catcher processor sector an MRA will apply to Pacific cod harvests that will limit catch to

Halibut – may find higher bycatch outside of the July season, but have the flexibility to stop fishing – limited by historic halibut harvests in any case.

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 the status quo and the pilot program 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.

As a part of the analysis of comprehensive rationalization of the Gulf of Alaska groundfish fisheries, the impact of all trawl groundfish fisheries on the prohibited species catch will be examined.

3.4.6. Effects on stocks of other unallocated species

Fishing patterns are not expected to differ under any of the alternatives (including the status quo and the pilot program alternatives) in a manner that will affect catch of unallocated species. Consequently, no adverse effects on prohibited species catch are expected under any of the alternatives.

3.4.7. Effects on benthic habitat and essential fish habitat

Status Quo

Maintaining the current management will perpetuate current fishing practices and concentrate fishing for rockfish temporally and spatially. Effort levels are considered low and occur in areas of less sensitive habitat (rock, gravel, mud, and sand). The current fishing has minimal and temporary effects on benthic habitat and essential fish habitat (EFH EIS). These effects are likely to continue, if current management is maintained.

Pilot program alternatives

Under the pilot program alternatives rockfish fishing could be distributed over a longer season and may disperse spatially, as a result of the removal of time constraints by the cooperative allocations. The relatively low effort levels of this fishery along slope areas is likely to continue. Concentrations of bottom trawl effort in the Central Gulf could be reduced to some extent, but the need for catcher vessels to keep short trip lengths to maintain quality is likely to result in some continued concentration in the area of Kodiak Island. Overall, the rockfish fisheries are likely to continue to have minimal and temporary effects on habitat. No negative impacts to habitat are likely under the pilot program alternatives.

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 pilot 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. 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 Gulf of Alaska marine ecosystem are analyzed in detail in the Alaska Groundfish Fisheries Programmatic SEIS. Although some temporal and spatial dispersion of catch in the rockfish fisheries could occur under the pilot program alternatives, none of the alternatives are expected to have a negative effect on the Gulf of Alaska marine ecosystem.

3.4.13. Effects on the economic and socioeconomic factors

[to be summarized from the RIR]

3.4.14. Effects on environmental justice

The status quo alternative is expected to continue current trends in the fisheries. No negative impacts on minority or low income populations have been identified currently. No negative impacts are expected under continuation of the current management.

Under the pilot program alternatives, some consolidation of fishing activity could occur in the rockfish fisheries. This consolidation could affect income for participants on vessels that no longer participate in the rockfish fishery. 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 are 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.

Shore-based processing crews could be affected under the pilot program alternatives, although most effects are likely to benefit these workers. The pilot program alternatives are likely to result in 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. Both seasonal and fulltime positions are disproportionately held by persons with low incomes and minorities.

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. As previously discussed there is no expected impact of the alternatives on fish stocks, EFH, ESA-listed species, marine mammals,

seabirds, or the Gulf marine ecosystem. Potential economic impacts are described in the Regulatory Impact Review.

[Cumulative impacts to be added]

4. Consistency with other applicable laws

This section of the analysis examines the consistency of the rockfish pilot 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. In the current race for fish, management to a specified TAC can prove difficult. Managers 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 is likely to 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 allocation 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 pilot program, that impact conservation of the resource 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 preferred alternative is proposed to improve the efficiency of utilizing the CGOA rockfish resources. Given the current race for fish in these fisheries, concern has been expressed that both the harvest and processing sectors operate in an inefficient manner. While the allocation of quota under all of the alternatives would have economic consequences, the primary goals are to increase efficiency and equitably distribute interests in each of the fisheries. Additional benefits would be realized through the direct allocation of catch of eight species under 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 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 pilot 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 pilot program alternatives would substitute for existing LLP management of the rockfish fisheries and would not duplicate any other laws. The costs of managing the fisheries may increase under the pilot program alternatives. The costs would be due to administration of annual allocations to cooperatives and an increased need for inseason monitoring of harvests and observer coverage, which are necessary to ensure realization of other benefits from the pilot program alternatives.

National Standard 8

Conservation and management measures shall, consistent with the 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 pilot program alternative is likely to have impacts on fishing communities. The pilot program alternatives, however, should have primarily positive impacts on communities. Presently, benefits to communities from the fisheries are decreased because of inefficiencies of the race to fish under the current management. Quality of landings and products from the fisheries are decreased as participants

in both sectors race to maximize shares of the catch. The pilot program alternatives are intended to address these inefficiencies, which would result in more total profits generated from the fishery. Community participation in the fisheries is unlikely to change under the pilot program alternatives. Kodiak has historically been home to processors that have processed almost all of the rockfish landings. Under the pilot program alternatives, this trend 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 rationalization of the fisheries should reduce bycatch levels. Currently, participants in the fishery are governed by MRAs that limit their retention of non-target species. Under the pilot program alternatives, allocations of four or five species (depending on the sector) in addition to the target rockfish will be made. 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 reduce bycatch in the fisheries. In addition, slowing the race for fish should increase the ability of crews to handle bycatch carefully to increase bycatch mortality.

National Standard 10

Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

The pilot program alternatives should reduce the incentives of rockfish fishermen to fish in inclement weather or fish in a manner that compromises safety. The removal of time pressures of the race to fish could reduce fishing activity in bad weather and may result in improved safety in the fisheries. Safety concerns should also be addressed through other means while working closely the U.S. Coast Guard.

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 pilot 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 pilot program alternative, 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 pilot program alternatives could accrue to participants in 'adjacent' fisheries. The impacts would be in terms of "spillover" effects as rockfish fishery participants are able to increase effort in other fisheries after removal of the time pressures of the race to fish. Sideboard limitations included in the pilot program alternative will limit rockfish pilot program participants to their historic participation in federal Gulf of Alaska, Bering Sea, and Aleutian Island groundfish fisheries, which are most likely to receive additional effort as a result of the implementation of the pilot program. These sideboards should almost fully mitigate any negative spillover impacts in those fisheries.

5. Regulatory Flexibility Act

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 the 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, or portion thereof, or of the industry (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 action by the agency is being considered

The Council has identified the following problem statement, which this action is intended to address:

The present management structure of the CGOA rockfish fishery continues to exacerbate the race for fish with:

- Increased catching and processing capacity entering the fishery,
- Reduced economic viability of the historical harvesters (both catcher vessels and catcher processors) and processors,
- Decreased safety,
- Economic instability of the residential processor labor force,
- Reduced product value and utilization,
- Jeopardy to historical groundfish community stability,
- Limited ability to adapt to Magnuson-Stevens Act (MSA) requirements to minimize bycatch and protect habitat.

While the Council is formulating GOA comprehensive rationalization to address similar problems in other fisheries, a short-term solution is needed to stabilize the community of Kodiak. Kodiak has experienced multiple processing plant closures, its residential work force is at risk due to shorter and shorter processing seasons and the community fish tax revenues continue to decrease as fish prices and port landings decrease. Congress recognized these problems and directed the Secretary in consultation with the Council, to implement a pilot rockfish program with the following legislation:

SEC. 802. GULF OF ALASKA ROCKFISH DEMONSTRATION PROGRAM. The Secretary of Commerce, in consultation with the North Pacific Fishery Management Council, shall establish a pilot program that recognizes the historic participation of fishing vessels (1996 to 2002, best 5 of 7 years) and historic participation of fish processors (1996 to 2000, best 4 of 5 years) for pacific ocean perch, northern rockfish, and pelagic shelf rockfish harvested in Central Gulf of Alaska. Such a pilot program shall (1) provide for a set-aside of up to 5 percent for

the total allowable catch of such fisheries for catcher vessels not eligible to participate in the pilot program, which shall be delivered to shore-based fish processors not eligible to participate in the pilot program; (2) establish catch limits for non-rockfish species and non-target rockfish species currently harvested with pacific ocean perch, northern rockfish, and pelagic shelf rockfish, which shall be based on historical harvesting of such bycatch species. The pilot program will sunset when a Gulf of Alaska Groundfish comprehensive rationalization plan is authorized by the Council and implemented by the Secretary, or 2 years from date of implementation, whichever is earlier.

The fishing fleets have had little experience with cooperative fishery management and needs to begin the educational process. For the fishery to be rationalized all aspects of the economic portfolio of the fishery needs to be recognized. To stabilize the fishery economy all the historical players – harvesters (both catcher vessels and catcher processors) and processors need to be recognized in a meaningful way. The demonstration program is designed as a short-term program for immediate economic relief until comprehensive GOA rationalization can be implemented.

The CGOA rockfish fisheries are currently managed under the LLP. Under that management, the fisheries openings are scheduled, after which each participant races to harvest the available resource. Managers monitor harvests in-season and close each fishery when they estimate that the TAC for that species is reached. Under this management, fishermen and processors have made investments in the fisheries, and capacity in these fisheries exceeds that necessary to harvest and process the available resources, if harvest rates are slowed. Under current management, the fisheries are prosecuted in an economically inefficient manner that diminishes quality and value of landings and products. The race to fish also creates incentives for participants to compromise safety to increase catch. The problem facing the Council is to develop a management program which slows the race for fish, minimizes bycatch and associated mortalities, provides for improved conservation of habitat, and addresses the social and economic concerns that have arisen under current management.

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 LLP. The pilot program alternatives proposed by the Council are intended to end the race for fish under the LLP. By ending this race, the pilot program alternatives are expected to improve economic efficiency, reduce incentives for bycatch, and address a range of social concerns.

In January of 2004, Congress passed legislation directing the Secretary of Commerce, in consultation with the Council to establish the pilot program. The specific legislation authorizing this action, together with the floor statement concerning that legislation, is contained in [Appendix _____](#).

5.4. A description of, and where feasible, an estimate of the number of small entities to which the proposed rule will apply

[\[To be provided\]](#)

5.5. A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule

Implementation of any of the pilot program alternatives would change the overall reporting structure and recordkeeping requirements of the vessels and processors in the CGOA rockfish fisheries. Under all of the alternatives, cooperatives would be issued an allocation of catch.

NOAA Fisheries would require all participants in the pilot program or entry level fishery to submit an annual registration in the fall prior to the year in which the fishing occurs to facilitate the incorporation of annual allocations in the annual TAC specifications process. Each vessel would be required to track catch to avoid exceeding the allocation. In other IFQ fisheries in the North Pacific, processors provide catch recording data to managers to monitor harvest of allocations. Processors would be required to record deliveries and processing activities to aid in the administration of the program. These requirements are similar to those currently imposed, and therefore would not be new or duplicative, in the pilot program fisheries.

NMFS will be required to develop new databases to monitor cooperative allocations. These changes could require the development of new reporting systems, similar to those maintained in other North Pacific rationalized fisheries.

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 pilot 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*

[to be summarized from the RIR – with concentration on disproportional impacts on small entities]

6. References

[to be provided]

7. List of Persons and Agencies Consulted

[to be provided]

8. List of Preparers

Elaine Dinneford, North Pacific Fishery Management Council

Mark Fina, North Pacific Fishery Management Council

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**Appendix 1 to
Central Gulf of Alaska Rockfish Demonstration Program Analysis**

Participation Patterns in the Targeted Rockfish Fishery

Tables 2 and 3 show participation patterns of eligible catcher processor and catcher vessel participants in the targeted rockfish fishery. These tables include transfer of history that occurred through the transfer of licenses between vessels. In these instances, the combined participation of both vessels is reflected in the table. So, if the original vessel associated with the LLP participated in 1996 and 1997 and the current vessel associated with the LLP participated in 1999, the table would reflect a single vessel that participated in 1996, 1997, and 1999.

Table 2. Participation patterns in the targeted rockfish fishery of eligible catcher processor participants

1996	1997	1998	1999	2000	2001	2002	Number of vessels with pattern	Cumulative number of vessels
X	X	X	X	X	X	X	2	2
	X	X	X	X	X	X	1	3
	X		X	X	X	X	1	4
X	X		X		X	X	1	5
X		X	X	X		X	1	6
X				X	X		1	7
	X	X			X		1	8
	X				X		1	9
X	X	X					1	10
X	X		X				1	11
X	X						2	13
X							1	14
		X					1	15

Table 3. Participation patterns in the targeted rockfish fishery of eligible catcher vessel participants.

1996	1997	1998	1999	2000	2001	2002	Number of Vessels with Pattern	Cumulative Number of Vessels
X	X	X	X	X	X	X	12	12
X	X	X	X		X	X	1	13
X	X	X		X	X	X	1	14
X	X			X	X	X	1	15
	X	X	X	X	X	X	3	18
	X	X		X	X	X	1	19
X		X	X	X	X	X	2	21
X			X	X	X	X	3	24
		X	X	X	X	X	2	26
			X	X	X	X	1	27
					X	X	1	28
X	X		X	X		X	1	29
X	X					X	1	30
X			X			X	1	31
				X		X	1	32
						X	1	33
X	X	X	X	X	X		1	34
X	X	X		X	X		1	35
					X		1	36
X	X	X	X	X			1	37
X	X	X					2	39
X							1	40
		X					4	44
			X				4	48

Table 4 shows the number eligible participants of each type by number of years of participation. The table shows that consistency of participation varies significantly across eligible participants for both sectors.

Table 4. Number eligible participants in each sector by number of years of participation

	years of participation							Total
	1	2	3	4	5	6	7	
Number of catcher processors	2	3	4	0	3	1	2	15
Number of catcher vessels	11	2	4	1	10	8	12	48
Total number of vessels	13	5	8	1	13	9	14	63

**Appendix 2 to
Central Gulf of Alaska Rockfish Demonstration Program Analysis**

Table 1. Total catch of secondary species for catcher processors during the CGOA rockfish fisheries (1996-2002).

Species	Year	Sector	Sector Sum (mt.)	Total CGOA Harvest (mt.)
Pacific cod	1996	CP	108.68	47,564.79
Pacific cod	1997	CP	175.87	43,668.89
Pacific cod	1998	CP	214.52	41,424.46
Pacific cod	1999	CP	338.49	44,442.30
Pacific cod	2000	CP	57.39	32,180.10
Pacific cod	2001	CP	49.81	27,313.66
Pacific cod	2002	CP	95.92	25,057.27
total 1996-2002			1,040.67	261,651.47

Species	Year	Sector	Sector Sum (mt.)	Total CGOA Harvest (mt.)
sablefish	1996	CP	483.90	6,772.28
sablefish	1997	CP	538.24	6,233.63
sablefish	1998	CP	446.30	5,876.70
sablefish	1999	CP	293.21	5,874.07
sablefish	2000	CP	298.01	6,168.32
sablefish	2001	CP	303.74	5,443.70
sablefish	2002	CP	697.84	6,179.71
total 1996-2002			3,061.23	42,548.41

Species	Year	Sector	Sector Sum (mt.)	Total CGOA Harvest (mt.)
shortraker/rougheye	1996	CP	581.29	941.27
shortraker/rougheye	1997	CP	540.66	932.66
shortraker/rougheye	1998	CP	522.00	869.85
shortraker/rougheye	1999	CP	239.10	579.89
shortraker/rougheye	2000	CP	615.00	883.70
shortraker/rougheye	2001	CP	496.36	998.16
shortraker/rougheye	2002	CP	347.55	631.61
total 1996-2002			3,341.95	5,837.13

Species	Year	Sector	Sector Sum (mt.)	Total CGOA Harvest (mt.)
thornyheads	1996	CP	101.95	595.35
thornyheads	1997	CP	153.75	716.30
thornyheads	1998	CP	137.95	571.63
thornyheads	1999	CP	110.36	579.86
thornyheads	2000	CP	163.16	548.44
thornyheads	2001	CP	147.23	516.24
thornyheads	2002	CP	142.62	505.05
total 1996-2002			957.01	4,032.87

Source: 1996-2002 NMFS blend data

Table 2. Total catch of secondary species for catcher processors during the CGOA rockfish fisheries (1996-2002).

Species	Year	Sector	Sector Sum (mt.)	Total CGOA Harvest (mt.)
Pacific cod	1996	CV	225.77	47,564.79
Pacific cod	1997	CV	156.86	43,668.89
Pacific cod	1998	CV	432.76	41,424.46
Pacific cod	1999	CV	926.74	44,442.30
Pacific cod	2000	CV	1,332.90	32,180.10
Pacific cod	2001	CV	1,035.54	27,313.66
Pacific cod	2002	CV	1,466.77	25,057.27
total 1996-2002			5,577.34	261,651.47

Species	Year	Sector	Sector Sum (mt.)	Total CGOA Harvest (mt.)
sablefish	1996	CV	607.77	6,772.28
sablefish	1997	CV	293.96	6,233.63
sablefish	1998	CV	309.40	5,876.70
sablefish	1999	CV	544.43	5,874.07
sablefish	2000	CV	555.54	6,168.32
sablefish	2001	CV	457.97	5,443.70
sablefish	2002	CV	511.16	6,179.71
total 1996-2002			3,280.22	42,548.41

Species	Year	Sector	Sector Sum (mt.)	Total CGOA Harvest (mt.)
shortraker/rougheye	1996	CV	88.08	941.27
shortraker/rougheye	1997	CV	17.48	932.66
shortraker/rougheye	1998	CV	42.08	869.85
shortraker/rougheye	1999	CV	45.99	579.89
shortraker/rougheye	2000	CV	41.06	883.70
shortraker/rougheye	2001	CV	18.38	998.16
shortraker/rougheye	2002	CV	22.94	631.61
total 1996-2002			276.00	5,837.13

Species	Year	Sector	Sector Sum(mt.)	Total CGOA Harvest (mt.)
thornyheads	1996	CV	82.65	595.35
thornyheads	1997	CV	41.78	716.30
thornyheads	1998	CV	67.12	571.63
thornyheads	1999	CV	84.17	579.86
thornyheads	2000	CV	89.00	548.44
thornyheads	2001	CV	52.75	516.24
thornyheads	2002	CV	46.08	505.05
total 1996-2002			463.54	4,032.87

Source: 1996-2002 NMFS blend data

Appendix 3

Vessel List for the Pilot Rockfish Program for the Central Gulf

Following is a list of vessels with target rockfish history that may be eligibility for the Central Gulf of Alaska rockfish pilot program. For purposes of generating this list, eligibility for the program is assumed to be based on having one or more targeted landings in the Central Gulf rockfish fishery (i.e., Pacific Ocean perch, northern rockfish, and pelagic shelf rockfish) between 1996 and 2002 and a valid LLP with trawl and Central Gulf endorsements. For catcher vessels, fish ticket data were assigned a weekly target based on retained fish only (not including fish destined for meal production). For catcher/processors, NMFS Blend data weekly target determinations were used.

The list was developed by identifying vessels that:

- 1) have one or more targeted rockfish landings in the CGOA in the month of July in at least one of the years 1996 to 2002, inclusive; and
- 2) received a CGOA trawl endorsed LLP license by
 - a) meeting the requirements for that license; or
 - b) transfer.

For each license/vessel meeting these requirements, the most recent vessel associated with the LLP license is identified below. In the case of licenses that have been transferred, the original vessel is also referenced in parentheses. LLP data, current to May 7, 2004, were used to assess LLP license/vessel associations. If no vessel is currently associated with the LLP, then the original vessel, which generated the LLP license is included on the list. Only vessels that are either currently associated with an LLP license or the original vessel that generated the LLP are included on the list. Only one LLP per vessel is shown; some vessels have more than one Gulf trawl LLP. Also, note that the Intrepid Explorer, received both CV and C/P LLPs through transfer, and is included on both the catcher vessel and the catcher/processor lists.

Note: The list is being produced solely for analytical purposes and to assist industry members in coordinating discussions of the program. The presence or absence of your vessel on these lists does not establish your eligibility for the program. The methodology used is admittedly incomplete, in that it does not capture all transfers or transfer history. Eligibility for the program will be determined by NOAA Fisheries after adoption by the Council and approval by the Secretary of Commerce. Due to confidentiality requirements that protect catch data, this list will not be revised in the analysis, as doing so could compromise some data released concerning landings.

QUALIFIED CATCHER VESSELS

ALASKA BEAUTY	LLG1590
ALASKA DAWN	LLG1905
ALASKAN	LLG3764
AMBER DAWN	LLG2608
BAY ISLANDER	LLG3504
CAPE KIWANDA	LLG2636
CAPT'N ART	LLG2148
CARAVELLE	LLG2973
COHO	LLG4851
COLLIER BROTHERS	LLG1523
COMMODORE	LLG3904
DAWN	LLG2487
DEFIANT	LLG3496
DUSK	LLG2165
ELIZABETH F	LLG1273
EXCALIBUR II	LLG3521

FORUM STAR	LLG2394
GOLD RUSH	LLG3987
GREEN HOPE	LLG2188
GRUMPY J	LLG3604
HAZEL LORRAINE	LLG2567
HICKORY WIND	LLG3600
INTREPID EXPLORER	LLG3756 (NORDIC EXPLORER)
LADY JOANNE	LLG2222
LAURA	LLG3665
LESLIE LEE	LLG1183
MAR DEL NORTE	LLG1841
MAR PACIFICO	LLG2696
MARATHON	LLG2882
MARCY J	LLG2278
MICHELLE RENEE	LLG2550
MISS LEONA	LLG1710
MORNING STAR	LLG2164 (OCEAN HOPE I)
MUIR MILACH	LLG2554
NEW LIFE	LLG1367 (DOMINION)
OCEAN HOPE 3	LLG2683
PACIFIC RAM	LLG3144
PACIFIC STAR	LLG4852
PEGGY JO	LLG3594
PROGRESS	LLG3896
PROVISION	LLG2319
ROSELLA	LLG2364
TAASINGE	LLG2603
TOPAZ	LLG2535
TRAVELER	LLG3463
VANGUARD	LLG2565
WALTER N	LLG1271
WINONA J	LLG2653

(Two catcher vessels have targeted landings that do not appear to have LLP licenses)

QUALIFIED CATCHER/PROCESSORS

ALASKA RANGER	LLG2083 (ALASKA WARRIOR)
ALASKA SPIRIT	LLG3043
ALASKA VICTORY	LLG2080
ALLIANCE	LLG2905
AMERICAN NO 1	LLG2028
BILLIKIN	LLG3744 (BERING ENTERPRISE)
DEFENDER	LLG3217
GOLDEN FLEECE	LLG2524
INTREPID EXPLORER	LLG3741 (HARVESTER ENTERPRISE)
LEGACY	LLG1802
SEAFISHER	LLG2014
SOVEREIGNTY	LLG3740 (AMERICAN ENTERPRISE)
U.S. INTREPID	LLG3662
UNIMAK	LLG3957
VAERDAL	LLG1402

(5 catcher processors have targeted rockfish landings that do not appear to have LLP licenses)