

**Cooperative measures to address active participant and crew issues
North Pacific Fishery Management Council
February 2013**

At its December 2011 meeting, the Council received a report reviewing the performance of the crab rationalization program during its first 5 years. Based on the report and public testimony, the Council identified certain aspects of the program that it would like to give additional attention. Among those issues, the Council requested a discussion paper concerning certain cooperative measures that might be considered to promote acquisition of quota shares by crew and other active participants in the crab fisheries and equitable crew compensation. The Council specifically requested that the paper examine the “best practice” requirements for cooperative agreements. These cooperative agreement requirements could include:

- Provisions to promote quota share ownership among crew and active participants.
- Maximum lease rate caps.
- Maximum amount of lease rates that may be charged against crew compensation.
- Minimum crew pay standards such as a minimum threshold of gross vessel revenue for crew compensation.

This paper examines the use of cooperative agreements to address these four requirements. At this meeting, the Council also requested an analysis of active participation requirements for holders of quota shares. That analysis suggests that implementation of any active participation through direct NOAA Fisheries administration would be very complicated and burdensome. Cooperative administration of such a measure may avoid some of those costs and complications. This paper also discusses the potential to use cooperative agreements to administer active participation requirements, as an alternative to direct administration by NOAA Fisheries.

Background

Since implementation of the crab program (prior to the 2005-2006 season), critics of the program have pointed to high lease rates, fleet consolidation, absentee QS ownership, and changes in crew compensation as some of the program’s greatest shortcomings. Fleet consolidation reduced overcapacity quickly, as the Bristol Bay red king crab and Bering Sea *C. opilio* fleets contracted to an average of less than one-third of their sizes in the years preceding implementation of the program (see Table 1).

Table 1. Average catch and average number of vessels by fishery before and after implementation of the rationalization program.

Fishery	Seasons	Average number of participating vessels	Average total catch
Bering Sea <i>C. opilio</i>	2001-2005	189	24,511,160
	2005/2006 - 2010/11	73	49,603,907
Bristol Bay red king crab	2001-2004	243	10,409,223
	2005/2006 - 2010/11	74	14,528,729
Eastern Aleutian Islands golden king crab	2001/2 - 2004/5	18	2,945,451
	2005/2006 - 2010/11	4	2,753,592
Western Aleutian Island golden king crab	2001/2 - 2004/5	8	2,695,600
	2005/2006 - 2010/11	3	2,349,696

Sources: ADFG fish tickets for first time period and NMFS RAM catch data for second period.

Note: 1011/2012 uses TAC in place of harvests for Western Aleutian Islands golden king crab and Eastern Aleutian Islands golden king crab to protect confidentiality.

Since the number of QS holders has changed little since implementation of the program, a large share of this consolidation is asserted to arise from leasing of shares. The term leasing is often used loosely to refer to short term transfers of shares. The program structure, however, complicates any discussion or consideration of these leases. To induce cooperative membership, the program includes a prohibition on transfers of annual allocations of individual fishing quota (IFQ), except by cooperatives. This prohibition, together with the operational efficiencies gained in a cooperative, has led to almost all quota share holders (i.e., holders of long term shares) joining cooperatives and almost all IFQ being held by cooperatives. A cooperative receives annual allocations of IFQ based on quota share (or long term share) holdings of its members and oversees the harvest and distribution of those IFQ. Although cooperatives trade IFQ, the large majority of all transfers are within cooperatives. These intra-cooperative transfers result in little information being available to know the extent to which transfers that most people would characterize as a traditional lease (i.e., the purchase of IFQ) are the source of consolidation. Under the program's structure, those cooperative held IFQ may be harvested by any vessel registered to fish the cooperative's IFQ, without any documented transfer. Since all IFQ attributable to cooperative members' QS are allocated to the cooperative without identification of the member that contributed QS from which the allocation arises, IFQ use cannot be tracked back to a QS holder. Consequently, a vessel's harvest of IFQ cannot be assigned to a specific QS holder. Even if vessel IFQ usage could be traced to an individual QS holder, participants in the fisheries suggest that a variety of arrangements exist under which vessels coordinate harvests of IFQ by member vessels (some of which may not be considered leases).¹

While the masking effect of the cooperative IFQ allocations prevents identification of the specific source of IFQ use by a vessel, the complexity of share distributions and the variety of ownership structures also limits the extent to which leasing and lease rates can be fully identified. Even if it is assumed that all of the IFQ attributable to a member's QS are harvested by the vessel owned by that QS holder, the prevalence of overlapping (but not identical) ownership of vessels and QS holdings limits the ability of analysts to identify IFQ use arising from a lease (or a short term transfer at a negotiated price), rather than IFQ use arising from transfers that are simply share management arrangements by a business. Often such transfers are undertaken as a business practice among affiliated entities at non-market rates that are structured for internal management reasons, rather than at negotiated lease prices. These arrangements further complicate any understanding of leasing practices and lease rates.²

Despite these challenges, the Council has remained concerned with leasing practices and their effects on the fisheries and fishery participants. Specifically, the Council has expressed concern that leasing practices and associated exorbitant lease rates contribute to a substantial share of the fisheries' value being distributed to persons who are not active in the fisheries as either vessel owners or crewmembers. Although reliable comprehensive lease data are not available, anecdotal information from the fisheries suggests that some leases in the Bristol Bay red king crab fishery may result in compensation to QS holders who transfer their IFQ of as much as 75 percent of the ex vessel revenue of crab landed with those IFQ. In the Bering Sea *C. opilio* fishery, rates are said to be for as much as 65 percent of the ex vessel revenue arising from the transferred IFQ. The removal of revenues through share leases by inactive quota holders is said to have two effects. First, these lower revenues to vessel owners are said to decrease the amount of revenue available for vessel maintenance and improvements. The absence of revenues may pose a challenge to vessel owners who must decide the extent of improvements and maintenance for their

¹ These complications have also led to uninterpretable data being collected in the Economic Data Reporting program. To date, that program's collection of lease data contains no definition of leasing, leaving submitters to apply their own interpretation of the term when completing the form.

² These reporting issues contributed to the Council's decision to restructure the economic data collection program recently. Form revisions and rulemaking are underway to implement those changes in the near future.

vessels. When faced with mortgage payments and ongoing operational costs, vessel maintenance and improvements, particularly those that are more discretionary in nature, are less likely. A second possible affect is that crew compensation may decline. If a large share of a vessel's revenue is devoted to lease payments, crew (who typically are compensated with a share of the vessels adjusted revenues) may receive less pay.

Although information is not available to assess QS holder participation in the fisheries, data are available to examine changes in crew compensation since implementation of the program. These data can be used to assess the effects of the program on crew.³ These effects vary across participants, but consolidation of catch on fewer vessels has led to crews receiving greater average annual compensation from the fisheries, but catching a substantially greater amount of crab. In the first 5 years of the program, average crew pay is approximately three times the average of the three pre-program years for which data are available (1998, 2001, and 2004) (see Table 2 and Table 3).⁴ Average crew pay in the Bering Sea *C. opilio* fishery since program implementation is more than double the average pay from 2001 and 2004 (when the TAC in that fishery was comparable to the TACs since the program was implemented). In 1998, when the TAC in the fishery was near historical highs, average crew compensation was relatively similar to the post program level (with the exception of 2011, the most recent year). In 1998 year, average vessel harvests exceeded the average harvest since the program was implemented by almost one-third, but vessel gross revenues were lower due to a lower crab price. In 2011, average crew compensation increased as a result of a substantial increase in the *C. opilio* price with relatively high average vessel catch. In that year, the average price rose to slightly higher than \$2.50 per pound from approximately \$1.30 in the preceding year. These factors led to average crew compensation in the fishery of slightly less than \$50,000.

While crewmembers, on average, are making larger amounts annually, the average share of a vessel's revenues paid to crew (including the captain) has declined from approximately 35 percent in both fisheries prior to implementation of the program, to lows of below 20 percent in the Bristol Bay red king crab fishery in 2010 and to approximately 23 percent in the Bering Sea *C. opilio* fishery before rebounding slightly in 2011. Most (if not all) vessel owners are believed to have continued to pay crew a share of vessel revenues after deduction of certain operating expenses (such as food and fuel). The difference in compensation since implementation of the program is believed to have arisen from the deduction of lease payments (made to quota share holders who lease their IFQ to vessel owners for harvest) and mortgage payments or quota costs for purchases of quota share fished by the vessel.⁵

In 2011 (the most recent year), a portion of the fleet attempted to counter this decrease in the share of vessel revenues being paid to crew, in part, through resisting high lease rates.⁶ These efforts appear to have been somewhat successful, as the percentage of ex vessel revenues paid to crew increased from the preceding year by more than 1 percentage point in the Bristol Bay red king crab fishery and in aggregate in both fisheries on vessels that fish both the red king crab and Bering Sea *C. opilio* fisheries. This slight

³ The most obvious effect of the rationalization program on crew arose from the contraction of the fleet. The contraction of fleets in the various fisheries to between one-third and one-half of their pre-program size has resulted in the loss of approximately 975 crew jobs in the Bristol Bay red king crab fishery and approximately 675 crew jobs in the Bering Sea *C. opilio* fishery. While these losses have clearly affected a large number of individuals, additional effects have been felt by those crew who have retained their positions in the fisheries.

⁴ Note that all dollar amounts are adjusted for inflation based on the consumer price index (CPI-U) to 2011 dollars.

⁵ While the deduction of lease payments may be the immediate source of the reduction, it should be noted that modification of crew payments (such as changing from crew share payment system to another payment system or changing the structure of deductions away from charging royalties) could result in the same payment without directly relating the changes to lease royalties (or other quota costs).

⁶ It should be noted that vessel owners also reap benefits if they successfully reduce lease rates, since a substantial share of net revenues (after deductions) are retained by the vessel owner.

increase in the percentage of revenues paid to crew and the large increase in average vessel revenues arising from the increase in Bering Sea *C. opilio* prices contributed to a substantial increase in average captain and crew compensation on vessels that fish both fisheries in 2011.

Table 2. Average crew compensation before rationalization (1998, 2001, and 2004 through 2011).

Fishery	Year	Number of vessels	Mean vessel harvest (pounds)	Mean vessel revenues (\$US)	Mean captain pay (\$US)	Mean crewmember pay (\$US)	Mean percent of gross vessel revenues paid to crew (including captain)
Bristol Bay red king crab	1998	190	56,289	203,761	23,907	9,468	35.3
	2001	182	36,195	218,518	26,951	10,590	35.7
	2004	220	58,802	326,749	37,440	14,769	35.7
	2005	83	194,812	1,010,460	73,177	27,863	25.0
	2006	76	201,666	817,790	55,608	21,632	23.4
	2007	70	269,194	1,297,633	82,283	32,623	22.6
	2008	75	246,932	1,338,084	83,302	35,249	22.8
	2009	67	223,270	1,084,294	63,086	25,593	20.1
	2010	61	229,189	1,716,929	94,186	37,736	19.3
2011	57	130,096	1,354,360	79,555	31,165	20.7	
Bering Sea <i>C. opilio</i>	1998	162	1,098,577	848,016	101,588	34,745	36.2
	2001	158	112,589	218,042	23,483	8,539	31.4
	2004	167	123,606	298,051	35,090	14,067	35.1
	2005	147	158,943	312,263	36,640	15,031	34.6
	2006	73	453,455	561,169	40,274	15,489	23.6
	2007	63	496,195	924,722	65,863	25,848	24.4
	2008	72	780,820	1,393,415	98,927	36,232	23.5
	2009	71	721,180	1,091,346	72,512	28,282	22.7
	2010	63	703,543	918,880	59,089	23,773	22.8
2011	65	760,386	1,940,135	126,151	48,972	23.1	

Source: Crab Economic Data Reporting.

Notes: Excludes any vessels on which crew were paid in excess of 75 percent of the vessel's gross revenues. Period after rationalization is 2005 and after in the Bristol Bay red king crab fishery and 2006 and after in the Bering Sea *C. opilio* fishery. All dollar amounts are adjusted to 2011 dollars.

Table 3. Crew compensation on vessels that fished both Bristol Bay red king crab and Bering Sea *C. opilio* before rationalization (1998, 2001, and 2004) and after rationalization (2006 through 2011).

Year	Number of vessels	Vessel revenues		Captain pay		Crew pay (excluding captain)		Percent of gross to crew (including captain)	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median
1998	151	1,071,273	1,018,863	127,395	121,108	258,845	241,267	35.9	35.3
2001	143	452,313	383,665	52,242	45,094	101,015	90,385	34.1	34.3
2004	162	649,796	610,987	75,713	72,911	154,995	141,605	35.7	35.5
2006	56	1,483,918	1,351,238	106,392	104,292	211,990	201,115	24.0	24.2
2007	55	2,372,439	2,102,188	154,639	156,231	322,239	304,663	23.0	22.4
2008	61	2,980,617	2,890,325	196,536	193,192	420,938	399,019	22.6	22.4
2009	57	2,356,263	2,181,501	146,961	145,014	318,907	284,371	21.1	20.9
2010	56	2,798,649	2,569,278	161,081	160,567	344,781	334,273	19.9	19.2
2011	53	3,548,382	3,187,901	223,231	225,834	489,948	460,036	21.9	20.9

Source: Crab Economic Data Reporting.

Notes: 2005 omitted, as Bering Sea *C. opilio* fishery prosecuted as limited entry derby and Bristol Bay red king crab prosecuted as share-based fishery. Excludes any vessels on which crew were paid in excess of 75 percent of the vessel's gross revenues. All dollar amounts are adjusted to 2011 dollars.

The relationship between compensation and quota consolidation becomes clearer, if the fleet is separated into quartiles of pounds fished (see Table 4). Within each year, in almost all cases, the percent of revenues paid to crew decreases as pounds of crab harvested increases. In other words, as a vessel consolidates quota (by either leasing or purchasing quota), a smaller share of the revenues of the vessel are paid to crews. Although the contractual arrangements likely differ across vessels, this pattern suggests that quota costs are being absorbed, in part, by crew. Vessel owners share quota acquisition costs by deducting those costs from gross revenues prior to applying the crew compensation percentage to net revenues to determine payments to crew. In the first few years of the program, a downward trend in the share of revenues paid to crews is suggested, particularly within the quartiles harvesting the greatest amounts of crab. This trend likely arises, in part, from an adjustment to the change to rationalization. Whether the downward trend reflects a distribution of additional costs (such as fuel costs arising from fuel price increases) that are disproportional to added revenues or simply an labor market adjustment (arising from vessel owners who perceive an opportunity to reduce crew compensation due to overall conditions in the labor market) is uncertain. This trend seems to have abated in the more recent years, as the percentage of ex vessel revenues paid to crew has fluctuated from year-to-year. Most notably, in 2011 in the Bristol Bay red king crab fishery, the percentage of ex vessel revenues paid to crew increased in all quartiles except the lowest quartile. This suggests that efforts to reduce the downward pressure of lease charges against crew compensation appears to have had some effect.

Table 4. Crew compensation by quartile of pounds fished (1998, 2001, 2004 through 2011).

Fishery	Year	Number of vessels per quartile	First quartile of pounds harvested				Second quartile of pounds harvested			
			Mean pounds harvested	Mean vessel revenues	Mean crewmember pay (excluding captain)	Percent of gross to crew (including captain)	Mean pounds harvested	Mean vessel revenues	Mean crewmember pay (excluding captain)	Percent of gross to crew (including captain)
Bristol Bay red king crab	1998	47/48	24,360	94,948	4,412	33.5	42,387	151,142	7,452	36.4
	2001	45/46	14,209	87,167	4,484	33.2	25,222	153,668	7,880	36.5
	2004	55	27,841	155,863	7,302	35.2	47,509	267,862	12,633	34.5
	2005	20/21	61,177	308,985	15,419	32.8	111,565	573,128	24,117	28.6
	2006	19	67,950	291,631	12,792	29.2	126,775	539,361	19,786	26.6
	2007	17/18	98,619	475,406	22,172	32.9	192,984	944,352	28,522	22.7
	2008	18/19	85,454	500,900	19,691	29.0	172,991	946,710	31,640	25.0
	2009	16/17	92,251	447,608	16,172	26.9	184,818	894,010	23,176	19.9
	2010	15/16	91,593	672,457	26,652	28.2	192,946	1,448,955	32,165	16.6
2011	14/15	60,365	633,120	22,278	27.4	101,410	1,075,792	27,453	19.9	
Bering Sea C. opilio	1998	40/41	539,777	420,859	20,263	37.3	934,607	711,288	29,448	36.0
	2001	39/40	45,411	88,506	3,157	27.4	77,664	151,143	6,082	30.7
	2004	41/42	64,885	157,921	7,457	33.9	95,520	232,032	11,347	34.7
	2005	36/37	84,930	177,560	8,663	32.4	122,265	254,399	13,084	36.1
	2006	18/19	153,219	182,589	8,404	30.2	308,944	382,163	11,966	22.4
	2007	15/16	185,828	346,518	16,056	32.4	346,523	651,836	21,927	24.5
	2008	18	308,833	521,787	20,420	27.8	557,810	1,023,385	33,932	25.2
	2009	17/18	300,835	434,538	15,794	26.9	512,418	764,198	24,139	23.6
	2010	15/16	272,788	355,139	13,563	27.6	489,180	624,567	21,305	25.2
2011	16/17	302,207	875,870	27,985	27.0	570,582	1,400,821	49,257	27.0	
Fishery	Year	Third quartile of pounds harvested				Fourth quartile of pounds harvested				
		Mean pounds harvested	Mean vessel revenues	Mean crewmember pay (excluding captain)	Percent of gross to crew (including captain)	Mean pounds harvested	Mean vessel revenues	Mean crewmember pay (excluding captain)	Percent of gross to crew (including captain)	
Bristol Bay red king crab	1998	60,997	220,962	10,011	35.1	96,844	346,085	15,902	36.0	
	2001	35,552	218,050	10,829	37.3	69,304	412,320	19,040	35.6	
	2004	62,574	351,874	15,875	36.7	97,283	531,397	23,268	36.3	
	2005	209,205	1,088,529	30,527	21.5	390,937	2,037,794	40,797	17.3	
	2006	212,079	912,578	23,052	20.5	399,862	1,527,589	30,897	17.1	
	2007	294,186	1,407,262	35,943	19.3	482,900	2,323,924	43,459	16.0	
	2008	282,308	1,521,728	47,571	21.8	438,476	2,338,936	41,275	15.6	
	2009	249,735	1,213,069	32,082	19.4	358,570	1,745,039	30,390	14.7	
	2010	243,171	1,811,094	43,287	17.6	379,055	2,859,069	48,145	15.1	
2011	123,352	1,283,847	31,382	19.1	228,247	2,353,326	42,721	16.6		
Bering Sea C. opilio	1998	1,222,998	938,038	37,642	34.7	1,686,333	1,313,656	51,344	36.8	
	2001	115,683	226,640	8,971	34.0	209,994	402,855	15,825	33.5	
	2004	128,412	311,502	15,586	36.4	204,208	487,413	21,720	35.4	
	2005	156,099	332,575	16,419	35.8	270,478	480,878	21,787	34.0	
	2006	480,291	607,615	17,092	21.8	849,371	1,045,408	24,020	20.3	
	2007	501,859	931,504	26,427	21.3	931,170	1,732,893	38,372	19.9	
	2008	818,908	1,493,960	37,662	21.8	1,437,727	2,534,529	52,914	19.2	
	2009	736,305	1,097,858	29,859	21.0	1,311,810	2,032,299	42,643	19.4	
	2010	708,306	926,423	23,966	20.3	1,316,975	1,734,156	35,619	18.6	
2011	783,536	2,015,552	48,527	19.8	1,348,463	3,378,403	68,873	18.8		

Source: Crab Economic Data Reporting.

Notes: Excludes any vessels on which crew were paid in excess of 75 percent of the vessel's gross revenues. Period after rationalization is 2005 through 2010 in the Bristol Bay red king crab fishery and 2006 through 2010 in the Bering Sea C. opilio fishery. All dollar amounts are adjusted to 2011 dollars.

An alternative way to examine crew compensation is to examine daily pay (see Table 5). Since implementation of the program, daily crew pay (counting only days fishing, transiting, and offloading) appears to have declined. If it is assumed that 10 days are spent doing boat and gear work (in addition to the time fishing, transiting and offloading), daily pay appears to have changed little since implementation of the program. It should also be noted that daily pay does not appear to follow any trend, but has fluctuated annual. These fluctuations likely arise from changing conditions in the fisheries (such as changes in catch rates, crab prices, and vessel operating costs). Notably, in the most recent year (2011), average daily crew compensation (assuming 10 days of boat and gear work) increased to its highest level in any year. If only days on the grounds are included, the 2011 average daily pay level is similar to the average daily compensation prior to the rationalization program. The change in 2011 (in comparison to other years since the program was implemented) arises largely from an increase in crab prices, with some contribution likely from efforts on the part of vessel owners to resist high lease rates.

Table 5. Daily crew compensation 1998, 2001, and 2004 through 2011).

Fishery	Year	Number of vessels	Fishing, transiting and offloading			Fishing, transiting and offloading plus 10 days boat and gear work		
			Mean number of days	Mean daily captain pay (\$)	Mean daily crew member pay (\$)	Mean number of days	Mean daily captain pay (\$)	Mean daily crew member pay (\$)
Bristol Bay red king crab	1998	190	8.0	3,126	1,234	18.0	1,339	530
	2001	182	6.1	4,730	1,869	16.1	1,697	668
	2004	220	7.0	5,698	2,235	17.0	2,216	872
	2005	83	26.6	3,079	1,203	36.6	2,053	794
	2006	76	22.3	2,785	1,094	32.3	1,777	693
	2007	69	32.4	2,783	1,112	42.4	2,020	805
	2008	75	32.6	2,800	1,204	42.6	2,027	870
	2009	66	30.7	2,323	954	40.7	1,628	666
	2010	61	35.9	2,818	1,146	45.9	2,121	859
	2011	56	18.7	4,861	1,888	28.7	2,905	1,133
Bering Sea C. opilio	1998	162	66.1	1,536	525	76.1	1,334	456
	2001	158	33.4	697	253	43.4	537	195
	2004	167	13.9	2,631	1,045	23.9	1,487	593
	2005	147	11.1	3,679	1,525	21.1	1,790	738
	2006	73	39.7	1,142	434	49.7	844	322
	2007	62	36.8	1,964	763	46.8	1,450	565
	2008	72	48.8	2,124	808	58.8	1,699	640
	2009	70	50.5	1,544	606	60.5	1,235	484
	2010	63	44.0	1,391	573	54.0	1,091	447
	2011	64	48.4	2,751	1,090	58.4	2,201	869

Source: Crab Economic Data Reporting.

Notes: Mean crew size is a count of all crew paid shares excluding the captain. Excludes any vessels on which crew were paid in excess of 75 percent of the vessel's gross revenues. Excludes vessels harvesting CDQ allocations for Bristol Bay red king crab in 1998, 2001, and 2004 and for Bering Sea C. opilio for 1998, 2001, 2004, and 2005. All dollars are adjusted to 2011 dollars.

To consider addressing these problems, the Council has identified four measures that it would like to explore in this paper: 1) limits on lease rates, 2) limits on the portion of lease rates that may be charged to crew, 3) minimum crew compensation, and 4) measures to promote transfer of shares to active participants. The remainder of this paper briefly discusses these provisions suggested by the Council. As a part of the development of an amendment package, the Council must first develop a purpose and need statement to guide and support the action. The Council's purpose and need statement should be based on its Magnuson Stevens Act management authority. This authority stems from both the general provisions of the Magnuson Stevens Act, which are applicable to all Council actions and the specific authority granted the Council to establish the crab rationalization program. That legislation provided:

Subsequent to implementation [of the program], the Council may submit and the Secretary may implement changes to or repeal of conservation and management measures, including measures authorized in this section, for crab fisheries of the Bering Sea and Aleutian Islands in accordance with applicable law, including this Act as amended by this subsection, to achieve on a continuing basis the purposes identified by the Council.⁷

This appears to provide the Council with authority to amend the program to achieve the purpose and need identified at the time the program was adopted. That purpose and need statement provides:

Vessel owners, processors and coastal communities have all made investments in the crab fisheries, and capacity in these fisheries far exceeds available resources. The BSAI crab stocks have also been highly variable and have suffered significant declines. Although three of these stocks are presently under rebuilding plans, the continuing race for fish frustrates conservation efforts. Additionally, the ability of crab harvesters and processors to diversify into other fisheries is severely limited and the economic viability of the crab industry is in jeopardy. Harvesting and processing capacity has expanded to accommodate highly abbreviated seasons, and presently, significant portions of that capacity operate in an economically inefficient manner or are idle between seasons. Many of the concerns identified by the NPFMC at the beginning of the comprehensive rationalization process in 1992 still exist for the BSAI crab fisheries. Problems facing the fishery include:

1. Resource conservation, utilization and management problems;
2. Bycatch and its' associated mortalities, and potential landing deadloss;
3. Excess harvesting and processing capacity, as well as low economic returns;
4. Lack of economic stability for harvesters, processors and coastal communities; and
5. High levels of occupational loss of life and injury.

The problem facing the Council, in the continuing process of comprehensive rationalization, is to develop a management program which slows the race for fish, reduces bycatch and its associated mortalities, provides for conservation to increase the efficacy of crab rebuilding strategies, addresses the social and economic concerns of communities, maintains healthy harvesting and processing sectors and promotes efficiency and safety in the harvesting sector. Any such system should seek to achieve equity between the harvesting and processing sectors, including healthy, stable and competitive markets.

The following discussion of the specific measures that follows identifies some possible sources of authority, should the Council elect to advance an action concerning any of the four issues it has identified.

⁷ See Consolidated Appropriations Act of 2004, Sec. 801 amending the Magnuson Steven Act Sec. 313(j)(3).

The regulatory structure that defines fishing privileges under the crab program allows for the transfer of both quota shares and IFQ subject to limits on use and holdings of those shares. IFQ, however, may only be transferred within and among cooperatives. In addition, leasing of IFQ (defined as the harvest of IFQ by a vessel not owned by the quota share holder or on which the quota share holder is not present) is only permitted by cooperatives. Transfers of IFQ within a cooperative are overseen only by the cooperative, allowing a cooperative to distribute and redistribute IFQ among member vessels with no administrative limitations or delays. The only IFQ transfers administered by NOAA Fisheries are those between cooperatives. Cooperative vessels are exempt from vessel use caps, freeing cooperative vessels from any regulatory limit on the amount of a cooperative's allocation they may harvest. This cooperative structure provides participants with relatively high operational flexibilities, particularly in comparison to fishing opportunities outside of cooperatives. Because of the contrast between cooperative and non-cooperative fishing opportunities, almost all fishing has occurred in cooperatives. As a result, it is self-evident that the changes brought on by leasing (including changes in active participation and crew compensation) have arisen almost exclusively in cooperatives.

The Council's motion requesting this paper suggests that the measures be considered as requirements of cooperative agreements. The rationale for using cooperative agreements for implementing the measures is clear when considering the structure of the rationalization program. Each of the suggested measures is intended to address effects that arise largely from the share trading and redistribution, which occur exclusively within and among cooperatives. The Council has asked that the paper examine cooperative implementation of these measures, in part, to address the problems at their root. Cooperative implementation may also provide other advantages, which are discussed in the specific sections addressing each of the various measures.⁸

Generally, cooperative implementation could be accomplished through each cooperative being required to incorporate certain provisions in its cooperative agreement to establish the measure. Cooperatives could also collect information from members verifying compliance with the measure. In addition, each cooperative could be required to report to the Council showing its compliance with the measure. These three requirements could be used to establish the measure and ensure that participants follow through with internal oversight of the measure. In addition, the measures should be developed in a manner that provides specific direction to the cooperatives and fishery participants who are subject to the measure. Only measures that are specific can reliably achieve the intended results.

Promoting quota holdings by active participants

The first measure the Council has suggested for consideration is a measure to promote the acquisition of quota by persons active in the fisheries. This measure may be intended to address an overall policy goal of creating additional opportunities for persons active in the fisheries to have better access to quota. Persons who are active in the fisheries may maintain a better understanding of fishery conditions. This understanding is argued to create a stewardship ethic, helping to ensure that the resource is maintained. Active quota holders are also argued to be more engaged in day-to-day operations and have a better appreciation of risks in the fisheries and how those risks evolve. This understanding of risks may translate into better vessel maintenance and operations, improving safety in the fisheries. A requirement that persons holding QS maintain would also consistent with the dictate of the Magnuson-Stevens Act that

⁸ At times, it has been suggested that industry could independently adopt measures that cap lease payments, limit the extent to which lease payments may be charged to crew, or establish a minimum crew pay standard as a percentage of vessel revenues. Some members of industry have expressed concern that these arrangements could create antitrust concerns, as they could be construed by a court as an attempt by industry to limit prices or payments. As a result, cooperative administration of these measures is suggested to require Council direction.

limited access privileges be held by persons who substantially participate in the fisheries (see Magnuson Stevens Act Sec. 303A(c)(5)(E) or 16 USC 1853a (c)(5)(E)).

While promotion of quota holdings by persons active in the fishery may be argued to have benefits, it is difficult to understand the effects of any such measure, given the vagueness of the current proposal. Cooperatives could adopt a variety of different measures to promote quota ownership by members who are active, such as loan assistance, buyer preferences, or rights of first offer. The specific measures being suggested by the Council are not defined by the motion. The Council could choose one of two means of pursuing the action.

First, the Council could develop specific requirements for cooperative agreements, which require a cooperative to adopt certain measures to promote acquisition of quota shares by persons meeting active participation requirements (such as vessel ownership or crewing requirements). The cooperative could also be required to monitor the provision and annually report to the Council on the transfers that have occurred and the extent to which transfers were received by persons who are active. This type of a requirement could be difficult to develop. Specific thresholds for active participation will need to be defined. Consequences for failing to meet those thresholds may also need to be defined. Persons could be prevented from forming a cooperative in subsequent years or could simply be subject to enforcement actions. Since cooperatives in the program are strictly voluntary, development of measures to address failing to meet requirements could be complicated. While peer pressure from fellow cooperative members may be effective in creating incentives for complaint behavior, imposing a penalty or limitation on members of a cooperative who are active in the fisheries for the failure of another member to meet an active participation requirement may be perceived to be problematic. If the Council wishes to pursue a specific cooperative requirement, considerations such as these may be relevant.

An alternative could be to adopt a more general requirement that each cooperative develop and adopt its own measures to facilitate the acquisition of quota shares by active participants. This alternative would allow each cooperative the flexibility to address the issue in a way that it perceives to be the most appropriate for its circumstances. Each cooperative could also be required to report annually on the performance of the measures. Although a less specific requirement may be less effective in some instances, it may also allow cooperatives flexibility to address their own circumstances. A small cooperative that has mostly active participants may appropriately establish internal financing of crew quota share purchases. A larger cooperative may better address active participation share acquisitions by granting a purchase preference to active participants. This added flexibility may come at a cost, if cooperatives choose to minimally address the issue with measures that do little to ensure that transfers are made to active participants.

Under either of the suggested alternatives, the Council could also require cooperatives to annually report on the extent to which its cooperative's members are active. Such a report could identify the number of quota share holders in the cooperative, the amount of IFQ brought to the cooperative by those quota share holders that are active and inactive, as well as the changes in the number of quota share holders and amount of quota shares that are held by persons who are active. The report could also separately identify members who are active as crewmembers, as well as persons meeting a specified vessel ownership interest.

Limits on lease rates

The high lease rates in the fisheries are said to contribute greatly to the decline in revenues to persons who actively participate in the fisheries as vessel owners and crew. It is suggested that lower lease rates would allow for more of the fisheries' revenues to be realized by vessel owners and crews. These

additional revenues could address concerns that vessel owners have reduced revenues for vessel maintenance and that crews have suffered declines in compensation under the rationalization program.

As noted earlier, understanding leasing in the crab fisheries is complicated by the regulatory structure. Most transfers of shares occur inside cooperative and, as such, are not directly reported to NOAA Fisheries. These internal distributions of IFQ are typically directed by members, without cooperative managers having full knowledge of the terms of the transaction (particularly financial terms). Similarly, transfers between cooperatives are often made at the direction of members, without cooperative managers having full information concerning the transfers. For cooperatives to take on a role of overseeing all transactions to implement a cap on leases would require that cooperatives take on the role of monitoring all transfers of shares to ensure that the cap is not exceeded. To effectively monitor transactions in this manner will require that the Council develop a definition of a lease. Defining a lease for purposes of limiting the lease rate (or the amount of revenues that may be transferred in exchange for use of the shares) may seem relatively straightforward, in comparison to defining a lease for purposes of determining the overall market lease rate. For example, the limitation could be applied to any transfer of IFQ within a cooperative or between cooperatives. While the documentation of specific lease rates could be problematic, as a variety of arrangements (including in-kind transfers) among a variety of different entities are likely, verification that lease rates do not exceed a specified level may be possible.

If adopted, a lease cap could be implemented by requiring each cooperative to include in its cooperative agreement a provision that prohibits leases in excess of the cap. Cooperatives could also be required to report on leases within the cooperative and between the cooperative and any other cooperative, verifying simply that no lease rate exceeded the specified cap. The cooperative could use a system of affirmations from its members to support its report. It should be noted that the report (and supporting affirmations) would not specify any lease rates, but only that lease rates did not exceed the cap.

Whether a measure such as caps on lease rates will achieve desired effects, however, is uncertain. While limiting cash payments to persons who lease QS could complicate efforts by those persons to realize the maximum return from their share holdings, such a limit may not mean that alternative means of achieving the maximum return are not developed. The simplest means of avoiding the cap would be to enter arrangements that avoid the characterization of the share distribution as a lease. Transfers between persons active in the fisheries can include shares of other species or other goods obscuring lease rates. Persons not active in the fishery may use partnerships and corporate share holding arrangements to avoid leases. For example, partnership agreements could be entered annually (or less frequently) that specify that IFQ yielded by certain quota shares will be distributed within a cooperative for harvest by a specific vessel owned by one partner. An inactive quota share holder (who holds no interest in the vessel) may transfer quota to the quota holding partnership and hold a large interest in that partnership, effectively receiving payments equivalent to a lease that pays in excess of the cap. The specific arrangements could be tailored to accommodate a rule developed by the Council to ensure that the distribution of IFQ to the vessel for harvest would not be considered a lease, since the vessel owner may hold an interest in the quota holding entity.

The Council could attempt to close off these opportunities by providing better definition of instances that would be considered a lease for imposing the cap. A lease could be defined as use of IFQ on a vessel that is not owned in part or crewed by the holder of the quota shares that yielded the IFQ. A threshold ownership amount could be established for determining common ownership of a vessel and the held quota shares. Through this definition of leasing, the Council might effectively drive inactive quota share holders into partnerships with persons active in the fishery, but these measures may not fully address the concern of persons whose only interest in the fisheries are quota holdings receiving a substantial amount of the value associated with harvests from the fisheries.

Capping lease payments that may be charged to crew

Crews in the crab fisheries are typically paid a share (or percentage) of adjusted vessel revenues. Historically, adjustments have been made for normal vessel expenses, such as bait and fuel. Since implementation of the rationalization program, many vessel operators have also made adjustments for quota share lease payments. To limit the effects of the leasing market and these lease payment on crew, it is suggested that the amount of any lease payments that may be charged to crews could be limited. Limiting these charges could be used to attempt to protect crews from the financial impacts of high lease rates and widespread leasing practices in the fisheries, which may be contended to contribute to both equity and economic stability in the harvesting sector.

Any limit on lease charges passed on to crews could be implemented in a manner similar to the suggested implementation of the limit on lease rates, discussed above. A cooperative could be required to include a provision in its cooperative agreement prohibiting charging lease rates to crew in excess of a threshold percentage. Cooperatives could also be required to report to the Council that no crews were charged in excess of the threshold. Cooperatives could use affirmations from members to support their reports.

Although capping the amount of lease payments that may be charged to crews is intended to insulate crew from the effects of leasing in the fisheries, whether such a measure would be effective is uncertain. Vessel owners can structure contracts a variety of ways to arrive at the same payment. If lease rates charges are limited, it may be possible to add other charges or adjust the crew share percentage to arrive at the same crew payment that would have been made, if the full lease rate was charged.⁹ It is difficult to envision how a measure could be developed to address these modifications, given the variety of structures crew contracts can take and the number of elements that may be incorporated into those contracts.

Minimum crew pay standards

An alternative to capping lease payments that may be charged to crew could be to establish minimum crew pay standards. Such a standard could define the minimum percentage of gross ex vessel revenues that a vessel may pay to its crewmembers. Such a limit could serve a purpose similar to a minimum wage law. Such a measure would be intended to more directly and comprehensively protect crew from further declines in the share of vessel revenues paid to crew that has occurred under the rationalization program. The more general goal of these measures may be to achieve equity and economic stability in the harvest sector.

As with the preceding measures, cooperative implementation could be accomplished through requirements that a cooperative: 1) to include in its cooperative agreement a provision that requires all vessels to compensate crews in excess of a specified percentage of the vessel's gross revenues, 2) collect from each members' vessels gross revenues and total crew compensation that can be used to verify compliance, and 3) annually report to the Council concerning compliance with the requirement. The annual report may not require a cooperative to specifically report on crew compensation amounts (due to confidentiality limitations), but would simply be an affirmation that the cooperative's vessels all met the standard. A cooperative, however, may elect to provide more specific information concerning crew compensation.

⁹ If the Council wishes to proceed with an action to limit lease payments charged to crew it should also consider that quota charges that serve a similar function as lease charges (such as mortgage payment charges) may have a similar effect on crew compensation. The Council should consider whether its measure should be written to include these other charges.

As with other cooperative measures under discussion here, the Council should consider factors that may either limit the success of this proposed measure or pose challenges in defining the measure. Since implementation of the program, crew compensation as a percentage of gross revenues has varied with the amount of harvests. Some participating crews have suggested that the consolidation of quota provides a benefit, even if payments for harvest of that added quota are at a lower percentage due to charges for lease payments. In other words, some crew may believe that the acceptable minimum share of vessel revenues paid to the crew should differ with the amount of harvests. Whether appropriate minimum percentages can be defined that protects crews on vessels that harvest substantially different amounts of crab is uncertain.

Owner operated vessels and vessels that harvest quota of crewmembers could also pose a challenge. It is possible that owner operated vessels and vessels that catch a substantial amount of quota held by crew may be able to achieve the standard by disguising payments for vessel ownership or quota holdings as crew compensation. Developing a measure that accurately separates pay for working as the captain on the vessel (or payments for share holdings) from payments for crewing could be difficult.

Reasonable compensation may differ across fisheries due to a variety of factors (such as crab prices, catch rates, working conditions, and risk). These differences are suggested by historical data from the fisheries. For example, the percentage of vessel gross revenues paid to crew in the Bristol Bay red king crab fishery has been lower than that percentage in the Bering Sea *C. opilio* fishery; however, daily pay in the red king crab fishery has exceeded daily pay in the *C. opilio* fishery. Any percentages should consider the whether different percentages are appropriate for different fisheries. In addition, to the extent that harvests overlap across fisheries (such as *C. bairdi* harvests made in the Bristol Bay red king crab and Bering Sea *C. opilio* fisheries), it may be difficult (or inappropriate) to attempt to separate payments by fishery.

Another consideration (that is more concerning) is whether the adoption of such a measure would lead to all (or most) vessels simply paying the proposed minimum payment. Some vessel owners may be tempted to adopt the minimum payment as the Council's recommended crew compensation, rather than as an acceptable minimum. If this practice is adopted, some crew could be harmed substantially.

Active participation requirements

While the high degree of flexibility allowed cooperatives in use of their IFQ has permitted quota share holders to achieve operational efficiencies increasing the benefits derived from their share holdings, it has also allowed for inactive quota share holders, which concerns the Council and some stakeholders. These QS holders have used cooperative membership to derive ongoing benefits from the fisheries despite maintaining no role in the fisheries beyond leasing of their fishing privileges to vessel operators. Many stakeholders do not object to these QS holders receiving compensation for their share holdings, as those holdings are derived from fishery investments (either in QS directly or in licenses and vessels from which QS allocations were derived). Some stakeholders, however, question whether these QS holders should be permitted to continue to hold QS and receive continuing annual payments from the fisheries, as their holdings may limit the ability of some vessel owners and other active participants in the fisheries from gaining more secure positions through the development of long term share holdings. To the extent that these lease arrangements have limited the amount of QS on the market, vessel owners and active crewmembers are subject to the vagaries of the lease markets for a large share of the vessel's harvests, rather than having a more certain allocation that arises from QS holdings.

A means of redressing this circumstance could be to develop a requirement that any cooperative member meet an active participation requirement. For example, a cooperative could be required to verify that all of its members either own a threshold interest in a vessel that actively fishes in the crab fisheries or meet a crewing threshold in the fisheries. These requirements could be similar to the suggested requirements of

the Council's current active participation alternatives. Incorporating these active participation requirements into cooperative requirements, however, could reduce the administrative burden of the agency considerably, by shifting that burden to cooperatives. Each cooperative would need to maintain vessel ownership and vessel and crew harvest records of member quota share holders sufficient to demonstrate compliance with the active participation requirements, as needed to support an annual report.¹⁰

Conclusion

The Council requested this paper as a first step in its consideration of a variety of measures to address issues related to share purchase opportunities for persons active in the crab fisheries and high lease payments in the fisheries and the effects of those payments on active participants. The paper outlines possible measures that the Council could consider to develop alternatives for analysis. If the Council wishes to proceed with an action, it will need to first develop a purpose and need statement identifying its reasons for undertaking action to address these issues. Relying on that purpose and need statement, it can then identify alternatives that will address perceived specific issues.

¹⁰ Shifting the burden to cooperatives could have the effect of distributing those costs among cooperatives in proportion to the complexity of their circumstance, possibly creating a direct incentive for cooperatives (and their members) to maintain simple ownership structures for purposes of meeting active participation requirements. Under agency administration, this incentive is lacking since any administrative cost borne by industry would be through cost recovery.