

Gulf Of Alaska Rockfish Pilot Program Review

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1. Introduction

In the 2003, the U.S. Congress directed the Secretary of Commerce to establish, in consultation with the North Pacific Fishery Management Council (the Council), a pilot program for management of the rockfish fisheries in the Central Gulf of Alaska (the Central Gulf).¹ Following this directive, in 2005 the Council adopted a share-based management program under which the total allowable catch is apportioned as exclusive shares to cooperatives based on the catch history of the members of those cooperatives. As a part of the motion adopting the program, the Council included the following provision, requesting staff to prepare a review of the program after the first year of fishing:

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. The shortraker/rougeye allocation and assessment will be reviewed.

In the event this program has a duration of longer than two years, the Council will analyze the viability of the entry level fishery.

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.

This paper is intended to address the Council’s request. Section 2 summarizes the effects of the program (including the effects on harvesters, processors, and communities and conservation benefits); these effects are described in more detail in sections 14 through 19. Section 6.5 describes catch of shortraker rockfish and rougeye rockfish in the first year of the program. Sideboards are discussed in section 13.

2. Summary of effects

The most notable effect of the program is the substantial reduction in discards in the Central Gulf rockfish fisheries. In the years leading up to the program, discards of Pacific ocean perch regularly exceeded 5 percent of total catch of the species. Discards of sablefish exceeded 100 metric tons in some years and exceeded 250 metric tons in one year. Under the pilot program, discards of these species are generally not permitted by cooperatives, reducing discards to near zero. Halibut mortality also dropped sharply, most notably in the catcher vessel sector, where halibut mortality dropped from between 25 and 50 pounds per ton of directed rockfish catch to less than 5 pounds per ton of rockfish catch. In addition to the conservation benefits from these discard and mortality reductions, the use of more pelagic gear in the fishery has provided habitat benefits. Also, the allocations of and MRAs applicable to shortraker rockfish and rougeye rockfish resulted in catches of those species that were substantially below the amounts permitted (and accommodated by their TACs).

The catcher vessel sector successfully harvested most of its allocation with few overages. The sector also received a substantial portion of the catcher processor sector allocation by transfer, increasing its share of the rockfish fisheries. Ex vessel prices in the fisheries, however, remained relatively stable, despite improvements in quality that likely arose under the new management. The reason for the absence of price premiums is not apparent.

¹ Directed rockfish fisheries are prosecuted for Pacific ocean perch, northern rockfish, and pelagic shelf rockfish (which includes dusky rockfish, yellowtail rockfish, and widow rockfish) in the Central Gulf.

Shore-based processors that qualified for the program have clearly benefited from the cooperative associations that have facilitated their coordination of deliveries. The redistribution of rockfish deliveries away from times of peak salmon processing has reduced pressure on plant processing crews. Quality of landings is said to have improved because scheduling has reduced the time that catcher vessels must wait to offload. Despite these benefits, processors seem to have been unable to increase product prices in the first year of the program.

In the first year of the program, catcher processors have achieved few successes beyond the reductions in discards and halibut mortality. Two cooperatives formed in the sector, but only one vessel fished. Much of the sector's cooperative allocations was transferred to catcher vessel cooperatives and delivered to shore plants. Several factors likely contributed to the lack of cooperative fishing, including the allocations to the different sector members and incentives created by differences in sideboards applicable to vessels in cooperatives, in the limited access fishery, and that choose to opt-out of the program.

The first year performance of the entry level fisheries revealed some issues with allocations and management. Only three vessels registered to fish the entry level fisheries. Although the trawl fishery could prove problematic in future years, the two vessels in that fishery coordinated catch to avoid overharvesting the TAC, greatly simplifying management of the fishery closure. If more vessels elect to participate in the trawl entry level fishery in the future, the challenge of announcing a closing to limit catch to the TAC will increase and could force managers to close the fishery (i.e., not open the fishery at all).

The fixed gear fishery caught little of its allocation. Although only one vessel registered for the fishery, vessels that fish without LLPs and Federal fisheries permits can fish in State waters (inside 3 nm) without registering for the fishery. Despite entry level trawl vessels being permitted to fish the fixed gear allocation after September 1st, much of that allocation remained unharvested.

Processing in the entry level fisheries also suffered from complications. Entry level processors had difficulty scheduling deliveries. In addition, some participants in the fixed gear entry level fishery found the prohibition on deliveries to processors in the main program to be constraining, because they maintain markets for other species with processors in the main program. Whether the entry level fisheries management can be modified to address these issues is uncertain.

All processing in the Central Gulf rockfish fishery is undertaken in Kodiak, so Kodiak is the only community affected by the pilot program. The primary effect of the program on Kodiak has arisen from the transfer of a substantial portion of the catcher processor cooperative allocation to catcher vessel cooperatives, increasing the amount of processing at shore plants in Kodiak. Kodiak may also derive benefits from the distribution of catch over a longer season, which provides stability to processors and their crews.

3. Description of the management

To assess the effects of the pilot program requires an understanding of the change in management brought about by the program. This section summarizes license limitation management that preceded the pilot program, as well as management under the pilot program itself. The pilot program divides the direct fishery TAC of target rockfish species between the main program, which received 95 percent of the TAC, and an entry level fishery, which receives 5 percent of the TAC, as mandated by the pilot program

legislation.² The discussion of the entry level fishery management is contained in a separate section concerning that aspect of the program.

3.1. License limitation management

Prior to implementation of the rockfish pilot program, the Central Gulf rockfish fisheries were conducted under limited access management. The fisheries open to fixed participants on January 1st. Fixed participants, however, historically harvested a very small portion of the Central Gulf rockfish total allowable catch (TAC) (i.e., less than 1 percent). The trawl season opened in early July. Ongoing catch was monitored by managers with closings timed to coincide with harvest of the TAC. Trawl participants are subject to an aggregate limit on the amount of halibut that can be caught, all of which must be discarded as prohibited species catch (PSC). Participants caught a variety of species during the directed CGOA rockfish fishery (including topping off on some valuable species such as sablefish and Pacific cod). These other species were managed under “bycatch status”, with a maximum retainable allowance (MRA), which limited their retention to a percent of the retained target harvest. Harvests were monitored in-season and each of the target rockfish fisheries was closed when managers estimated that the TAC was harvested. Directed fishing allowances were 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 primary rockfish species were managed on a bycatch basis and were subject to MRAs in other target fisheries, limiting the retention of these rockfish relative to target species.

3.2. Pilot program management

The allocation to the primary pilot program is divided between the catcher vessel sector and the catcher processor sector, based on historic catches of the participants in these respective sectors. In addition, each sector is allocated the important incidental catch species (i.e., sablefish, Pacific cod, and shortraker and rougheye rockfish and shortspine thornyheads)³ based on the historic harvests of the sector. Two exceptions are that Pacific cod is not allocated to catcher processor cooperatives and shortraker and rougheye rockfish is not allocated to catcher vessel cooperatives, but are instead managed under MRAs. These species are not allocated in the different cases because the sector has limited catch of the species, which could lead to allocations inadequate to support catch of target rockfish, but MRAs are set low relative to their historic levels to discourage harvests in excess of historic catch amounts. Each sector is also allocated Pacific halibut PSC based on historic catch of Pacific halibut in the target rockfish fisheries.

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

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

² An incidental catch allowance of each target rockfish species to support directed fisheries for non-rockfish species is deducted prior to the allocations under the pilot program.

³ These species are collectively referred to as “secondary species”.

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

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

4. Allocations under the primary program

Fifteen catcher processors qualified for the rockfish pilot program, and forty-seven catcher vessels qualified for the program. Any eligible catcher processor may form a cooperative with any other eligible catcher processor. Eligible catcher vessels may form cooperatives in association with one of the five inshore processors. Both sectors have considerable qualifying history, with catcher processors having slightly more Pacific ocean perch and pelagic shelf rockfish history, and catcher vessels having more northern rockfish history (see Table 1). In addition to the target rockfish allocations, participants in the program also receive allocations of 'secondary species', as well as halibut PSC that are harvested in the rockfish fishery (see Table 2).⁴

Table 1. Eligible licenses and initial quota share allocations by sector.

Species	Sector	Number of eligible licenses	Percent of quota share allocation
Pacific ocean perch	Catcher processor	15	50.4
	Catcher vessel	47	49.6
Northern rockfish	Catcher processor	13	38.6
	Catcher vessel	45	61.4
Pelagic shelf rockfish	Catcher processor	14	54.7
	Catcher vessel	46	45.3

Source: RAM rockfish database (2007).

Table 2. Allocations under the rockfish pilot program by sector (in metric tons) (2007).

Sector	Target rockfish			Secondary species					Halibut PSC
	Pacific ocean perch	Northern rockfish	Pelagic shelf rockfish	Pacific cod	Sablefish	Thornyhead rockfish	Shortraker rockfish	Rougheye rockfish	
Catcher processor sector	3,486	1,240	1,676	*	150	128	60	203	61
Catcher vessel sector	3,432	1,970	1,388	587	386	106	*	*	115
Total allowable catch (all fisheries)	7,612	3,499	3,325	25,565	1,238	989	353	611	400**

Source: RAM rockfish database (2007).

Note: Target allocations to sectors include limited access fisheries, but exclude the entry level fishery.

No allocations of secondary species or halibut PSC are made to the limited access fisheries.

* Subject to MRA, not allocation.

** Third quarter halibut PSC only.

In the first year of the program, two catcher processor cooperatives and 5 catcher vessel cooperatives (one associated with each qualified processor) formed (Table 3). A total of 5 catcher processor licenses entered cooperatives, while 44 catcher vessel licenses entered cooperatives. The largest cooperative received an

⁴ These allocations are based on historic harvests that are both incidental and 'top off' harvests that were permitted under the maximum retainable allowances in the directed rockfish fishery.

allocation of slightly less than 20 percent of the target rockfish allocated to the program.⁵ Since 13 catcher processors receive approximately one-half of the annual allocation, it is not surprising that a catcher processor cooperative received the largest allocation under the program.

Table 3. Cooperative allocations of target rockfish in metric tons and as a percent of the total allocation to participants in the program (excluding the entry level) (2007).

Sector	Number of cooperatives	Total rockfish allocation				Pacific ocean perch		Northern rockfish		Pelagic shelf rockfish	
		Largest allocation		Smallest allocation		Largest allocation		Largest allocation		Largest allocation	
		in metric tons	as a percent	in metric tons	as a percent	in metric tons	as a percent	in metric tons	as a percent	in metric tons	as a percent
Catcher processor	2	2,595.1	19.7	1,060.0	8.0	1,699.8	24.6	284.1	8.8	611.3	20.0
Catcher vessel	5	1,884.9	14.3	801.8	6.1	1,018.9	14.7	534.8	16.7	368.0	12.0

Source: RAM rockfish database (2007).

Seven licenses (three catcher vessel licenses and four catcher processor licenses) elected to fish in their respective limited access fisheries (see Table 4). It is notable that the allocation to the catcher processor limited access is larger than the allocation to any single cooperative under the program. The catcher vessel limited access fishery (which included only relatively minor participants in the rockfish fishery) received a relatively small allocation, which was not fished by any of the three eligible catcher vessels. In addition, six catcher processor licenses elected to ‘opt-out’ of the target rockfish fisheries in the 2007 season. When a participant ‘opts-out,’ any allocation that would have been made to a cooperative, based on the history of the participant, is redistributed to other participants in the sector.

Table 4. Limited access allocations of target rockfish in metric tons and as a percent of the total allocation to participants in the program (excluding the entry level) (2007).

Sector	Number of participants	Total rockfish allocation		Pacific ocean perch		Northern rockfish		Pelagic shelf rockfish	
		Allocation in metric tons	Allocation as a percent	Allocation in metric tons	Allocation as a percent	Allocation in metric tons	Allocation as a percent	Allocation in metric tons	Allocation as a percent
Catcher processor	4	2,747.0	20.8	1,007.6	14.6	674.8	21.0	1,064.6	34.7
Catcher vessel	3	74.1	0.6	37.1	0.5	29.4	0.9	7.5	0.2

Source: RAM rockfish database (2007).

Although extraneous to the regulations, catcher vessel cooperatives in the fishery have formed an inter-cooperative association to coordinate activities across cooperatives. The organization monitors the harvest of allocations by all catcher vessel cooperatives and sets out a structure for cooperative exchanges to facilitate full harvest of quota. The measures in the inter-cooperative agreement include the establishment of reserves to be used to offset excessive harvests by cooperative members, and a structure for the consolidation of quota among cooperatives at the season’s end to allow for a ‘clean up’ or ‘sweep up’ of remaining quota.

5. Transfer of cooperative quota

In the first year of the program, several transfers of quota between cooperatives occurred (see Table 5). Transfers of quota within sectors were a relative minor share of overall allocation to the sectors. The reasons for minor in-sector transfers differ for the two sectors. In the catcher processor sector only one cooperative fished its allocation. The other cooperative elected to transfer most of its allocation to the catcher vessel sector where it could be processed by its affiliated processing plant. In the catcher vessel

⁵ In addition to the allocation to the program, an allocation of 5 percent of the TAC of each target rockfish species was made to an entry level fishery, and an incidental catch allowance was made to support all other target fisheries in the Central Gulf of Alaska.

sector, the absence of significant quota transfers likely reflects the desire of most catcher vessels (and their associated processors) to remain active in the fisheries.

A large portion of the catch processor cooperative allocations was transferred to catcher vessel cooperatives. Under the program, catcher processor cooperatives are not permitted to receive quota transfers from catcher vessels cooperatives. This ‘one-way door’ is intended to protect interests of shore plants and communities, in the event that catcher processor production efficiencies exceed those of the shore-based sector. Under these rules, approximately half of the primary rockfish allocation to catcher processor cooperatives was transferred to catcher vessel cooperatives. In addition, approximately one-half of the catcher processor sablefish allocation was transferred to catcher vessel cooperatives. The catcher processor cooperative with an affiliated shore-based processor accounted for a large share of these transfers, yet the transfers were distributed among several catcher vessel cooperatives. The second catcher processor cooperative transferred a portion of its allocation to catcher vessel cooperatives, in part, to avoid potential constraints of its allocation. With only a single vessel fishing for a single cooperative in the catcher processor sector, it was perceived that the potential for an overage, outweighed any benefit from attempting to fish the entire allocation.

Table 5. Transfers of cooperative quota between Central Gulf rockfish cooperatives by sector and species (2007).

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From	To	Species	Amount of quota	Units
catcher processor cooperatives	catcher vessel cooperatives	Pacific Ocean Perch	812.0	metric tons
		Northern Rockfish	412.0	
		Pelagic Shelf Rockfish	497.0	
		Sablefish	72.0	
		Thornyhead Rockfish	54.0	
		Halibut	83,774.8	pounds
catcher processor cooperatives	catcher processor cooperatives	Northern Rockfish	50.0	metric tons
		Shorthead Rockfish	25.0	metric tons
catcher vessel cooperatives	catcher vessel cooperatives	Pacific Ocean Perch	292.6	metric tons
		Northern Rockfish	92.2	
		Pelagic Shelf Rockfish	85.3	
		Pacific Cod	10.7	
		Sablefish	10.9	
		Thornyhead Rockfish	2.2	

Source: Cooperative reports.

Note: No data are confidential because they are reported in cooperative reports.

6. Harvests in the rockfish fisheries

The first part of this section summarizes harvests from the rockfish fisheries prior to the implementation of the pilot program. The section then goes on to describe harvest under the pilot program, comparing that catch and its distribution among vessels with the limited access management.

6.1. Harvests under limited access management

Prior to implementation of the pilot program, the rockfish fishery was managed as a limited entry derby fishery. The season for all three rockfish species opened near the first of July. Directed fishing for each species would remain open until the TAC was estimated to have been fully harvested, at which time a closure would be announced. In some seasons, the fishery closed because the trawl sector’s third quarter halibut PSC allotment for deepwater fisheries in the Central Gulf was fully used. If a portion of the TAC of a species remained available, the fishery would reopen, once the fourth quarter halibut PSC allotment was available.

Participation of trawl catcher vessels in the Central Gulf directed rockfish fishery declined slightly in the years preceding implementation of the pilot program (see Table 6). At the same time, catcher processor participation fluctuated slightly. As a result, catcher vessel landings declined, as a percentage of the total directed trawl catch in the fishery.⁶

Table 6. Estimated retained catch and participation of trawl vessels in the Central Gulf directed rockfish fishery (2003-2006).

Year	Species	Catcher processors		Catcher vessels		Total	
		Number of vessels	Catch (in metric tons)	Number of vessels	Catch (in metric tons)	Number of vessels	Catch (in metric tons)
2003	Pacific Ocean Perch	4	1,872.0	34	5,242.5	38	7,114.4
	Northern Rockfish	5	1,580.0	29	2,933.3	34	4,513.3
	Pelagic Shelf Rockfish	5	696.8	31	1,442.8	36	2,139.6
	Total	6	4,148.7	35	9,618.6	41	13,767.3
2004	Pacific Ocean Perch	7	2,989.1	32	4,856.3	39	7,845.4
	Northern Rockfish	7	1,364.3	27	2,227.5	34	3,591.8
	Pelagic Shelf Rockfish	7	735.3	31	1,340.4	38	2,075.7
	Total	8	5,088.7	32	8,424.1	40	13,512.9
2005	Pacific Ocean Perch	7	3,128.9	25	4,331.8	32	7,460.7
	Northern Rockfish	7	2,287.2	24	1,776.9	31	4,064.1
	Pelagic Shelf Rockfish	7	674.1	25	1,039.0	32	1,713.1
	Total	7	6,090.3	25	7,147.6	32	13,237.9
2006	Pacific Ocean Perch	5	3,245.2	25	4,204.8	30	7,450.0
	Northern Rockfish	5	1,870.6	23	1,739.2	28	3,609.8
	Pelagic Shelf Rockfish	5	571.6	25	951.4	30	1,523.0
	Total	6	5,687.5	25	6,895.3	31	12,582.8

Source: NMFS Catch Accounting data (2003-2006).

Catches of allocated secondary species varied across the two trawl sectors in the direct rockfish fishery in the years leading up to the program (see Table 7). Catcher vessels harvested greater amounts of Pacific cod and sablefish, while catcher processors harvested more thornyhead rockfish and shortraker rockfish and roughey rockfish. This pattern follows the historic pattern in the fishery in the qualifying years (1996-2002).

⁶ Since only trawl vessels are governed by the cooperative portion of the pilot program, only trawl catch is included here. The most fixed catch in any of the years for which data are shown, was slightly more than 50 metric tons of all target rockfish species combined.

Table 7. Estimated retained catch of allocated secondary species by trawl vessels in the Central Gulf directed rockfish fishery (2003-2006).

Year	Species	Catcher processors		Catcher vessels		Total	
		Number of vessels	Catch (in metric tons)	Number of vessels	Catch (in metric tons)	Number of vessels	Catch (in metric tons)
2003	Pacific Cod	4	41.6	32	1,457.5	36	1,499.1
	Sablefish	6	260.0	33	504.9	39	764.9
	Shortraker/Rougheye Rockfish	6	469.7	20	30.2	26	500.0
	Thornyhead Rockfish	6	343.8	29	57.5	35	401.3
2004	Pacific Cod	6	113.2	32	1,358.9	38	1,472.1
	Sablefish	8	276.4	32	515.4	40	791.9
	Shortraker/Rougheye Rockfish	8	126.8	22	10.0	30	136.8
	Thornyhead Rockfish	8	166.1	28	23.0	36	189.1
2005	Pacific Cod	6	86.4	25	723.2	31	809.7
	Sablefish	6	348.8	25	406.1	31	754.9
	Shortraker/Rougheye Rockfish	6	168.8	21	19.7	27	188.5
	Thornyhead Rockfish	6	175.5	23	27.6	29	203.1
2006	Pacific Cod	5	115.4	25	273.9	30	389.3
	Sablefish	6	161.0	25	374.5	31	535.5
	Shortraker/Rougheye Rockfish	5	150.2	21	35.5	26	185.8
	Thornyhead Rockfish	6	140.8	24	35.8	30	176.6

Source: NMFS Catch Accounting data (2003-2006).

Preceding implementation of the program, the distribution of halibut mortality between catcher vessels and catcher processors in the Central Gulf rockfish fishery generally paralleled catch of the rockfish, but catcher vessels took substantially more halibut per ton of directed rockfish catch, than did catcher processors (see Table 8).⁷ Halibut mortality of both sectors exceeded 20 pounds per metric ton of primary rockfish catch in all years leading up to program implementation, with the highest mortality exceeding 55 pounds per metric ton of primary rockfish catch in the catcher vessel sector in 2004.

Table 8. Halibut mortality of trawl vessels in the Central Gulf directed rockfish fishery (2003-2006).

Year	Catcher processors				Catcher vessels			
	Vessels	Halibut PSC mortality (pounds)	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish retained catch	Vessels	Halibut PSC mortality (pounds)	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish retained catch
2003	6	149,275.6	4,148.7	36.0	35	343,726.0	9,618.6	35.7
2004	8	111,714.3	5,088.7	22.0	32	471,532.1	8,424.1	56.0
2005	7	167,133.8	6,090.3	27.4	25	311,080.3	7,147.6	43.5
2006	6	136,235.4	5,687.5	24.0	25	180,117.4	6,895.3	26.1

Source: NMFS Catch Accounting data (2003-2006).

⁷ In considering all of the historic catch data, it should be noted that catch distribution after implementation of the program was constrained by the allocations. Since halibut catch cannot be retained, and has no direct value to trawl harvesters, it is possible that bycatch rates will vary under the pilot program management.

6.2. Harvests of primary and secondary species under the pilot program

Under the pilot program, catcher vessel participation in the rockfish fisheries has remained similar to participation levels under pre-pilot program limited access management (see Table 6 and Table 9).⁸ No catcher vessels participated in the catcher vessel limited access in the first year of the program, although the three vessels that did not join a cooperative were eligible to fish in a catcher vessel limited access fishery. These vessels likely chose not to participate, because of the small allocation that would likely not support a competitive race for fish. Harvests of catcher vessel cooperatives exceeded the catcher vessel cooperative allocations for all three primary rockfish species, but without overages because of transfers of quota from the catcher processor cooperatives. Through similar transfers from catcher processor cooperatives, the catcher vessel cooperatives harvested substantially more than their allocations of sablefish. The cooperatives harvested less than half of their collective allocations of thornyheads and Pacific cod.

Table 9. Total catch and allocation of allocated species by catcher vessel cooperatives (2007).

cv - catch alloc

Species	Number of vessels	Catch (in metric tons)	Allocations (in metric tons)		Percent of allocation harvested	
			excluding transfers	including transfers	excluding transfers	including transfers
Pacific Ocean Perch	25	4,144.3	3,394.8	4,206.8	122.1	98.5
Northern Rockfish	25	2,001.1	1,940.3	2,352.3	103.1	85.1
Pelagic Shelf Rockfish	24	1,577.0	1,380.3	1,877.3	114.2	84.0
Pacific Cod	25	271.9	587.1	NA	46.3	47.2
Sablefish	24	453.8	386.3	458.3	117.5	99.0
Thornyhead Rockfish	24	46.2	106.1	160.1	43.5	28.9

Source: Catch Accounting Data and Cooperative Reports.

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

Discards of allocated species are not permitted.

In addition to allocated species, catcher vessels in the rockfish pilot program are governed by a program specific 2 percent MRA for aggregate catch of shortraker rockfish and rougheye rockfish (see Table 10). Catcher vessel cooperatives caught substantially less shortraker and rougheye rockfish than is permitted by the MRA.

⁸ Vessels are not permitted to discard allocated species under the program (with the exception of halibut PSC), so all catch figures are total catch. In three instances vessels are reported to have made small amounts of discards. In these cases, the discards were counted against allocated quota and are included in total catch amounts in this document. Persons making these discards were issued warnings by NOAA Enforcement.

Table 10. Total catch of rockfish program MRA species by catcher vessel cooperatives (2007).

cv - catch mra

Species	Number of vessels	Catch including discards (in metric tons)	Maximum retainable amount (as a percentage of primary species catch)	Maximum retainable amount in metric tons (given primary catch)
Rougheye Rockfish	24	9.9	2	154.9
Shortraker Rockfish	19	9.4	(in aggregate)*	

Source: Catch Accounting Data and Cooperative Reports.

* Maximum retainable percentage limits aggregate retention of shortraker rockfish and rougheye rockfish.

Catcher processor participation declined in the first year of the program, as participation levels were approximately half of the level immediately preceding implementation (see Table 11).⁹ Only four catcher processors participated in the rockfish fisheries in the first year of the program, with three of those vessels participating in the limited access. Although two cooperatives formed in the catcher processor sector, one cooperative entered a single vessel into the fishery, while the other transferred its entire quota to other cooperatives in both sectors (see Table 5). The single cooperative harvested almost all of its Pacific ocean perch allocation, but did not harvest a substantial percentage of its northern rockfish and pelagic shelf rockfish allocations. The cooperative, however, received relatively small allocations of these two species in comparison to its Pacific ocean perch allocation. The cooperative also harvested most of its sablefish allocation and more than its allocation of shortraker rockfish, through transfers from the other catcher processor cooperative. It caught very little of its rougheye rockfish allocation and slightly less than a third of its allocation of thornyheads.

Three of the four vessels registered for the catcher processor limited access fishery participated in that fishery. The catcher processor limited access fishery harvested most of its Pacific ocean perch and northern rockfish allocations, but left a substantial amount of pelagic shelf rockfish unharvested.

Table 11. Total catch and allocation of allocated species by catcher processor cooperatives and limited access (2007).

cp - alloc and catch

	Species	Number of vessels	Catch (in metric tons)	Allocation excluding transfers (in metric tons)	Percentage of allocation harvested
Cooperative*	Pacific Ocean Perch	1	1,666.9	1,699.8	98.1
	Northern Rockfish	1	153.1	284.1	53.9
	Pelagic Shelf Rockfish	1	113.1	141.2	80.1
	Sablefish	1	78.2	86.6	90.3
	Shortraker Rockfish	1	43.5	34.5	126.0***
	Rougheye Rockfish	1	11.3	117.0	9.7
	Thornyhead Rockfish	1	23.1	73.8	31.3
Limited Access	Pacific Ocean Perch	3	943.4	1,007.6	93.6
	Northern Rockfish	3	584.5	674.8	86.6
	Pelagic Shelf Rockfish	3	535.4	1,064.6	50.3

Source: Catch Accounting Data and Cooperative Reports.

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

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

** Withheld for confidentiality.

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

⁹ Note that data no data shown in this table are confidential, as certain cooperative fishing is reported in the annual report of the cooperative.

Catcher processor cooperative participants are subject to an MRA for Pacific cod (see Table 12). This MRA is set lower than the 20 percent MRA applicable to most fisheries (including the rockfish fisheries prior to the pilot program) to maintain catch of the sector at its historic level. Participants in the catcher processor limited access fishery are subject to MRAs for shortraker and rougheye rockfish (in the aggregate), Pacific cod, sablefish, and thornyheads. These MRA percentages are reduced to maintain harvests below their historic amounts and to create a disincentive for participation in the limited access fishery. Catch of Pacific cod by the catcher processor sector (including both cooperative and limited access participants) was slightly less than the amount permitted by the MRA. In the limited access fishery, only catch of shortraker and rougheye rockfish under the aggregate MRA can be released because of confidentiality limitations. Catch of these two species was slightly more than half of the amount permitted under the MRA.

Table 12. Catch of species subject to MRAs by the catcher processor sector (2007).

cp - mra catch

	Species	Number of vessels	Catch including discards (in metric tons)	Maximum retainable amount (as a percentage of primary species catch)	Maximum retainable amount in metric tons (given primary catch)
Limited Access and Cooperative	Pacific Cod	3	72.7	4	77.3
	Shortraker/Rougheye	3	32.1	2	41.3
Limited Access only	Sablefish	2	*	3	61.9
	Thornyhead Rockfish	2	*	4	82.5

Source: Catch Accounting Data and Cooperative Reports.

* Withheld for confidentiality.

Since cooperative participants in the program are limited exclusively by their allocations, participants were able to pattern their fishing to receive the greatest benefit from their allocations. As a result, in a few instances, catcher vessels took trips targeting Pacific cod or sablefish (see Table 13). By limiting their catch of rockfish in these trips, harvesters are able to both reduce costs of traveling to the different grounds and increase quality of catch by limiting the extent of mixing of Pacific cod and sablefish with rockfish, the spines of which can damage more fragile fish. Over 75 percent of the Pacific cod and over 50 percent of the sablefish caught during non-rockfish target trips. During these non-rockfish target trips, few primary rockfish were harvested.¹⁰ Although the catch of sablefish and Pacific cod in this manner may be viewed by some as beyond the scope of the rockfish fishery, harvests of these species have remained at, or below, their historic levels in the rockfish fishery. In addition, these practices bring additional value to catch.

¹⁰ Some primary rockfish are harvested during these trips that are non-rockfish targets, as MRAs for shortraker and rougheye rockfish use only catch of primary rockfish as the basis for determining the MRA poundage.

Table 13. Catcher vessel trips and catch by trip target (2007).
cv targeting

Target	Vessels with at least one trip in the target	Total trips in the target	Species caught in the target	Catch (in metric tons)	Percent of total catch of the species
Pacific cod	10	11	Pacific Ocean Perch	5.2	0.1
			Northern Rockfish	0.9	0.0
			Pelagic Shelf Rockfish	0.4	0.0
			Pacific Cod	207.1	74.7
			Sablefish	30.5	6.6
Rockfish	25	130	Pacific Ocean Perch	4,145.3	99.5
			Northern Rockfish	2,000.1	100.0
			Pelagic Shelf Rockfish	1,577.0	99.9
			Pacific Cod	54.5	19.6
			Sablefish	205.7	44.2
Sablefish	14	16	Pacific Ocean Perch	16.1	0.4
			Northern Rockfish	0.0	0.0
			Pelagic Shelf Rockfish	0.9	0.1
			Pacific Cod	15.7	5.7
			Sablefish	229.1	49.2

Source: NMFS Catch Accounting Data.

6.3. Halibut catch under the primary program

Under the pilot program, the catch of cooperatives is not only limited by primary and secondary species allocations, but also by allocations of halibut PSC (see Table 14). Since halibut allocations under the program are based on historic catch of halibut in the rockfish fishery, those allocations provide a reasonable benchmark for assessing changes in halibut mortality. In the years leading up to the pilot program, vessels in the rockfish fishery averaged in excess of 20 pounds of halibut mortality for each ton of primary rockfish species (see Table 8). In the first year of the program, vessels fishing in cooperatives and the limited access fishery under the program cut halibut mortality rates substantially. Vessels in the catcher processor limited access fishery reduced their catch to approximately 13 pounds of halibut per ton of primary rockfish catch,¹¹ while the single vessel fishing in the catcher processor cooperative sector reduced its halibut mortality to less than 9 pounds of halibut per metric ton of primary rockfish catch. The catcher vessel sector reduced its halibut mortality to slightly more than 4 pounds of halibut per ton of primary rockfish species catch.¹²

This drastic reduction in halibut mortality (particularly in the catcher vessel sector) likely arises from several factors. First, vessels have exclusive allocations, allowing them to move from areas of high halibut catch without risking loss of catch in the fishery. Second, exclusive allocations also increase the incentive for participants to communicate with each other concerning catch rates, improving information concerning areas of high halibut incidental catch in the fleet and preventing repeated high halibut mortality among vessels exploring fishing grounds. Third, several vessels have begun employing new pelagic gear that limits bottom contact and halibut incidental catch. These gear changes are apparent when comparing the percentage of catch using pelagic trawl gear and non-pelagic gear in the first year of the program with catch by those gear types in the preceding years (see Table 15). In the first year of the

¹¹ In assessing the change in catch rate in the catcher processor limited fishery access, it should be borne in mind that (although not fishing as a cooperative) the vessels fishing in that fishery did not compete for the allocations of pelagic shelf rockfish, reducing the pressure to race for fish.

¹² These calculations include all halibut mortality of vessels fishing allocations under the program, including mortality in trips targeting Pacific cod and sablefish.

program over 35 percent of primary rockfish catch was with pelagic trawl, in comparison to less than 25 percent in 2006 and 6 percent or less in the preceding years. In the first year of the program, almost 80 percent of the catcher vessel fleet used pelagic gear for some of its catch, in comparison to slightly more than half of that fleet in 2006 and less than 20 percent in the preceding years. While this increase is substantial, only one vessel in the catcher vessel fleet used pelagic gear exclusively. In the catcher processor sector, two of the four active vessels used pelagic gear in the first year of the program, in comparison to no pelagic trawl gear prior to implementation of the program. Catch data by gear type cannot be revealed for the catcher processor sector because of confidentiality protections.

Participants in the program report that a primary motivation for these changes in gear types is constraining halibut allocations, which could jeopardize cooperative catches in the event that halibut bycatch exceeds allocations. The incentive for halibut mortality reductions is increased by the rollover of saved halibut mortality to other fisheries late in the year, allowing the trawl sector as a whole (including vessels that did not qualify for the pilot program) to benefit from these halibut mortality reductions. Participants report that they were able to make additional harvests of flatfish as a result of these rollovers.

Table 14. Halibut mortality of vessels in the Central Gulf rockfish pilot program (2007).

Fishery	Vessels	Halibut PSC mortality (pounds)**	Catch of primary rockfish (tons)	Pounds of halibut PSC mortality per ton of primary rockfish catch	Allocation of halibut PSC mortality (pounds)	Unused allocation (pounds)
Catcher processor limited access	3	26,313	2,063.3	12.8	NA	NA
Catcher processor cooperative*	1	16,623	1,933.1	8.6	77,761	61,137
Catcher vessel cooperative	25	32,710	7,746.0	4.2	309,817	277,107
Total	29	75,646	11,742.4	6.4	387,577***	338,244 ⁺

Source: NMFS Catch Accounting Data

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

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

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

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

Table 15. Catch by gear by sector in the Central Gulf of Alaska rockfish fishery (2003-2007).

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

Source: NMFS Catch Accounting.

6.4. Discards

Prior to implementation of the program, discards in the rockfish fishery were permitted, and in some cases, were required by MRAs. Under this management, discards were at times a large portion of the total catch of a species (see Table 16). Discards of target rockfish likely occurred with the progression of directed fishery closures. For example, once directed fishing for Pacific ocean perch closed (when its TAC was fully harvested) participants would be required to discard incidental catch of that species in excess of the MRA when targeting northern rockfish and pelagic shelf rockfish. Discards of Pacific cod

and sablefish occurred when the MRA for those species was exceeded, either through incidental catch when targeting primary rockfish or when overharvesting it relative to the MRA when ‘topping off’ at the end of trip. In either case, discards of those species were at times large relative to total catch in the rockfish fisheries. In addition, in 2003 sablefish was on PSC status for a portion of the rockfish fisheries, under which no retention of sablefish is permitted.

Under the pilot program, discards of allocated species by cooperatives are not permitted. Catcher vessel cooperatives are permitted to discard shortraker and rougheye rockfish in excess of the 2 percent aggregate MRA applicable to those species and catcher processor cooperatives are permitted to discard Pacific cod in excess of the MRA applicable to that species. These discards, however, have been negligible under the program, as less than one ton of each of these species were discarded by the cooperatives in the program. Discards, however, are permitted in the limited entry fisheries.

Approximately 10 metric tons of primary rockfish catch were discarded, substantially less than the over 200 metric ton average prior to implementation of the program. Less than one metric ton of thornyhead rockfish were discarded. Other discard amounts, however, cannot be revealed because of confidentiality protections.¹³

Table 16. Discards by sector and year in the Central Gulf rockfish fishery in metric tons and as a percentage of total catch in the fishery (2003-2006).

disc	2003				2004			
	Catcher processor discards	Catcher vessel discards	Total discards	Discards as a percent of total catch	Catcher processor discards	Catcher vessel discards	Total discards	Discards as a percent of total catch
Pacific Ocean Perch	274.0	156.6	430.6	6.1	236.3	255.9	492.2	6.3
Northern Rockfish	220.0	20.4	240.4	5.3	23.4	48.1	71.5	2.0
Pelagic Shelf Rockfish	*	*	20.0	0.9	17.7	3.8	21.5	1.0
Pacific Cod	*	172.4	*	12.7**	8.0	57.8	65.8	4.5
Sablefish	218.0	56.7	274.8	35.9	15.5	28.3	43.8	5.5
Shortraker/rougheye	78.0	29.5	107.5	21.5	8.7	0.6	9.4	6.8
Thornyhead Rockfish	15.7	11.7	27.4	6.8	10.3	20.3	30.6	16.2

	2005				2006			
	Catcher processor discards	Catcher vessel discards	Total discards	Discards as a percent of total catch	Catcher processor discards	Catcher vessel discards	Total discards	Discards as a percent of total catch
Pacific Ocean Perch	236.5	153.4	389.9	5.2	302.6	170.0	472.6	6.3
Northern Rockfish	56.8	53.6	110.5	2.7	104.7	69.8	174.5	4.8
Pelagic Shelf Rockfish	6.5	50.1	56.6	3.3	12.9	1.6	14.5	1.0
Pacific Cod	*	37.6	*	5.2**	*	70.2	*	25.6**
Sablefish	*	124.2	*	30.6**	*	*	146.7	19.4
Shortraker/rougheye	*	*	14.5	7.7	0.0	8.0	8.0	4.3
Thornyhead Rockfish	*	19.5	*	70.6**	*	43.9	*	122.6**

Source: NMFS catch accounting data (2003-2006).

* Withheld for confidentiality.

** Catcher vessel discards as a percent of total catch by the catcher vessel sector.

¹³ Total catch in the catcher processor limited access fishery (including retained and discarded catch) is shown in Table 12 and Table 13.

6.5. Catch of shortraker rockfish and rougheye rockfish under the pilot program

In its motion defining the pilot program, the Council specifically requested staff to examine catch of shortraker rockfish and rougheye rockfish under the program's allocations. During development of the program, the Council was in the process of separating management of the two species in the Gulf of Alaska to allow for more precise TAC management. In 2005, NMFS managed the two species under separate TACs for the first time. Prior to that year, the species were managed under a single TAC. Although TACs of the two species are separated, in most fisheries they remain subject to an "aggregate rockfish" MRA that limits retained catch to 5 percent or 15 percent of catch of species for which directed fishing is permitted. Under this rule, 'aggregate rockfish' catch includes catch of all *Sebastes* and *Sebastes* excluding black rockfish and blue rockfish. In part, to avoid possible overharvest of shortraker and rougheye rockfish, the Council elected to use more precise and limiting management in the rockfish pilot program. Catcher processor cooperatives are limited by a constraining allocation with no discards permitted.¹⁴ Catcher processors in the limited access fishery and all catcher vessels are limited by a 2 percent MRA applicable to shortraker and rougheye in the aggregate. This more species specific, reduced MRA is intended to limit any potential incentive to 'top off' on these two species.

Allowable catches of shortraker and rougheye by a catcher processor in the program differs with the catcher processor's choice of whether to enter a cooperative or fish in the limited access fishery (see Table 17). Generally, catcher processors are permitted to retain more shortraker rockfish and rougheye rockfish, if they join cooperatives. So, maximum retained catch by the sector would be permitted, if all catcher processors chose to join cooperatives. Yet, since discards are permitted by participants in the limited access, it is possible that total catches of shortraker rockfish and rougheye rockfish could be greater if all catcher processors chose to join the limited access than fish in cooperatives, if participants in the limited access have substantial discards. In addition, since the MRA applies to aggregate catches of shortraker and rougheye, it is possible that catches of shortraker (the species of greater biological concern) could be greater in the limited access fishery. Catcher vessels in the program are subject to an aggregate MRA that limits only retained catch and does not discern the distribution of catch by species. To ensure that catch is constrained, the Council included a provision in the program that would require shortraker to be put on PSC status for catcher vessels in the program in the event that their catch exceeds 9.72 percent of the Central Gulf TAC for the species.

¹⁴ The allocations of shortraker and rougheye to the catcher processor sector are based on specific percentages of the TAC selected by the Council determined after considering historic catches by catcher processors in the rockfish fishery (i.e., 30.03 percent of the Central Gulf shortraker TAC and 58.87 percent of the Central Gulf rougheye TAC). Each catcher processor cooperative receives a percentage of each of those allocations equal to its percentage of the sector's primary rockfish species quota shares.

Table 17. Maximum permitted catches and actual catch of shortraker and rougheye rockfish in the first year of the pilot program.

shtrkrngheye		Catcher processor	Catcher vessels	Total
Maximum permitted catches under various co-op membership scenarios	Maximum sector shortraker allocation	106.0*	NA	
	Maximum sector rougheye allocation	359.7*	NA	
	Maximum sector catch of MRA shortraker and rougheye - aggregate	192.1**	203.7	
	Maximum retained catch of shortraker and rougheye			669.4
Maximum permitted catches under first year co-op memberships	Allocation of shortraker to cooperatives	59.9		
	Allocation of rougheye to cooperatives	203.4		
	Maximum MRA catch of shortraker and rougheye - aggregate	41.3	203.7	
	Maximum retained catch of shortraker and rougheye			508.3
Catches in the first year	Total catch of shortraker by cooperatives	43.5	9.4	
	Total catch of rougheye by cooperatives	11.3	9.9	
	Total catch of shortraker and rougheye by limited access	32.1		
	Total catch of shortraker and rougheye			106.2

Source: NMFS Catch Accounting data

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

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

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

In the first year of the program, catcher processors participated in both cooperatives and the limited access fishery. The choice of some catcher processors to participate in the limited access fishery reduced the permitted retained catch of the two species by over 150 metric tons. Yet, some catcher processors are reported to have been reluctant to join cooperatives because of the potential that the constraining shortraker and rougheye allocations would limit their ability to harvest primary species. Notwithstanding this fear, during the first year of the program, total catch of shortraker and rougheye in the limited access were approximately 10 metric tons less than the amount that could be retained under the MRA and were substantially less than would have been permitted had these catcher processors elected to participate in cooperatives. Catcher vessels in the program harvested less than 10 percent of the maximum amount permitted by its MRA.

Catches of both species under the program's system of allocations and MRAs were less than historical catches in the rockfish fishery (see Table 18). In addition, catches in the first year of the program were a relatively smaller portion of the total allowable catch, although the distribution of that catch between the two sectors has varied across years.

Table 18. Total allowable catches and total catches of shortraker rockfish and rougheye rockfish in the Central Gulf rockfish fisheries (2005-2007).

Year	Species	Total allowable catch	Catcher processor sector		Catcher vessel sector		Total	
			Catch (in metric tons)	Percent of the total allowable catch	Catch (in metric tons)	Percent of the total allowable catch	Catch (in metric tons)	Percent of the total allowable catch
2005	Shortraker rockfish	557	127.3	22.9	19.1	3.4	146.4	26.3
	Rougheye rockfish	324	48.4	15.0	8.9	2.7	57.3	17.7
2006	Shortraker rockfish	353	144.8	41.0	13.8	3.9	158.6	44.9
	Rougheye rockfish	608	5.4	0.9	29.7	4.9	35.1	5.8
2007	Shortraker rockfish	353	62.9	17.8	4.3	1.2	67.2	19.0
	Rougheye rockfish	611	19.2	3.1	6.2	1.0	25.4	4.2

Source: NMFS Catch Accounting.

Also, total catches of shortraker rockfish and rougheye rockfish in all fisheries relative to their TACs do not indicate that they overharvests (see Table 19).

Table 19. Catches and total allowable catches of shortraker rockfish and rougheye rockfish in all Central Gulf fisheries (2005 -2007).
allfish

Year	Shortraker rockfish			Rougheye rockfish		
	Catch (in metric tons)	Total allowable catch (in metric tons)	Percent of total allowable catch harvested	Catch (in metric tons)	Total allowable catch (in metric tons)	Percent of total allowable catch harvested
2005	223	557	40.0	122	324	37.7
2006	303	353	85.8	134	608	22.0
2007	158	353	44.8	178	611	29.1

Source: NMFS Catch reports (2005-2007).

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

6.6. Distribution of catch among catcher vessels

Among the changes that may occur when transitioning from a limited entry ‘race for fish’ to a share-based management program is that catch will become more concentrated on vessels that can harvest more efficiently from the fishery. In the first year of the rockfish program, only four catcher processors participated in the rockfish fishery, one or two vessels fewer than participated in the years leading up to the program. Confidentiality limits prevent the release of any information concerning the distribution of catch among vessels in that fleet, beyond that presented in the general catch tables above.

Vessel participation in the catcher vessel sector remained relatively constant in the years leading up to the program and in the first year of the program (see Table 20). As a consequence of this relatively constant participation, no change in the mean vessel harvest as a percent of the total catch occurred in the first year of the program. Median vessel harvest as a percent of total harvest also remained relatively consistent with prior years’ median harvests. Catches on vessels at the upper end of the harvest spectrum are slightly more concentrated than prior to the implementation of the program. A portion of this concentration likely results from transfers of cooperative quota from the catcher processor sector that were harvested by a few vessels involved in those transfers. Overall, no large-scale change in the distribution of catches appears to have occurred in the catcher vessel sector in the first year of the program.

Table 20. Catcher vessel participation, mean, median, and average of highest four vessels' retained harvests in the Central Gulf rockfish fishery (2003-2007).
cvctchdist

Year	Number of vessels	Mean vessel harvest		Median vessel harvest		Average of highest four vessels' harvests	
		as a percent of total catch	in metric tons	as a percent of total catch	in metric tons	as a percent of total catch	in metric tons
2003	35	2.9	274.8	3.0	285.4	6.1	589.8
2004	32	3.1	263.3	2.8	233.6	6.6	554.8
2005	25	4.0	285.9	3.8	270.5	7.4	527.0
2006	25	4.0	275.8	3.4	234.1	7.3	502.4
2007	25	4.0	309.8	3.6	280.1	8.3	645.8

Source: NMFS Catch Accounting data (2003-2007).

7. Captains and crew

Little information is available concerning the effects of the program on captains and crew. The distribution of catch across vessels suggests that captain and crew fishing activity has changed little in the

first year of the program. This consistency in distribution also suggests that leasing of quota and royalties may have little effect on crew in the fisheries. The leasing of catcher processor quota to catcher vessel cooperatives likely had a distributive effect of revenues between crews in the different sectors, with some royalty removed prior to payment of crews. On the catcher processor side, the vessels that made these transfers likely were deployed elsewhere, mitigating the effect of the transfer on their crews. On the catcher vessel side, these transfers likely had the predictable effect of increasing the total payments to crew harvesting the additional allocation, but at a decreased share basis from fishing quota owned by the vessel.

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

8. Processing in the rockfish fishery

Since relatively few processors participate in the Central Gulf rockfish fishery, confidentiality constraints limits information that may be conveyed concerning the distribution of processing in the fishery. In the years prior to implementation of the program, few processors that did not qualify for the program participated in the fishery (see Table 21). Since only qualified processors are permitted to receive deliveries under the program, only the five qualified processors participated in the fishery in the first year of the program.¹⁵

Table 21. Number of plants receiving deliveries in the Central Gulf rockfish fishery (2003-2007).
plants

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

Source: NMFS Catch Accounting data (2003-2007).

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

In the first year of the program, the distribution of cooperative landings suggest that cooperative/processor associations had a great influence on delivery patterns (see Table 22). Whether this influence arose from obligations in cooperative agreements or other bases (such as long-term relationships) is not known. Despite the strong relationship between deliveries of a cooperative and its associated processor, almost one-fifth of deliveries of primary rockfish catch were made to a processor

¹⁵ Only processors that received in excess of 250 metric tons of aggregate Pacific ocean perch, northern rockfish, and pelagic shelf rockfish deliveries per year, for 4 years, from 1996 to 2000, are eligible to participate in the main program.

other than the cooperative's associated processor. Some portion of these deliveries is known to have been made to the processor associated with the catcher processor cooperative that transferred its allocation to catcher vessel cooperatives, who distributed that transfer among several catcher vessel cooperatives (including its associated cooperative). Yet, the tonnage of deliveries to processors other than a cooperative's associated cooperative exceeds the tonnage of the transfer to the catcher vessel sector by catcher processor cooperatives and transfers among catcher vessel cooperatives, suggesting that shore-based processors allowed their associated cooperatives some latitude to make deliveries to other processors.

Table 22. Deliveries of allocated species by catcher vessel cooperatives (2007).

Species	Deliveries to associated processors		Deliveries to processors other than the associated processor			
	Number of deliveries	Landings (in metric tons)	Number of deliveries	Number of processors receiving deliveries	Number of cooperatives making deliveries	Landings (in metric tons)
Pacific ocean perch	113	3,518.2	18	3	3	
Northern rockfish	106	1,855.8	15	1	3	2,085.1*
Pelagic shelf rockfish	115	3,518.2	16	1	3	
Pacific cod	101	271.5	13	2	3	**
Sablefish	58	413.6	9	2	3	**
Shortraker rockfish	13	4.2	2	1	2	**
Rougheye rockfish	22	5.0	5	2	2	**
Thornyhead rockfish	41	41.9	7	2	2	**

Source: Catch Accounting Data and Cooperative Reports.

Note: Each of the five eligible processors received deliveries from its associated cooperative. Deliveries are not unique across species.

* Includes all primary species.

** Withheld for confidentiality.

9. Distribution of catch over time

Some of the projected benefits of the rockfish pilot program were to arise from the exclusive allocations and extension of the season, which would allow harvesters and processors the flexibility to distribute their activities over longer periods and during periods when conflicts with other activities would be reduced. Processors specifically sought to avoid conflicts with salmon deliveries in the month of July. The historic timing of the rockfish season in July is said to have unwarrantedly taxed processing crews, who could work more effectively, if rockfish landings are distributed to periods of little or no processing. In addition, delays in processing deliveries because of both the conflict with salmon deliveries and queuing to offload rockfish is said to have led to diminished quality of rockfish landings and products. Allowing landings to be distributed over a longer season was purported to be able to address both of these issues, reducing crew down time and improving product quality.

The temporal distribution of rockfish landings in the first year of the program suggest that participants used the flexibility provided by the exclusive allocations and extended season to address some of these conflicts (see Table 23).

Table 23. Kodiak landings of catch from the Central Gulf rockfish fishery and total Kodiak landings (in metric tons) (2003-2007).

kodLandings		2003		2004		2005		2006		2007	
Month	Week	Rockfish landings	Total landings	Rockfish landings	Total landings	Rockfish landings	Total landings	Rockfish landings	Total landings	Rockfish landings	Total landings
May	1st		1,146		1,175		1,643		574	390	2,828
	2nd		702		586		470		752	219	2,508
	3rd		302		486		459		1,059	354*	2,185
	4th		609		428		358		476	354*	1,208
June	1st		829		547		646		479	849	1,383
	2nd		1,543		1,461		1,049		600	454	990
	3rd		2,165		1,564		1,204		602	608	1,471
	4th		1,335		2,177		1,932		827	1,186	1,994
July	1st		5,270		1,407		1,147		791	650	1,727
	2nd	5,324	6,034	5,246	6,602	3,084	4,629	1,851	5,691	492	2,001
	3rd	3,188	4,638	2,799	6,218	3,864	8,192	3,641	4,256	389	2,103
	4th	1,662	5,121	2,150	6,587	1,750	7,395	1,656	3,906	566	3,240
August	1st	1,710	5,385		8,174		8,771	481	5,116	586	3,040
	2nd	161	6,329		7,993		8,485		13,078	179	7,119
	3rd		6,052		7,962		10,851		14,529		9,679
	4th		4,661		6,843		7,496		12,545	211*	9,443
September	1st		7,351		5,513		4,781		6,869	211*	10,044
	2nd		5,481		5,561		3,137		6,462	121	4,632
	3rd		1,627		4,939		3,785		3,939	88	3,146
	4th		349		3,586		2,714		2,342	253	2,246
October	1st		326		183		2,115		2,094	40*	2,566
	2nd		2,281		879		412		1,821	40*	3,949
	3rd		4,284		4,641		6,281		3,704		2,638
	4th		445		1,059		908	22	1,917	141*	2,659
November	1st		515		1,140		2,279		2,894	141*	1,857

Sources: ADFG Fish tickets and NMFS catch accounting.

* Average of two adjacent weeks landings aggregated for confidentiality.

Note: Landings are dated using weekending dates, which are coordinated so that the first rockfish fishery landings occur in the second week of July.

In the first year of the program, rockfish program landings exceeded 1,000 metric tons in only one week. During that week, few other landings were made in Kodiak. In weeks of particularly high overall landings (most of which were salmon landings that cannot be delayed), little rockfish was landed.

Although the overall effect of this redistribution of landings on processing employment cannot be quantified, the redistribution is said to have allowed processors to maintain active crews during periods when processing activity was slow. It should be noted that rockfish landings in June constituted almost half of all Kodiak landings. Prior to implementation of the program, no landings would have occurred during this time period. This redistribution of landings to June is said to have allowed processors to maintain crews during that month who might not have had work otherwise, but also likely reduced crew overtime during July. In considering this trade off, it should be considered that crews may lose some income, but may be able to work more safely in shorter shifts. In addition, crews may benefit from a steadier income stream and more balanced work schedules under the redistribution of landing under the program.

10. Ex vessel prices

One of the benefits that is asserted to arise from changing management to a cooperative program is additional revenues for landings. In the years leading up to the implementation of the pilot program, ex vessel prices for primary rockfish increased substantially, almost tripling from 2003 to 2007 (see Table 24). In addition, ex vessel prices for Pacific cod and sablefish also rose in the period leading up to implementation of the program.

Table 24. Ex vessel prices for species allocated in the Central Gulf rockfish program (2003-2007).

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

Source: COAR Data (2003-2005).

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

* Withheld for confidentiality.

In the first year of the program, prices of primary rockfish species increased very slightly. Pacific cod and sablefish both continued their upward trend. Available price information for Pacific cod and sablefish, however, include substantial landings from other target fisheries, so price increases for these species should not be attributed to the change in management to the pilot program.

11. Products and first wholesale prices

Production and first wholesale product prices of rockfish products by processors that participate in the rockfish pilot program have fluctuated over the years leading up to implementation of the pilot program (see Table 25). A few considerations should be kept in mind when reviewing this table. First, combining

whole and head & gut products conceals price differences in those products, which may be as small as a few cents and as large as \$0.50 per pound of finished product depending on the transaction. Given the aggregation and these product price differences, changes in prices for the head & gut and whole products reflect a composition of changes in prices for these products and changes in production (with prices increasing with production of head & gut products). In addition, the difference in 2006 prices from prices in other years suggest that data from that year should be questioned and may be unreliable.

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

Table 25. Production of primary rockfish species by shore-based processors participating in the rockfish pilot program (2003-2007).

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

Source: COAR DATA (2003-2007).

Additional information concerning surimi production with held for confidentiality.

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

In the first year of the pilot program, prices of the primary rockfish species products of the catcher processor sector declined from previous years (see Table 26). As in the shore-based sector, several factors could have contributed to this suggested price drop, including product choices. Although catcher processors that participate in the program produce exclusively whole and headed and gutted products, these products can bring very different prices.

Table 26. Production of primary rockfish species by catcher processors in the rockfish pilot program (2003-2007).

cps

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

Source: COAR Data (2003-2007).

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

12. Management and enforcement

Although management and enforcement of a complex program, such as the rockfish pilot program, poses substantial challenges, NOAA Fisheries and industry members generally believe these oversight functions were performed successfully without undue burden in the first year of the program. The catcher vessel

sector is currently working with NOAA Fisheries to develop a video monitoring program that, if successful, could reduce observer costs. Under the program, catcher vessels are required to maintain 100 percent observer coverage. The system of check-in/check-out used to account for catch under the program has generally proven manageable and reliable for accounting for catch under the program, while allowing participants to move in and out of the rockfish fishery.

Enforcement detected few violations in the first year of the program. In a few instances, catcher vessels discarded minor amounts of catch, estimates of which were charged against cooperative accounts. On investigation, these actions were determined to be inadvertent and warnings were issued. Similarly, one vessel that inadvertently failed to check-out of the rockfish fishery, as required for catch accounting, was issued a warning. In one instance, a processor qualified for the main program received deliveries from the entry level fishery. This action is currently under investigation. Overall, few enforcement issues arose under the program.

13. Sideboards

Under the pilot program, catcher vessels and catcher processors are subject to separate sideboards. The catcher vessel sector is subject to aggregate sideboard limits in most Gulf fisheries and in the Bering Sea Pacific cod fishery in July and are prohibited from fishing Pacific ocean perch, other flatfish, and yellowfin sole in the Bering Sea. Although management of these sideboards did not present a large management problem in the first year of the program, several of the sideboard amounts are not adequate to support directed fishing. If the Council were to develop an amendment package for the rockfish pilot program, it could consider whether certain of these fisheries should be closed to directed fishing in July.

Catcher processors are also subject to aggregate sideboards in Gulf fisheries, but also may be subject to a mix of standdowns and cooperative level sideboards in Gulf and Bering Sea fisheries. These sideboards vary based on whether the catcher processor joins a cooperative, enters the limited access fishery, or opts-out of the rockfish fisheries. These different levels of sideboards may have altered the incentives for catcher processors to join cooperatives under the program, as the sideboards are less constraining for participants in the limited access and catcher processors that opt-out of the fishery. These sideboards also differ from sideboards in other programs, as they are largely to protect members of the sector from each other. In most instances, sideboards are intended solely to protect persons not eligible for a share-based management program from participants in that share-based management program.

As a part of its direction requesting this program review, the Council requested staff to examine whether vessels were choosing to opt-out of the program to consolidate catch in the sector and avoid sideboards. Since the Amendment 80 cooperative program is being implemented in the Bering Sea non-pollock fisheries, the ability of eligible catcher processors to elect to opt-out in this strategic manner is no longer an issue. Currently, the Council is considering an action to amend the sideboards in the rockfish program to remove the Bering Sea standdown provision that applies to cooperative participants and certain limited access participants, but not to eligible catcher processors that opt-out, which was the source of this concern.

14. Summary of effects on the catch vessel sector under the main program

The pilot program achieved some successes in its first year for the catcher vessel sector. Most notably, catcher vessel incidental catch of halibut was reduced substantially under the program. The sector also harvested most of its allocation with few overages. The sector received a substantial portion of the catcher processor sector allocation by transfer, increasing its share of the rockfish fisheries. Despite improvements in quality that likely arose under the new management, ex vessel prices in the fisheries

remained relatively stable. The reason for the absence of price premiums is not apparent, but several factors may have contributed.

In the first year, catcher vessels in the program used less than 5 pounds of halibut mortality per ton of primary rockfish catch. Maintaining this rate allowed the sector to use less than 15 percent of its approximately 300,000 pound halibut mortality allocation. Prior to the program implementation, halibut mortality consistently exceeded 25 pounds per ton of primary rockfish catch and in one year exceeded 50 pounds per ton of primary rockfish catch.

This change can be attributed to a few different measures taken by the catcher vessel sector (or participants in the sector). Each cooperative established its own standards for halibut bycatch. If a vessel exceeded the permissible rate, the cooperative convenes a meeting to discuss measures to address the problem. If a vessel's catch suggests a persistent problem meeting the acceptable rate, the cooperative manager has authority to issue a 'stop fishing' order for the vessel. The cooperative has the authority to review the offending member's harvest practices (including aspects of vessel operation and fishing locations) and gear use and specify measures to improve bycatch performance. The cooperative has the authority to agree to transfer halibut to the offender to avoid a potential overage, but also can use more draconian measures, if the circumstances justify that action. The cooperative may require the offender to wait until others in the cooperative have complete fishing to avoid shutting down the cooperative. This measure could be very disruptive to a participant's activities in other fisheries. At the extreme, the cooperative has the authority to prohibit the offender from fishing any remaining allocation

Prior to the season, catcher vessel cooperatives established an inter-cooperative agreement to provide overarching management of harvest of cooperative allocations (including reserves to avoid overages, end of year harvest of remaining allocations, and halibut avoidance). The inter-cooperative agreement also established maximum halibut bycatch rates and authorized the inter-cooperative manager to modify cooperative harvest plans to prevent offending members from continuing in the fishery. Providing this expansive authority has created a great incentive for participants to avoid halibut bycatch. Given the strength of these agreements, a sector member has a substantial incentive to avoid halibut (at least to the extent required by the bycatch standards).

To meet halibut bycatch rates, several vessels have modified their fishing practices. Three-fourths of the catcher vessel fleet are reported to have used pelagic gear, substantially more than the 50 percent or less in years past. Almost 40 percent of the sector's catch of primary species was made with pelagic gear, a substantial increase over the approximately 25 percent or less in years past.

Participants in the fishery also say that the transition to cooperative management has allowed them to take steps to reduce halibut incidental catch that they could not afford to take under limited access management. These participants' assert that the change in management has allowed them to fully change their focus when fishing. Under limited access management, participants efforts and attention was on competing for a share of the TAC in the fisheries. Under cooperative management (with secure allocations), participants efforts are geared toward catching their allocations and avoiding halibut bycatch. This change has allowed participants to use gear that allows greater halibut escapement (even at a cost of reduced catch rates and greater escapement of target species). Likewise, participants have experimented with trawling at lower speeds and move to avoid halibut than under limited access management.

The sector harvested most of its primary and secondary species allocations without overage. In a program with no opportunity to either discard or achieve some adjustment to address possible underharvest or overharvest, the performance of the sector in the first year was notable. As with halibut bycatch reductions, the success is largely attributable to the adaptation of the fleet's fishing practices to new management incentives and the cooperative/inter-cooperative management structures. Those agreements

provided the cooperatives and the inter-cooperative manager with the authority to adopt changes in fishing plans (redistributing allocations among members) and issue stop fishing orders to prevent potential overages. In addition, the inter-cooperative agreement contained provisions for harvest of small amounts of quota at the end of the year, including a lottery for selecting vessels to harvest that quota and terms of compensation. Resolving these issues prior to the season provided participants with a clear understanding of the rules governing the harvest of allocations and reduced potential overages that might have occurred in the absence of agreements for full harvest of the allocations.¹⁶

The sector appears to have had limited success in generating higher value for catch than might have been anticipated. In the first year of the program, ex vessel prices for primary rockfish species rose slightly (less than ten percent). This small rise appears to have occurred despite considerable efforts on the part of participants to modify fishing practices to improve quality of catch (primarily spreading catch over time to avoid waiting time for offloading). Participants also took steps to increase value of sablefish and Pacific cod, making separate trips for those species to avoid damage that can occur when catch is mixed with rockfish. The extent of any benefit from this change in practices cannot be determined because data are not available to distinguish prices for these species in the rockfish fishery. Overall, the catcher vessel sector seems to have had limited success in generating extra value from their catch. The extent to which this resulted from a lack of development of markets beyond the control of processors in the fishery or from absence of incentives to aggressively pursue markets is not known. Several processors reported increased efforts to serve higher value markets, with limited success. Clearly, the cooperative provisions in the program, and the required processor association, limited the ability of catcher vessel participants to induce processor competition for landings from the fishery. To date, those provisions appear to effectively protect processor interests in the fishery, which could be jeopardized in their absence. Comparing the relationship of ex vessel prices to first wholesale prices in the years prior to the program with the relationship of those prices to one another in the first year of the program, it is not apparent that any change occurred in the first year of the program. Those data, however, may not be completely reliable.

Since participants in the catcher vessel sector have secure allocations, they are under less pressure to make their catch quickly. Slowing down in the fishery may help reduce costs, particularly fuel costs. The extent of savings on costs from the slowing of the fishery is not known.

15. Summary of effects on processors under the main program

Shore-based processors benefited from several aspects of the rockfish program and the prosecution of the fisheries under the program.¹⁷ Most notably, both catcher processor cooperatives transferred allocations to the catcher vessel cooperatives, increasing the share of the fishery processed on shore to historic highs. The one-way transfer provision, disallowing transfers from catcher vessel cooperatives to catcher processor cooperatives played some part in these transfers, since it left the single active catcher processor cooperative with no fall back, in the event it believed one of its species allocations would be constraining.

Shore-based processors also benefited from the changes in fishing and delivery patterns under the program. The slower pace of fishing reduced vessel waiting times for offloads. This change in offload patterns can improve quality by reducing time that fish are in the tank prior to offloading and also by allowing processing crews to work at a more reasonable pace and with better rest. These benefits are partially reflected in slightly higher first whole revenues and prices, although the accuracy of these

¹⁶ In the first year of the program, the inter-cooperative agreement required each cooperative to reserve a portion of each species allocation to reduce the potential for overages. In the second year, the reserve requirement is omitted from the cooperative agreement, as most participants agree that a reserve is not necessary to prevent overages.

¹⁷ It should be noted that processors that did not meet the eligibility requirements for the program, clearly suffered from being unable to compete for landings in the main program fishery. Two processors that did not qualify for the program received deliveries of targeted trawl rockfish in the period from 2003 to 2006, inclusive.

revenue and price data is questionable. Processors in the program have stated that the higher processed, higher value markets have proven challenging, possibly due to overproduction of those products relative to available (or developed) markets in the first year.

Processors have also benefited under the program from the ability to schedule deliveries to avoid conflicts with deliveries from other fisheries, especially the summer salmon fisheries that have historically conflicted with the rockfish fisheries. Ancillary employment effects have arisen from the change in processing patterns in the fishery. By scheduling deliveries to avoid conflicts with other fisheries, processors report that they have been able to keep crews active during a time when they have historically had little processing, especially in June. While avoiding conflicts with deliveries from other fisheries has allowed processors to spread work over longer periods, overtime hours are likely reduced by the redistribution of deliveries. Although this has benefits and costs for processing crews, most processors believe that their crews prefer the distribution of deliveries that has resulted under the pilot program.

16. Summary of effects on catcher processors under the main program

In the first year of the program, two catcher processor cooperatives were formed, but only one of those cooperatives fished its allocation, using a single vessel. Both of these cooperatives transferred a substantial portion of their allocations to catcher vessel cooperatives. Three catcher processors fished in the sector's limited access fishery; a relatively large number of catcher processors chose to opt-out of the program. These fishery choices and fishing patterns could lead one to question whether the structure of the program creates disincentives for catcher processors to participate in the cooperative program (or even the limited access fishery). In communicating with participants in the sector, it appears a few factors create these disincentives.

First, some eligible catcher processors cited disproportionate and small cooperative allocations as a barrier to cooperative fishing. Several (including the one active cooperative vessel) expressed concern that the relatively small allocations of shortraker rockfish and rougheye rockfish would constrain harvests of a cooperative's allocation.¹⁸ The single vessel active in the sector received a transfer of shortraker from the inactive catcher processor cooperative, in part, to provide a buffer against a potential overage. This cooperative also transferred a substantial portion of its allocations of other species to catcher vessel cooperatives, rather than attempt to fish those allocations fully and risk overages. Participants in the sector also express their belief that the allocations of these species are not reflective of historical catch. These factors may have contributed to some vessels choosing to fish in the limited access, where shortraker and rougheye are subject to an MRA, rather than a potentially constraining fixed allocation.¹⁹

Participants in the catcher processor sector also raised concerns that the relative sizes of other allocations (i.e., northern rockfish and pelagic shelf rockfish) could lead to overharvests. For example, if the allocation of one of two jointly harvested species is disproportionately small when considering relative catch rates, the potential for that allocation to constrain catch of the other species is increased. So again, rather than risk the potential for the smaller allocation to constrain harvests of the larger allocation,

¹⁸ While catcher processors expressed concern over potentially constraining shortraker rockfish and rougheye rockfish allocations, harvest of these species by catcher vessels was very low, in comparison to catch of primary rockfish species. These disparities suggest that fishing locations and practices of the catcher processor fleet may increase risk of overharvest of shortraker rockfish and rougheye rockfish.

¹⁹ It should be noted that the MRA is set low, so that retention from the limited access is less than permitted retention in a cooperative. The MRA management, however, reduces the potential for an unintended overage to close a vessel out of the fishery.

participant may elect to fish in the limited access, where harvest of the smaller allocation is managed using a closure of directed fishing for that species, rather than a complete closure of the rockfish fishery.²⁰

While these allocation issues may suggest the reason that many catcher processors chose not to join cooperatives, it is unclear why sector members did not use the cooperative structure to overcome these constraints. For example, if a group of catcher processors pooled their allocations in a cooperative and managed their harvests collectively, it is probable that these catcher processors could overcome the constraints of their allocations. Two factors may have contributed to the failure of the sector to reach such an agreement. To some degree, inertia from several years of competing for shares of the TAC has likely prevented some sector members from making cooperative arrangements in the rockfish fishery. The implementation of the Amendment 80 cooperative program should help overcome this inertia, but it could take some time, as the Central Gulf rockfish fishery is of minor importance to some catcher processor sector members.

A second factor that likely contributed to catcher processor sector members choosing not to join cooperatives are the sideboards applicable to the sector. Within the catcher processor sector, participants are subject to different sideboards based on whether they join a cooperative, participate in the limited access fishery, or opt-out of the program.²¹ Depending on an eligible catcher processor's allocation in the rockfish fishery and its history in other fisheries, these differentiated sideboards create incentives for a catcher processor to choose to fish in the limited access fishery or opt-out of the program, rather than join a cooperative. Together these three factors – the relative sizes of the different species allocations, inertia, and the different sideboard provisions – likely led to most members of the catcher processor sector to choose to remain outside of cooperatives in the first year of the program.²² In any case, it cannot be said that the pilot program structure has proven successful for catcher processors.

Although less dramatic than the catcher vessel sector improvements, the catcher processor sector substantially reduced its halibut bycatch from the year prior to the implementation of the pilot program. In 2006, catcher processors averaged approximately 25 pounds of halibut mortality for each ton of primary rockfish catch. In 2007 (the first year of the pilot program), the halibut mortality per ton of primary rockfish catch was less than 10 pounds by the cooperative and less than 15 pounds for limited entry participants.

17. Summary of conservation and habitat effects

A few notable conservation benefits arose from the pilot program. First, as a result of the prohibition on discards of allocated species by cooperatives under the program, discards in the fishery dropped substantially. For MRA species (shortraker and roughey for catcher vessels and Pacific cod for catcher processors) discards were less than one metric ton. Despite this MRA management, the catcher processor

²⁰ To minimize risk of overharvest, the directed fishing closure would be timed so that a portion of the allocation is available for incidental harvest in the directed fishery for the other target rockfish species.

²¹ A catcher processor that chooses to opt-out is permitted to fish in Gulf fisheries that it historically participated in, but must standdown for two weeks from any Gulf fishery in which it has not met a historic participation threshold. No Bering Sea standdown applies to vessels that opt-out of the Central Gulf rockfish fisheries. Vessels that fish in the limited access fishery and have substantial Central Gulf Pacific ocean perch history are subject to standdowns in Bering Sea and Gulf non-pollock fisheries. Vessels with little Pacific ocean perch history in the Central Gulf are not subject to these standdowns. A member of a cooperative is subject to a standdown in the Bering Sea, but may avoid the standdown in the Gulf fisheries, if its cooperative establishes a monitoring plan for verifying that cooperative catch in Gulf groundfish fisheries will be below its historic catch (i.e., establishes a plan for compliance with a cooperative sideboard).

²² In the second year of the program little has changed. The same catcher processors chose to join cooperatives in the second year as in the first year. More catcher processors have elected to participate in the limited access in the second year of the program.

limited access fishery reduced discards substantially in the first year of the program. This decrease was likely facilitated by the less competitive nature of that fishery, as only three vessels participated.

As noted earlier, the decline in halibut mortality in the rockfish fisheries is substantial for all sectors, particularly the catcher vessel sector. By providing a constraining exclusive allocations (of retainable species and halibut), participants have the incentive to adopt practices to improve halibut bycatch rates, without sacrificing their overall opportunity in the fishery.

The essential fish habitat environmental impact statement, completed prior to implementation of the rockfish pilot program, concluded that the rockfish fishery has minimal and temporary effects on essential fish habitat. Since that time, spatial closures have been implemented that affect the rockfish fishery, further reducing those effects. A trend toward greater use of pelagic gear that started in the period leading up to implementation of the program has continued in the first year of the program. This transition from non-pelagic, bottom gear to pelagic gear suggests a further reduction in any habitat effects by the rockfish fishery. As with other conservation benefits, this benefit arises indirectly from incentives of constraining exclusive allocations that have allowed participants to transition across gear types without risking loss of a share of the catch in the fishery.

18. The entry level fisheries

The ability to provide information concerning the entry level fishery is limited because few vessels and processors participated in those fisheries in the first year of the program. This section describes the entry level management and issues that arose in those fisheries in the first year of the program.

The aggregate TAC of all target rockfish species in the entry level fishery is divided equally between the trawl and fixed gear sectors. Because of operational differences, the trawl sector receives its portion of the aggregate TAC first from the entry level TAC of Pacific ocean perch. If the Pacific ocean perch TAC is less than the total allocation to the trawl sector, the sector receives proportional shares of the northern rockfish and pelagic shelf rockfish TACs, such that entry level TAC is divide equally between the two sectors. The rationale for allocating Pacific ocean perch first to the entry level trawl sector is that the entry level fixed gear sector has no harvest history of the species and targeting of Pacific ocean perch with fixed gear is primarily experimental at this time.

The entry level fishery is open to harvesters that are not eligible for the primary program. All deliveries from the entry level fisheries must be made to processors that are not eligible for the primary program. The entry level trawl fishery would be prosecuted as a competitive limited access fishery, open, on application, to any LLP license holders endorsed for the CGOA. The fixed gear fishery opens on January 1st each year. The trawl fishery is scheduled to open on the 1st of May, if PSC is available. If PSC is unavailable at that time, the fishery would open upon the next release of PSC. Since historic harvests suggested that the fixed gear sector may be unable to fully harvest its allocation, trawl participants are permitted to harvest the fixed gear allocation after September 1st.

Vessels fishing the fixed entry level allocation in Federal waters must have an LLP and must have registered for the entry level fishery. Fixed gear vessels that fish exclusively in parallel waters and do not have an LLP or a federal fisheries permit do not need to register for the program. In addition, these vessels that fish exclusively in parallel waters and do not have an LLP or federal fisheries permit may deliver their catch to any processor, including processors qualified for the main program (who cannot otherwise receive deliveries from the entry level fisheries). This relaxation of landing constraints allows greater flexibility for vessels that fish exclusively inside 3 nm by allowing them to deliver mixed loads of pelagic shelf rockfish and black rockfish to processors of their choice. This relaxation of landing requirements, however, allows processors participating in the main program to compete for entry level

deliveries, which would otherwise be reserved for delivery to processors that do not qualify for the main program. In addition, the relaxed delivery requirement for vessels fishing under State rules could deter fixed gear participation in Federal waters in other fisheries (such as the Pacific cod fishery), since LLPs can be transferred only a single time each year.

In the first year of the program, a single vessel registered for the fixed gear entry level fishery. The fixed gear entry level fishery harvested approximately 6 metric tons of its allocation of approximately 350 metric tons of pelagic shelf rockfish and northern rockfish.²³ To simplify management of the entry level fixed gear allocation, all fixed gear harvests of primary rockfish species from Federal and parallel waters when the directed fishery is open are counted against the entry level allocation of that gear type. Given the relatively small harvest of primary rockfish by the fixed vessels, this accounting has not affected the ability of sector members to participate in the fishery.

In the first year of the program, only two trawl vessels participated in the entry level trawl fishery. Even with only two participants, the relatively small allocation to the fishery (approximately 350 tons of Pacific ocean perch) posed a management challenge. Since vessels can harvest on the order of 100 metric tons in a day, timing a closure to avoid overharvests is very difficult. If more vessels enter the fishery it is likely that managers will either have to close the fishery or use short openings of 24 hours or less, unless participants reach a gentlemen's agreement to limit harvests. Management of the small allocation to trawl vessels in the entry level fishery is likely to continue to be problematic under the current rules. The complication of managing catch in the entry level sector has spillover effects on processors. If the fishery cannot be prosecuted, entry level processors will lose any product they hoped to receive from the fishery. On September 1st the unharvested portion of the fixed gear entry level allocation came available for harvest by trawl vessels. Despite this opening, the fixed gear allocation was not fully harvested.

The entry level fishery poses substantial challenges for both participants and managers. The existing system of allocations which split the TAC between trawl and fixed gear fisheries raises a few issues. The relatively small allocation to trawl participants is difficult to manage in a limited access, race-for-fish. A system that allows managers to more reliably ensure that the fishery can be opened without potential for the TAC to be exceeded might be preferable to the existing management.

The management of the processing sector in the entry level fishery is also problematic. In the first year of the program, delivery scheduling posed challenges for trawl and fixed participants as a result of the race-for-fish management of the trawl fishery and the prohibition on deliveries to processors qualified for the main program. If prosecution of the rockfish fishery conflicts with other activity at a plant, deliveries under the program can create logistical complications for the plants and can lead to delays and loss of fishing time for harvesters. Since the trawl entry level fishery can only support a few deliveries, no economies of scale are likely to be realized by processors gearing up for those deliveries. In addition, fixed gear entry level participants may have different markets for their non-pilot program catch, which can require sorting of catch and further delays in deliveries. Whether management of the entry level fisheries can be modified to address these issues uncertain and will likely require comprehensive consideration of the management of the entry level fisheries.

19. Community effects

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

²³ Catch amounts can be revealed, since harvests of primary rockfish by any fixed vessel are counted against the entry level TAC. Only vessels that register for the program are permitted have directed rockfish trips in Federal waters.

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

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

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

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