DRAFT

North Pacific Fishery Management Council
December 2008 Motion
C-4 Agenda Items

Analysis of alternatives to revise the program

Purpose and need statement:
The Bering Sea/Aleutian Islands (BSAI) Crab Rationalization Program is a comprehensive approach to rationalize an overcapitalized fishery in which serious safety and conservation concerns needed to be addressed. Conservation, safety, and efficiency goals have largely been met under the program.

Experience under the BSAI Crab Rationalization Program has made apparent the need to analyze alternatives to status quo to achieve: entry-level investment opportunities for active participants

This focused analysis on entry level investment opportunities for active participants will by definition include an analysis of the A/B split through potential share conversions.

Additional flexibility under the program is needed to address some inefficiencies created through the share matching system. For example, if a PQS holder opts not to apply for IPQ, the program should allow competitive markets to determine whether resources are harvested rather than redistribute the IPQ for share matching.

Processors and communities have received protections through processor quota shares under this program since the year of implementation. Higher TACs afford an opportunity to expand competition while maintaining protection for processor investments and recognizing community dependency under an IPQ threshold.

Alternative 1:
No action, status quo.

Alternative 2:
Increase investment opportunities for active participants by increasing the proportion of C share quota in all rationalized fisheries through a market-based reallocation.

Change the 3 percent C share allocation to:

a) 6 percent
b) 8 percent
c) 10 percent

Suboption: Applicable only to b) and c) above (increase to 8 or 10 percent), redesignated C shares will be subject to:

1) the A share/B share split (including regionalization)
2) regionalization

Suboptions: Use the following mechanism to achieve the increase (i and iii can be combined):

i) A pro-rata reduction in owner shares (distributed over a period not to exceed 5, 7, or 10 years) to create C shares available for active participants to purchase. Owner share

holders who meet active participation requirements would be able to retain their converted C shares.

ii) A percentage re-designation of owner shares to C shares at the time of each transfer. The purchasing owner is required to comply with the active participation definition or divest of the C shares.

iii) A pro-rata reduction of PQS (distributed over a period not to exceed 5, 7, or 10 years) and conversion into C shares available for active participants to purchase through market transactions.

PQS/QS Conversion Rate

Each crab fishery may have a different conversion ratio. These ratios are based on rough estimates of the relative value of each PQS to CVO QS. This range could be expanded or modified based on further analysis.

a) 1 PQS unit =- 0.5 CVO QS unit
b) 1 PQS unit =- 0.4 CVO QS unit
c) 1 PQS unit =- 0.3 CVO QS unit
d) 1 PQS unit =- 0.2 CVO QS unit
e) 1 PQS unit =- 0.1 CVO QS unit
f) 1 PQS unit =- 0.075 CVO QS unit

Alternative 3:

Increase investment opportunities for active participants by establishing a preferential purchase and finance program for all share types (but no share conversion).

1) The Crab Advisory Committee is directed to consider the potential for a private contractual proposal to increase investment opportunities for active participants. A response and recommendations will be made to the Council.
2) The proposed program should address the following:
   a. Establishing goals for an aggregate amount of QS owner shares to be held by active participants at 5, 7, and 10 years.
   b. Identify and address any potential impacts on industry efficiency or investment and on communities.
   c. Identify any regulatory issues that may need to be addressed, such as use and ownership caps, and provide recommendations to address these issues.

Alternative 4:

C share Regional Fishery Association

The committee is tasked to review proposals to form a regional fishery association (RFA) to hold and distribute C shares on behalf of RFA members.

If RFAs are established, the aggregate total of all C shares shall be:

a) 6 percent
b) 8 percent
c) 10 percent.

Component 1 (IPQ accounting when PQS holder opts not to apply)

If a PQS holder opts not to apply for IPQ in a year, distribute harvesting quota that would have been the matching CVO IFQ A shares as open delivery B shares.

Component 2 (Establish IPQ thresholds)

The amount of IPQ (individual processing quota) issued in any year shall not exceed,

Option a) in the *C. opilio* fishery,

i) 26 million pounds.

ii) 45 million pounds.

iii) 64 million pounds.

iv) 80 million pounds.

Option b) in the Bristol Bay red king crab fishery,

i) 12 million pounds.

ii) 15 million pounds.

iii) 18 million pounds (status quo).

Suboption: Any IFQ above the threshold will be auctioned by NMFS to the highest bidder.

EXECUTIVE SUMMARY

In August of 2005, fishing in the Bering Sea and Aleutian Island crab fisheries began under a new share-based management program (the "program"). The program is unique in several ways, including the allocation of processing shares corresponding to a portion of the harvest share pool. These processor shares were allocated to processors based on their respective processing histories. To protect community interests, holders of most processor shares were required to enter agreements granting community designated entities a right of first refusal on certain transfers of those shares. Since implementation, community representatives and fishery participants have suggested that some aspects of the rights of first refusal may inhibit their effectiveness in protecting community interests. This amendment package considers actions intended to address the following three of the concerns:

1) the relatively short period of time allowed for exercising and performing under the right;
2) the lapse of the right after three consecutive years of use of the individual processing quota (IPQ) outside the community or if a community entity elects not to exercise the right on a transaction to which it applies; and
3) the requirement that the right apply to all assets involved in a transaction, which could include assets outside the community.

Purpose and Need Statement

The Council has adopted the following purpose and need statement for these actions:

> *The Bering Sea/Aleutian Islands crab rationalization program recognizes the unique relationship between specific crab-dependent communities and their shore-based processors, and has addressed that codependence by establishing community "right of first refusal" agreements as a significant feature of the program. These right of first refusal agreements apply to the Processor Quota Shares initially issued within each community, and are entered into and held by Eligible Crab Community Organizations on behalf of each respective community.*
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> *To date, there have been several significant Processor Quota Share transactions, resulting in Eligible Crab Community Organizations now holding between 20 percent and 50 percent of the PQS in each rationalized fishery. However, the ability of the right of first refusal to lapse may diminish the intent to protect community interests. Also, limiting the time period to exercise the right may conflict with the ability to exercise and perform under the right of first refusal. In addition, some communities, when exercising the right of first refusal may have no interest in purchasing assets located in another community and feel the right of first refusal contract should exclude any such requirement.*

Alternatives

The Council has identified three actions for this amendment package. In all cases, the actions are defined by a single alternative that is compared to the status quo alternative, under which all aspects of the current right of first refusal structure would be maintained. Under Action 1, the time available for a community entity to exercise a right of first refusal would be extended from 60 days to 90 days, and the time for a community entity to perform under the contract would be extended from 120 days to 150 days. Under Action 2, a right of first refusal could be continued, or changed to benefit a different community, depending on the circumstances. Under one alternative, the right would continue to benefit the original community indefinitely (Alternative 2). Under another alternative, the right would shift to a different community, if the PQS is sold and used in that second community for a set period of time (Alterntive 3). Under Action 3, a community entity's right would be applied to either the subject PQS only (Alternative 2) or to the subject PQS and assets located in the community intended to benefit from the right of first

refusal (Alternative 3).

Effects of Action 1 – Increase the time for exercise and performance of the right of first refusal

In considering whether to exercise a right of first refusal, a community must examine the merits of the transaction and arrange its performance. These factors suggest that an extending the period to exercise a right and perform under the contract could be beneficial to entities making that decision. The extension is likely to be particularly beneficial for communities that adopted provisions for public notice and meetings to decide whether to exercise the right. Even this extended time period, however, is likely to pose a challenge, for large transactions that include a variety of assets other than the subject PQS. Although lengthening the time for exercise and performance under the right may benefit community entities, lengthening those time periods could complicate transactions for parties affected by the right. Under the terms of the right, a PQS holder and buyer can prevent a community entity from intervening in the transaction, if the buyer agrees to grant a right of first refusal to the community entity and to use a portion of the IPQ yielded by the PQS in the community for a period of years. Although these concessions may affect the value of the assets transferred (including the PQS), the parties to the transaction can effectively limit the ability of the community entity to disrupt the transaction by exercising the right. This ability may reduce the difficulty posed by the time period extensions to PQS holders. As a result, the proposed time period extensions are likely to have only minor effects on PQS holders, the parties with which they might transact, and community entities.

Effects of Action 2 – Extending the right indefinitely or transferring the right to a different community, if original right holder elects not to exercise the right

Under this action, rights of first refusal on PQS would either be extended indefinitely without lapse or rights would be transferred to a new holder, if the original holder elects not to exercise the right and a community develops a dependence on the PQS. Currently, the right lapses on use of the yielded IPQ outside the community for a period of three consecutive years or if the community entity fails to exercise the right when a transfer is made that is subject to the right. Making the right persist indefinitely would establish a perpetual contractual link between PQS and the community where processing occurred that led to the allocation of that PQS (but would not ensure use of the IPQ in the community). Under the first action alternative, this community/PQS association would be maintained regardless of whether the PQS holder used the yielded IPQ outside of the community for several years or transferred the PQS to another holder. Once triggered by a transfer, the right would supersede the interests of other parties, including communities where the yielded IPQ have been processed in the intervening years. The exercise of a right in this circumstance could disrupt the dependence on the processing activity that developed in the community that attracted the processing. At the extreme, this dependence be established through several years of processing activity. Community entities might also have multiple opportunities to acquire the PQS, since all transactions for use outside the community would trigger the right. So, a community entity that was unable or unwilling to intervene in a transaction for PQS will have the opportunity to intervene and acquire the shares in any future transaction subject to the right. These future opportunities may be important, if the circumstances and financing of the community entity change or the second transaction is on more appealing terms, which could occur if fewer PQS are included in the transaction or prices change.

Under the second action alternative, if a right holder failed to exercise the right and the IPQ was used in another community after a period of years (1, 3, or 5). The right would shift to the other community. This alternative would protect the interests of communities that develop a dependence on PQS, if the right holding community fails to exercise its right at the time of a transfer. **Full analysis of this alternative will require additional definition of the alternative by the Council.**

PQS holders are also affected by these extensions of the right. To the extent that rights of first refusal diminish the value of PQS, that diminution would be perpetuated by extending the right. Despite the

existence of the right, it remains likely that for most transactions PQS holders and buyers will avoid triggering the right by agreeing to use the IPQ in the right holding community to the extent required for avoiding triggering the right. In the long run, meeting this minimal requirement may be more difficult, particularly if processing activity is discontinued in some communities. To the extent that the right is intended to protect community interests, that protection may be lacking under the status quo, in part, because of its current lack of permanence. Yet, several other aspects of the right limit the effectiveness of the provision in protecting community interests. By its nature, the right only applies to transfers. Absent a transfer, shares may move freely among communities under other processing arrangements (including those internal to a company, as well as custom processing arrangements). This limitation on the right leaves a community entity unable to prevent the movement of processing from its community, as long as the PQS holder chooses not to transfer the shares. In addition, communities that become reliant on these allowed movements of processing activity are unprotected by the right in its current form.

Effects of Action 3 – Apply the right of first refusal to only subject processor shares or subject processor shares and assets in the community of the entity holding the right

Under this alternative, right of first refusal contracts are required to provide that the right shall apply to either 1) only the PQS or 2) the PQS and other assets physically present in the community of the entity holding the right of first refusal. In the event assets not subject to the right are included in the proposed sale, price of the assets subject to the right shall be determined by an appraisal process. In addition, under the alternative that applies the right to assets based in a community, an arbitration process could be applied to determine the assets subject to the right. Several administrative aspects of the process will need to be considered in whether to adopt either of the alternatives.

Under the second action alternative, the Council must define a standard for determining items that are subject to the right (i.e., assets that are "community-based"). Many assets are mobile and can be moved among communities. For example, a company that sells its PQS with its floating platform may be confronted by a community (or processor) claim that the floating platform is (or is not) a community based asset. If the Council wishes to proceed with this alternative, a standard would need to be defined for determining the assets based in a community to which the right would apply. The current motion suggests that an arbitrator or appraiser could be used to make this determination, but a specific process and timeline are not specified. Those aspects of the alternative require additional attention.

Assuming that assets to which the right will apply are well defined, the process for establishing a price for those assets (independent of other assets included in the transaction but excluded from the right) must be considered. As suggested in the motion, a jointly selected appraiser (or team of appraisers would be used). The time for selection of appraisers and its effect on the timeline for exercising a right and performing under the contract should be considered.

Notwithstanding the specific development of this action, PQS holders are likely to respond to the application of the right to only PQS (and possibly community based assets) in a few predictable ways. First, the PQS holder may attempt to negotiate an agreement with the community entity to allow the sale to proceed without the entity exercising the right. To secure an agreement the PQS holder may need to provide something of value to the entity, which could be financial remuneration or a portion of the PQS. A community entity may have little leverage in this negotiation, if the PQS holder knows that the entity is without the wherewithal to exercise the right, but the community could receive some compensation for the security it provides in exchange for its agreement to allow the sale. CDQ groups that represent communities are likely to be better positioned to exercise the right than other community entities, but this could change over time if the other entities develop portfolios of fishing privileges and other interests. Alternatively, the person receiving the PQS could avoid the right being triggered by agreeing to use the requisite amount of IPQ in the community for the requisite period and extending the right to the entity in a second contract. This approach would maintain the community entity's interest in the PQS under the

terms of the right with the new holder. A third way to avoid community entity intervention in a transaction is for the PQS holder, prior to the transfer, to use the IPQ outside of the community for three consecutive years causing the right to lapse.[1] To use this approach, the PQS holder would only need to move the IPQ from the community ahead of the transaction to ensure the right lapsed; however, this approach provides the PQS holder with the greatest flexibility at the time of the PQS sale. Lastly, a PQS holder that is undertaking a transaction might also subdivide the transaction. One transaction could be for the PQS and associated community based assets; the other transaction would be for any other assets. By subdividing the transaction in this manner, the PQS holder and the buyer can ensure that the price of PQS and the price of other assets in the transaction are set at an acceptable level, should the right holder intervene in the transaction. At the extreme, assets not subject to the right could be offered at a nominal price, with the PQS and community based assets carrying the bulk of the value of the transaction. Although the motion suggests a process that would allow a right holder to contest the price, the use of that process could be costly. Clearly, a variety of contractual arrangements might be made to ensure that the PQS holder receives reasonable value for assets (including the PQS), particularly in cases where the value of the assets is highly dependent on the accompanying PQS. Given the costliness of any administrative process associated with determining a price for assets subject to the right and the potential for PQS holders to avoid triggering the right, it is questionable whether the action alternatives would provide substantially greater protection of community interests than the existing right.

[1] This choice may be unavailable, if the Council elects to extend the right in perpetuity.

Executive Summary

In the spring of 2007, the North Pacific Fishery Management Council (the Council) established a committee to address certain concerns with the Bering Sea and Aleutian Islands crab rationalization program (the program). In the course the committee's meetings, members expressed concern that at times of extreme icing and other uncontrollable circumstances, the regional landing requirements applicable to Class A individual fishing quota (IFQ) could pose safety risks, loss of resource (such as excessive deadloss), or extreme economic hardships to participants in the crab fisheries. At its October 2008 meeting, after receiving a staff discussion paper, an advisory panel recommendation, and public testimony, the Council directed staff to prepare an analysis of alternatives to provide an emergency exemption from regional landing requirements. To avoid potential insurmountable administrative burdens the Council identified for analysis a system of civil contracts between harvesters, processors, and a regional representatives as the means of defining the exemption from the regional landing requirements. The analysis contains a Regulatory Impact Review, an Environmental Assessment, and an Initial Regulatory Flexibility Analysis.

Purpose and need statement

The Council has adopted the following purpose and need statement for this action:

> *In developing the crab rationalization program, the Council included several measures to protect regional and community interests. Among those provisions, the Council developed regional designations on individual processing quota and a portion of the individual fishing quota that require associated catch to be delivered and processed in the designated region. Since implementation of the program in late 2005, and except in the case of the Western Aleutian Islands Golden King Crab fishery, all of the crab IFQ has been harvested and processed as intended by the crab rationalization program. However, icing conditions in the Northern Region have created safety concerns, and delayed and in some cases prevented harvesters from entering harbors to deliver to shore-based and floating processors located in the regions, as required by the regional share designations. In addition, other unforeseeable events, events such as an earthquake or tsunami, or man-made disaster, could prevent deliveries to eligible processors in a region necessary for compliance with the regional designations on Class A IFQ and IPQ. A well-defined exemption from regional landing and processing requirements of Class A IFQ and IPQ that includes requirements for those receiving the exemption to take efforts to avoid the need for and limit the extent of the exemption could mitigate safety risks and economic hardships that arise out of unforeseeable events that prevent compliance with those regional landing requirements. Such an exemption should also provide a mechanism for reasonable compensation to all parties directly impacted by the granting of the exemption to ensure that the protections intended by the regional designations continue to be realized despite the exemption. The purpose of this action is to develop a regulation to allow waiver of the regional landings requirement for Class A shares in the event that eligible processing facilities are unable to receive crab for an extended period of time.*

Alternatives

The Council has adopted the following alternatives for analysis:

Alternative 1 – Status quo

No exemption from regional landing requirements is permitted.

Alternative 2 – Regional Landing Exemption

Under this alternative, an exemption would be granted on the agreement of the IFQ holder, the holder of matched IPQ, and a region/community representative. The Council is considering three options for defining the regional representative. Under the first, the regional representative is the same entity that holds the right of first refusal on the matched IPQ. Under the second, the regional representative is selected by the community intended to benefit from the right of first refusal. Under the third option, the regional representative is chosen by agreement of all communities benefiting from the rights of first refusal in the region. Under one option, the parties would be required to enter a 'non-binding framework' by a date certain and an exemption agreement prior to the exemption being granted. Under the second option, the parties need only enter an exemption agreement prior to the exemption being granted.

Alternatives considered but not advanced for analysis

The Council considered four types of alternatives that it elected not to advance for analysis. Generally, these alternatives were perceived by the Council as limiting the effectiveness of the alternatives in achieving their intended purpose. First, alternatives that specifically define exemption criteria in regulation were eliminated as those alternatives are believed to be overly restrictive and cannot be adapted as circumstances may require. Second, alternatives directly administered by NOAA Fisheries were not advanced, as these alternatives were viewed as overly expensive to administer and potentially preventing the exemption from fulfilling its purpose. Necessary fact finding would not only delay decision making, but could also be costly, as verification of conditions may be difficult or impracticable. Third, the Council also elected not to advance for analysis alternatives that specifically define compensation, as those alternatives were deemed too prescriptive to effectively balance the competing interests of parties, which are likely to change with the circumstances surrounding the granting of an exemption. Fourth, the Council chose not to advance alternatives that would redesignate IFQ and IPQ to compensate for landings redirected under the exemption, as those redesignations would be administratively complex and may be impossible, if TACs change substantially year-to-year.

Existing conditions

Nine Bering Sea and Aleutian Island crab fisheries are managed under the rationalization program. Harvesting quota shares (QS) were created in each program fishery. QS are a revocable privilege that allow the holder to harvest a specific percentage of the annual TAC in a program fishery. The annual allocations, which are expressed in pounds, are referred to as individual fishing quota (IFQ). The size of each annual IFQ allocation is based on the amount of QS held in relation to the QS pool in a program fishery—a person holding one percent of the QS pool receives IFQ to harvest one percent of the annual TAC in the fishery.

QS are designated as either catcher vessel QS or catcher processor QS, depending on whether the vessel that created the privilege to the shares processed the qualifying harvests on board. Approximately 97 percent of the QS (referred to as "owner QS") in each program fishery were initially allocated to license holders based on their catch histories in the fishery. The remaining 3 percent of the QS (referred to as "C shares" or "crew QS") were initially allocated to captains based on their catch histories in the fishery.

Catcher vessel owner IFQ are issued in two classes, Class A IFQ and Class B IFQ. Class A IFQ are issued for 90 percent of the catcher vessel owner IFQ in a program fishery. Crab harvested using these IFQ must be delivered to a processor holding unused individual processing quota (IPQ).

Short term transfers under leases and cooperative fishing arrangements are the primary means by which QS holders in the crab fisheries have achieved fleet consolidation under the rationalization program. These leases and transfers within cooperatives have also facilitated more complete harvest of allocations and coordination of deliveries in the event of unanticipated circumstances. Liberal rules exempt vessels fishing cooperative allocations from vessel IFQ use caps. Because of these attributes, most QS holders have elected to join cooperatives. Since the third year of the program, nearly all IFQ were held by cooperatives. In the fifth year of the program, the largest cooperative had grown to hold in excess of 70 percent of the IFQ in each fishery. The extent to which cooperatives manage and coordinate harvest by their fleets varies across cooperatives. Some cooperatives have relatively central management of harvest activities, while others leave members to determine the harvest of their own allocations. The largest cooperative, formed through several cooperatives merging, allows segments of the cooperative to manage harvests. These segments also vary in degree to which they coordinate harvests. Over the first five years of the program, coordination of harvests has progressively increased. This relinquishment of individual management of the harvest of shares not only contributes to consolidation of IFQ harvests, but also has allowed for better coordination in the event of unanticipated circumstances that might prevent compliance with regional landing requirements.

In addition to harvest shares, the program also created processing quota shares (PQS), which are allocated to processors and are analogous to the QS allocated to harvesters. PQS are a revocable privilege to receive deliveries of a fixed percentage of the annual TAC from a program fishery. These annual allocations are referred to as individual processing quota (IPQ). IPQ is issued for 90 percent of the owner IFQ pool, corresponding to the 90 percent allocation of owner IFQ as Class A IFQ. As with owner QS and Class A IFQ, PQS and IPQ are designated for processing in a region. While a processing share cap prevents any person from holding or using in excess of 30 percent of the outstanding processing shares in any program fishery, an exception that would exempt custom processing in certain fisheries and regions from the plant owners share cap was adopted recently. That exemption is intended to allow consolidation beyond the caps in fisheries and regions that pose particular economic challenges to processors. The rationalization program provides communities with substantial processing history with the opportunity to designate an entity that is entitled to hold rights of first refusal on certain transfers of IPQ and PQS for use outside of the community in which processing occurred that led to the allocation of the PQS (the community of origin). Based on historical landings, the distribution of rights of first refusal varies across fisheries and regions (see Table 9). In addition, some rights have lapsed, most significantly those held by St. George; however, a portion of the shares initially subject to those rights are now held by the former right holder, while others were transferred with the consent of that right holder.

Over time several communities have benefited from landings and processing activity in the crab fisheries. The rationalization program attempts to protect communities from some of the potential redistribution of landings, in part, by the regionalization of owner QS and Class A IFQ, whereby harvests are required to be delivered within an identified region. Regional designations are based on historic landing and processing, in most instances. The protection of regionalization applies at a regional level. As a result, groups of communities (rather than individual communities) are protected. In fisheries with North/South regionalization, St. Paul and St. George, collectively, are perceived to receive significant protection from North regionalized shares. In the Western Aleutian Islands golden king crab fishery, Adak and Atka, collectively, are perceived to receive substantial protection from regionalization.

Table 1 Distribution of rights of first refusal by community (2009-2010).

Fishery	Region	Right of first refusal boundary	Percentage of PQS pool
Bristol Bay red king crab	North	None	0.0
		St. Paul	2.5
	South	Akutan	19.7
		False Pass	3.7
		King Cove	7.4
		Kodiak	0.2
		None	12.2
		Port Moller	3.5
		Unalaska	50.7
Bering Sea *C. opilio*	North	None	16.0
		St. Paul	30.9
	South	Akutan	9.7
		King Cove	6.3
		Kodiak	0.0
		None	2.0
		Unalaska	35.0
Eastern Aleutian Island golden king crab	South	Akutan	1.0
		None	7.8
		Unalaska	91.2
Pribilof red and blue king crab	North	None	0.3
		St. Paul	67.3
	South	Akutan	1.2
		King Cove	3.8
		Kodiak	2.9
		Unalaska	24.6
St. Matthew Island blue king crab	North	None	64.6
		St. Paul	13.8
	South	Akutan	2.7
		King Cove	1.3
		None	0.0
		Unalaska	17.6

Source: RAM PQS data, 2009-2010

To date, two conditions may have created impediments to deliveries in a region, ice conditions and a fire aboard a floating processor.[1] Ice conditions have been an obstacle to deliveries in every year since implementation of the program. Ice abutted St. Paul in each of the first five years and abutted St. George in four of those years (see Table 16). Depending on the severity of conditions, this ice may prevent deliveries of catch into St. Paul and St. George. Prior to rationalization, harvesters with catch on board could elect to make deliveries to processors in the South, which are unaffected by the ice. Under the rationalization program, deliveries required to be made to North region locations may be prevented by the ice. Whether a delivery is prevented may depending on the circumstances, including spatial distribution and type of ice, the specific vessel, the location of the vessel relative to the islands, the amount and condition of crab on board, whether IFQ not subject to the North region landing requirement are available, and any factors affecting the willingness of the captain to wait for conditions to change. Historical data suggest that, in the first five years of the program, some deliveries may have been delayed

[1] Although the absence of processing in St. George caused deliveries to be redirected to St. Paul, that redistribution was permitted without exemption to the regional landing requirements. In addition, the circumstances that prevented deliveries into Adak prompting emergency rulemaking and provision for exemption from regional landing requirements in that fishery are beyond the scope of this action.

or redirected using shares that allow delivery in the South by ice conditions. North deliveries were made in several of the weeks that ice abutted the islands. The most notable disruption to deliveries occurred in the third year of the program, when deliveries almost ceased in the 25th week. In the two following years (particularly in the 2009-2010 season), the fleet coordinated harvest of the North region IFQ, fishing that allocation early in the season before ice conditions reached their extreme (see Figure 1 and Figure 2). In the 2009-2010 season, this coordination allowed all deliveries of North region IFQ to be completed by the end of February.

Table 2 St. Paul and St. George ice conditions (1997-2008) and crab landings in the North region (2005-06 through 2009-10).

Season	Month	December		January				February				March				April				May			
	Week	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1997*	Ice conditions																						
1997-1998																							
1998-1999																							
1999-2000																							
2000-2001																							
2001-2002																							
2002-2003																							
2003-2004																							
2004-2005																							
2005-2006	North landings				2	7	19	15	8	6	8	7	8	9	9	10	6						
	Ice conditions																						
2006-2007	North landings								2	4	5	4	5	7	12	18	13	16	2				
	Ice conditions																						
2007-2008	North landings				1	11	14	18	18	13	8	9	11	8	3			5	8	13	3		
	Ice conditions																						
2008-2009	North landings						14	23	12	14	17	17	19	13				1	2	1	1	3	
	Ice conditions																						
2009-2010	North landings				13	15	17	18	15	17	13												
	Ice conditions																						

Note: Includes only all North region Class A IFQ landings.
Denotes ice abutting St. Paul Island during the week.
Denotes ice abutting St. Paul Island and St. George Island during the week.
* Includes only 1997 conditions.
Sources: RAM landings data (2005-6 through 2009-10) and National Ice Center Ice Charts (1997-2010).

Analysis of alternatives

For clarity, the analysis first examines the operation of the different alternatives and options under consideration. The analysis then goes on to examine the effects of the alternatives on different stakeholders (including harvesters, processors, and affected communities) and management and enforcement.

Operation of the alternatives

Under the **status quo**, holders of Class A IFQ and IPQ must comply with regional landing and processing requirements, respectively. If an event occurs that prevents compliance with these requirements, the IFQ and IPQ holders cannot obtain an exemption from the regional requirements, but must postpone use of their shares until the condition preventing delivery is removed or an alternative delivery arrangement compliant with the regional requirement is made. Alternative arrangements could be either an alternative location within the region or use of alternative IFQ that allows delivery outside of the region.

In general, an unanticipated event could prevent one or more scheduled deliveries after crab are harvested requiring harvesters to make some other arrangements for the deliveries. In some cases, this may be addressed through coordination of the deliveries with other processors in the region or the use of substitute IFQ allowing delivery in another region. In the worst cases, it is possible that no processor might be available to take the deliveries in the region and no substitute IFQ allowing deliveries elsewhere

are available. In these instances, deadloss could be exacerbated, while the harvester waits for the circumstance to pass (or to be addressed).[2] Although these circumstances could occur, it may be possible to avoid this outcome. The fleet could organize its deliveries so that IFQ are reserved to address a contingency preventing delivery required by a regional designation. With most IFQ held by cooperatives, it is possible that a cooperative may be able to substitute IFQ that allow deliveries outside of the region, when a regional delivery is prevented. In addition, with fewer than 20 cooperatives participating in any fishery, it is possible that a harvester without IFQ to support deliveries in another region could acquire those IFQ from another cooperative.

The **exemption alternative** to establish an exemption would allow an IFQ holder who has reached one or more agreements with the matched IPQ holder and a regional or community representative to deliver a landing outside of the designated region on meeting certain conditions.

Under the **first option (a)**, the regional representative in the contract would be the entity representing (or formerly representing) the community of origin in the right of first refusal. Since this entity already represents the community of origin through the right of first refusal on IPQ, that entity could be considered as the contracting entity for purposes of defining the exemption from regionalization (including compensation provisions). Use of the right holder as the regional entity would simplify administration by using parties that are already identified by and included in the rationalization program administration. Some participants in the fisheries, however, have expressed concern that the right of first refusal holders (who are generally formed to hold shares in the fisheries) may not be appropriately positioned to represent community or regional interests in landings. To accommodate this circumstance, the **second option (b)** would allow the community benefiting from the right of first refusal on IPQ to select an entity to represent regional interests in any contract related to those IPQ. This option would allow the community to select the right holder, in the event that the community believed that the right holder would adequately represent the community's interests in the contract. Although the first two options may be perceived as having a benefit of allowing communities to independently represent their own interests, **both of these first two options fail to fully identify parties for contracts for all shares.** In both options, the right of first refusal is used to identify the party to the contract; however, some regionally designated PQS and IPQ are not (and have never been) subject to rights of first refusal. **If either of these first two options is selected, an alternate method of identifying a community (or regional) party to the contract could be included for IPQ that are not subject to a right of first refusal. Alternatively, the Council could elect to apply the exemption only to shares that have (or formerly had) a right of first refusal.** The motion, however, includes a provision that would allow the community representatives selected under (a) or (b) to devise a means of selecting a regional representative for any shares not subject to the right of first refusal. **The means of selecting such a representative are not specified in the motion.** The **third option (c)** could also be used to establish representation for shares never subject to a right of first refusal, by allowing each of the communities benefiting from a right of first refusal to select a regional entity to represent all regional interests in the exemption. Under any option creating multiple representatives in a region, it is possible that a subset of the represented communities in a region may provide the exemption agreements, while others elect not to agree to the exemption. In general, this separation of regional interests might be appropriate, as it allows each community the opportunity to negotiate an arrangement appropriate to its interest in the fisheries. The agreements may also provide a greater nexus between these communities and fishery participants than the existing regional structure.

[2] It is also possible that a harvester could return harvested crab to the water (with an indeterminate amount of associated handling mortality). Such discarding is a violation, as any crab place in a tank is only permitted to be offloaded to a registered receiver.

Under the exemption options, the Council motion suggests that IFQ holders wishing to obtain an exemption should establish a **reserve pool**. A well-administered reserve pool may address many of the contingencies that might otherwise prevent compliance with a delivery requirement. Under a reserve pool arrangement, it is anticipated that harvesters will coordinate harvests to address contingencies that might otherwise require a regional landing requirement exemption. In particular, harvesters are likely to coordinate effort early after the New Year in the Bering Sea *C. opilio* fishery to meet all North region landing requirements prior to ice dropping into the vicinity of the Pribilof Islands.

To qualify for the exemption, an IFQ holder, the matched IPQ holder, and a regional/community representative must attest to having entered **one or two agreements**. Under one option, a single agreement attesting to a contract for the exemption is required. Under the other, a non-binding framework agreement is required by a date certain, followed by a specific exemption agreement. The framework agreement could be useful in preliminarily defining the terms of potential exemptions. Under either option, administration of the exemption would be through the parties filing an affidavit stating that an exemption has been agreed to and identifying the amount of IFQ/IPQ that could be landed under out of the designated region. The use of contracts and affidavits for administration will allow the exemption to be implemented on a case-by-case basis to accommodate individual circumstances that may vary across participants. For example, ice conditions, which to date are believed to be the most likely event that would justify an exemption, vary greatly with location. Also, the ability to navigate through ice safely varies across vessels. The use of agreements and affidavits is intended to allow for consideration of these specific circumstances and aid in overcoming several potential complications in administration.

Although not specifically required by regulation, it is anticipated that the parties will include provisions for mitigation (including an IFQ reserve pool) and consider compensation arrangements for losses that might arise from an exemption. A reserve pool arrangement would be intended to ensure that vessel operators coordinate their harvest activities in a manner that reduces the potential need for the exemption.[3] These different contract provisions would be specifically decided by agreement of the parties. To ensure the flow of benefits to those intended to benefit from the regional share designations and to limit potential abuse of the exemption, compensation may be specified in the contract in the event the exemption is used. The degree to which it is appropriate for an IFQ holder or IPQ holder to pay compensation for losses arising from exemptions is debatable, since those parties are unlikely to have caused the circumstance that prevented deliveries and effects may differ across IFQ holders and IPQ holders. Some IFQ holders may bear additional costs from rescheduling deliveries and traveling to more distant ports, while others may have no additional costs from the exemption. Likewise, an IPQ holder who has activity and production redistributed to another location will be affected differently from one who loses the benefit of the activity and production altogether. These uncertainties and differences suggest that a flexible mechanism for determining any compensation for exemptions may be appropriate. Although it may appear the regional representative is in a weak position with respect to any negotiations concerning compensation, requiring the contract and making the regional representative a required party to the contract effectively provides that entity with the power to prevent any exemption. IFQ and IPQ holders would therefore forced to negotiate terms for compensation to the community entity. The community entity might be willing to concede reasonable terms to avoid being cast or perceived as

[3] The Council could consider recommending that a certain percentage of IFQ be subject to the reserve pool arrangement in a reasonable exemption agreement. This recommendation would define for the parties reasonable expectations concerning the use of reserve pools to ensure that the exemption does not evolve into a matter of convenience for IFQ holders.

extracting excessive compensation from IFQ and IPQ holders unable to comply with regional landing requirements without exposing their vessels and crews to unreasonable risks or bear excessive costs.

Compensation for costs and losses arising from the exemption could take on a few different forms. The simplest regulatory means of addressing the redistribution of benefits would be a system of cash payments. Yet, the amount of those payments may differ across stakeholders and circumstances. Providing the parties with the ability to negotiate compensation also allows for more creative arrangements to compensate for the effects of the exemption. For example, when deliveries are prevented by unforeseeable circumstances a community may suffer losses in economic activity, in addition to losses of tax revenues. Compensating the community for those losses by delivery arrangements for unrestricted shares at some future time may be a more agreeable resolution to all parties than a payment to the regional entity (or its designee). These delivery arrangements may impose less cost on IFQ and IPQ holders who may already bear unexpected costs arising from the disruption of their operating plans and more adequately compensate the community than simple payments to offset lost tax revenues. An added advantage to using a system of contracts to administer compensation is that NOAA Fisheries need not be involved in the administration of compensation. Instead, the parties can administer any compensation, with enforcement through civil actions between the parties to the compensation contract. Although settlement of claims through civil actions may increase costs to the parties if one party contests a claim, in most instances the private administration of claims will reduce costs and expedite claim processing by removing the administrative requirements that apply to agency processing of claims.

Effects on QS and IFQ holders

Under the **status quo**, no exemption to regional landing requirements on catcher vessel owner Class A IFQ is permitted. Consequently, an IFQ holder must organize the harvest of crab and use of IFQ to comply with the regional landing requirements associated with Class A IFQ. If a landing using regionally designated Class A IFQ is prevented by an unforeseeable circumstance, the IFQ holder must either delay the landing or arrange for delivery to an alternative location. As a first measure, an IFQ holder may choose to delay a delivery, possibly continuing fishing or waiting in a safe location until the circumstance passes. The ability to effectively delay a landing may be limited, if the circumstance is unlikely to pass quickly. For a lasting condition, an IFQ holder will need to find an alternative delivery location or may suffer excessive deadloss, which would count against IFQ at the time of landing.[4] Alternative delivery arrangements can be made either by coordinating the delivery with another facility within the region or by accessing IFQ that would support the landing outside of the region (i.e., either Class B IFQ or C share IFQ that can be delivered to any location or Class A IFQ designated for delivery outside the region).

In any case of a landing prevented by an unforeseen circumstance, the IFQ holder will be forced to assess the costs of these different choices. In general, an IFQ holder is likely to choose the alternative that imposes the least cost. An unanticipated circumstance that prevents a delivery will increase costs to harvesters. The distribution of these costs between vessel owners and QS holders will vary across participants. Over the first few years of the program, lease arrangements have evolved so that some agreements deduct certain costs from lease payments. These arrangements that include cost deductions are believed to be more common in cooperatives that use a single IFQ holder that oversees harvest of all IFQ. In these cases, in which revenues of the cooperative are shared across QS holders, the vessel owner's incentives are better aligned with the QS holder. The terms of these arrangements are generally confidential and vary across participants, but agreements are believed to pass on most out-of-pocket costs associated with unanticipated circumstances to the QS holders.

[4] Any crab placed in the tank of a vessel is required to be landed and counted against IFQ.

In addition, in the 2009-2010 season, one large cooperative controlled in excess of 75 percent of the IFQ in each fishery. In the Bering Sea *C. opilio* fishery, the fishery that most commonly suffers from ice conditions, the cooperative coordinated harvest activity to ensure that North region landings occurred prior to deliveries being prevented by ice developing the in the area of St. Paul Island. This type of coordination would likely continue to be used to address barriers to delivery in the future.

Under the **exemption alternative**, if an IFQ holder, the holder of matched IPQ, and the community/region representative agree to an exemption, IFQ may be delivered outside of the designated region. By providing the IFQ holder with an additional choice when confronted with an obstacle to a delivery, the exemption could in some circumstances reduce added harvester costs and risks that accompany an unforeseeable circumstance preventing a delivery within a region. The potential for an IFQ holder to direct the use of the exemption will depend on several factors, including the cost and risks associated with alternative means of addressing the obstacle to deliveries and the cost of any compensation required under the exemption agreement.

Two factors are likely to be considered when determining whether to use the exemption. First, safety risks arising from the obstacle to deliveries and operational costs of travelling to and making delivery outside the region under the exemption would be considered. These various operational considerations could make the exemption more or less appealing depending on the circumstances of the vessel. Second, compensation requirements will also affect the decision of the IFQ holder to secure an exemption. Higher compensation amounts could create a disincentive for IFQ holders to use the exemption. Although available, the exemption is only likely to be used only when it is more favorable than the other options, including waiting for the interfering circumstance to pass and possibly discarding catch.

QS holders will be affected by the exemption, since they likely bear some (or, in some cases, all) of the costs arising when compliance with regional delivery requirements are prevented by unforeseeable circumstances. To the extent that IFQ holders are able to reduce costs associated with these circumstances through use of the exemption, QS holders are likely to benefit from the exemption. Since the exemption is available only in very limited circumstances and comes at a cost of compensation to regional interests (and possibly the IPQ holder), the exemption is unlikely to result in substantial financial savings for QS holders, in most instances. Typically, the use of the exemption will have minor changes in operational efficiency. QS holders fishing the IFQ yielded by their QS will realize all of this savings, while a portion of this savings will be passed on QS holders that have lease arrangements for the fishing of IFQ yielded by their QS.

Effects on vessel operations and safety

Under the **status quo**, vessel operators must comply with regional landing requirements when using regionally designated catcher vessel owner Class A IFQ. Vessel operators prevented from making a landing using regionally designated IFQ have several possible choices. In some instances, the IFQ holder may have alternate IFQ allowing the landing to be made in another location. Alternatively, IFQ may be acquired to allow the landing to be made in outside of the designated region. In either of these cases, the vessel operators will need to coordinate their activity with the IFQ holder (if the IFQ holder is not the vessel operator) and both the processor (and IPQ holder) who was initially scheduled to receive the landing and the processor (and IPQ holder, if needed) who will ultimately receive the landing. If the condition preventing the landing is likely to pass, the vessel operator could choose to wait to make the delivery.

The need to full comply with all regional landing requirements increases the incentive for vessel operators (in conjunction with IFQ holders) to force deliveries when circumstances may prevent the vessel from

safely making the delivery. In all cases, the captain of a vessel is responsible for the safety of the vessel and may choose not to attempt to make a delivery to ensure the safety of the vessel. The captain, however, will have to balance the safety risk of attempting to make a delivery against the financial cost of redirecting or delaying the delivery. The potential to accept the risk is likely greatest at the end of season when little or no unused IFQ would support a delivery outside of the designated region. In that case, a captain may be unable to substitute IFQ for the regionally designated IFQ. In addition, captains and crews are likely to have less patience for waiting out ice conditions and may be more inclined to accept greater risks to complete their seasons. In these circumstances, the threat to safety will likely be the greatest.

The **exemption alternative** provides an additional option to vessel operators that encounter unforeseeable impediments to complying with regional delivery requirements. Since these unforeseeable events arise infrequently and agreements will likely allow exemptions in limited circumstances, it is unlikely to have widespread implications on vessel operations. The alternative, however, could provide some vessel operators with an additional choice in some circumstances that could benefit operators and reduce some safety risks. Specifically, the ability of vessel operators to gain an exemption could relieve some of the financial pressure to accept the risks incumbent in making a delivery under questionable circumstances (such as when ice is present, but is arguably navigable) by providing a limited exemption from the regional landing requirement. Clearly, a vessel operator could still perceive a benefit to complying with the regional landing requirement, thereby avoiding any compensation that might be required in the event of an exemption. Yet, the outlet created by the exemption could be particularly important nearer the end of season when little or no unused IFQ would support a delivery outside of the designated region. In that case, a captain may be unable to use the regionally designated IFQ except by receiving the exemption to the regional designation or accepting risks associated with the delivery. Late in the season, captains and crews are likely to have less patience for waiting out ice conditions and may be more inclined to accept greater risks to complete their seasons. The exemption may provide a reasonable alternative that could lead vessel operators to avoid risks associated with attempting lands despite obstacles.

Effects on PQS and IPQ holders and processors

Under the **status quo**, no exemption to regional landing requirements is permitted. So, both regional landing requirements and IPQ commitments must be complied with. Processors will likely be idled in the event compliance with regional delivery requirements is prevented by an unforeseeable circumstance. If additional capacity is available within a region, IPQ holders may be able to make use of their IPQ by redirecting landings to another plant using custom processing arrangements. In some circumstances, compliance with regional landing requirements may require that an IPQ holder arrange for additional processing capacity in a region to receive deliveries under Class A IFQ/IPQ contractual agreements. Processors may incur additional costs through these arrangements. Clearly, a circumstance preventing compliance with regional landing requirements will increase costs to processors with those costs being dependent on the specific circumstances, the responses of both the harvesting and processing sectors, and any change in pricing that might be negotiated between the parties or driven by the arbitration system.

The **exemption alternative** allows a Class A IFQ holder to obtain an exemption from regional landing requirements by agreement of the matched IPQ holder and a region/community representative. IPQ holders are likely to require some level of notice prior to exercising the exemption (except in case of emergency). This type of notice requirement should ensure that processors are not expending substantial efforts to overcome the circumstance, only to have an IFQ holder redirect the landing under the exemption. Likewise, a compensation requirement in the contract could be carefully drafted to protect an IPQ holder should an IFQ holder exercise the exemption in a manner that unreasonably imposes excessive cost on the IPQ holder. These two provisions together should limit the extent to which any

circumstance imposes an undue burden on an IPQ holder in the event an IFQ holder elects to use the exemption.

Effects on regions and communities

Under the **status quo**, holders of Class A IFQ and IPQ holders must abide by regional landing requirements without exception. Consequently, the only circumstance under which a region will not benefit from a landing from a regionally designated IFQ is if the IFQ is not used. Without an exemption, IFQ could be left unharvested, should an unanticipated circumstance prevent the harvest altogether or make the harvest cost prohibitive. In considering the effects of regional landing requirements, it should be noted that those requirements provide no community specific benefit. As a result, regional landing requirements will only ensure that additional offloads and processing take place in the region. That activity may not benefit a community or even the regional economy, if the processing occurs outside the boundaries of a community.

The potential for landings to be redirected outside of communities differs across fisheries and regions. In the North region of the Bering Sea *C. opilio* fishery, where unanticipated circumstances might be most likely to arise, the potential to redirect landings away from communities is relatively limited. Areas in the region that are outside of communities are relatively exposed, and likely cannot safely support offloads and processing activities during the winter months when most processing occurs. In the St. Matthew Island blue king crab fishery, locations near St. Matthew Island (and not within any community) provide some protection from weather for processors. Much of the processing historically relied on these locations. In the Pribilof Island red and blue king crab fishery, most processing occurred historically in the Pribilof Island communities. Since the fisheries are relatively small, it is likely that the North processing in the St. Matthew Island blue king crab fishery would be consolidated with processing in the Pribilof Island red and blue king crab fishery in the Pribilofs. The effect of any unanticipated circumstances on the redistribution of processing within the North region in these fisheries cannot be predicted, but would depend on available resources. An unanticipated circumstance might redistribute landings to a different location, but the Pribilofs are the most likely location for processing. In the Western Aleutian Islands golden king crab fishery, the only plant to receive deliveries under the program to date is in Adak. Some participants have suggested that processing could take place in Atka in the future. If deliveries are prevented to Adak or Atka by an unanticipated circumstance, it is likely that landings would move to a different location, if a plant is made available. This movement of landings could be simply between these communities, but also could result in a loss of benefits to communities in the region, if those landings move to a location outside of any community. If a delivery into a South region processor is prevented by an unforeseeable circumstance, it is likely that the processing would move to a different facility. In Dutch Harbor/Unalaska and Kodiak, it is possible that the processing would simply move to another local facility, unless the entire community is inaccessible. Any other processing location in the South is likely to have processing moved to a different community (or outside of any community) in the event that a delivery is prevented by an unforeseeable circumstance.

Under the **exemption alternative**, if an unanticipated circumstance prevents deliveries within a designated region that delivery may be redirected outside of the region. Although the terms of the exemption are defined by agreement and may not be fully predictable, it is unlikely to be used liberally or frequently. In cases when the exemption is applied, the community that would have hosted the landing and processing will lose tax revenues and could lose economic activity associate with the landing. In a few circumstances, the community's economic activity may be unaffected. For example, if the landing would have taken place at a floating processor within community boundaries, but with no interaction within the community, it is possible that only tax revenues would be affected. These losses could be compensated under depending on the terms of the exemption agreement.

In cases of a few redirected deliveries in the course of a relatively long processing period, it is possible that the community could suffer little loss of economic activity. If the compensation agreement makes up for lost tax revenues, it is possible that the community may be unaffected by the exemption. On the other hand, if the exemption is granted for a large share of a community's processing activity, it could have a very different effect on the community's economy. It should be noted that in some instances, a community that would have received a landing but for an unforeseeable circumstance could be better off under the exemption than with a strict requirement to comply with regional landing requirements. For example, under the status quo, IFQ may be either left unharvested or redirected to another community in a region by an IFQ holder that is unable to make a delivery to a community. If the IFQ holder is able to use an exemption to redirect the landing to another region and is required to pay compensation to the community under the agreement, the community would be better off under the exemption. Arguably, movement of the processing within the region would leave the region in unaffected, but redistribution of landings among communities will affect those local economies.

Notwithstanding the case of movement of small numbers of landings, it is also important to consider circumstances that affect a large portion of a community's processing being redirected under an exemption. In these instances, it is likely that processing in the community will have been prevented for an extended period. Obligations to exert reasonable efforts to avoid the exemption and compensation provisions in the exemption agreement should prevent IFQ and IPQ holders from redirecting landings for simple convenience. The provisions should also prevent excessive abuse of the exemption, in the event a single location within a region is unavailable for deliveries, while processors may be accessible in other locations (or a processor can be brought to a location to support deliveries). Assuming deliveries are prevented in a region, without the exemption, these landings would not occur. If they occur under the exemption, the community would receive any compensation prescribed by the agreement (or alternatively the regional interest protected by the compensation provision would receive that compensation).

Effects on management, monitoring, and enforcement

Under the **status quo**, managers monitor use of regionally designated IFQ and IPQ through the elandings system. Since compliance with designations is required without exception, oversight is simplified. Any violation could be tracked and verified through the elandings monitoring system, which creates a record of landings including IFQ and IPQ usage by facility.

Under the **exemption alternative**, NOAA Fisheries managers will be required to oversee exemptions. NOAA Fisheries will be required to assess the proper party to contract on behalf of a region with respect to the exemption contract. Since exemptions will only be granted for IFQ and IPQ that are subject to a contract (as verified by an affidavit), NOAA Fisheries must also collect those affidavits. Since most IFQ holders will deliver to multiple IPQ holders, it is likely that each IFQ and IPQ holder that wishes to have the exemption available will need to enter several contracts. The number of contracts could differ depending on the option selected for identifying the regional representative. If regions have multiple representatives (such as each right of first refusal holder) more contracts will be required. Once contracts are filed, the exemption would be available for the number of pounds of IFQ identified in the affidavit. Beyond documentation of the affidavit attesting to agreement to the exemption, other aspects of exemption oversight and enforcement would be shifted to participants (including the region/community representative). By shifting contract performance oversight to the parties, NOAA Fisheries burden for overseeing performance (particularly performance of compensation requirements) is limited. Although the shifting of management burdens to participants should reduce agency administration costs, the costs to participants may increase. The extent of costs to parties will depend greatly on the choices of the parties in the exemption agreements and the complexities and costs of enforcing those arrangements.

Errata to:
Five Year Review of the Crab Rationalization Program
Bering Sea and Aleutian Island Crab Fisheries
North Pacific Fishery Management Council
December 2010

Table 3-8. Allocations of Class A IFQ and Class B IFQ by processor affiliation

Fishery	QS holders with a processor affiliation			QS holders without processor affilation			
	Number of QS holders	Percent of Class A IFQ pool received	Percent of Class B IFQ pool received	Number of QS holders	Percent of Class A IFQ pool received	Percent of Class B IFQ pool received	Percent of allocation as B shares
Bristol Bay red king crab	23	18.2	5.8	257	81.8	94.2	11.3
Bering Sea *C. opilio*	21	15.9	7.8	242	84.1	92.2	10.9
Eastern Aleutian Islands golden king crab	4	21.3	20.3	15	78.7	79.7	10.1
Eastern Bering Sea *C. bairdi*	21	17.4	5.5	237	82.6	94.5	11.3
St. Matthew Island blue king crab	12	16.1	9.1	143	83.9	90.9	10.8
Western Aleutian islands golden king crab	4	9.8	9.8	12	90.2	90.2	10.0

Source: RAM IFQ database (2009-2010).

Note: Processor affiliates may receive Class B IFQ for IFQ allocations in excess of IPQ holdings. A QS holder is considered affiliated, if it is affiliated with a holder of PQS in any fishery.

Table 6-1. Processing in the Bristol Bay red king crab, Bering Sea *C. opilio*, Eastern Aleutian island golden king crab, and Western Aleutian Island golden king crab fisheries in the years lead up to the implementation of the rationalization program

Fishery	Season	Plants processing	Mean		Median		Average processing of top 3 plants	
			pounds processed	as a percent of fishery	pounds processed	as a percent of fishery	in pounds	as a percent of fishery
Bristol Bay red king crab	2001	17	433,230	5.9	381,096	5.2	1,113,502	15.1
	2002	17	498,344	5.9	463,363	5.5	1,169,863	13.8
	2003	20	677,865	5.0	372,667	2.7	1,862,769	13.7
	2004	17	781,547	5.9	513,753	3.9	1,942,253	14.6
Bering Sea *C. opilio*	2002	17	1,643,446	5.9	1,422,515	5.1	4,147,694	14.8
	2003	17	1,447,451	5.9	1,438,688	5.8	3,022,202	12.3
	2004	18	1,181,935	5.6	1,025,185	4.8	2,564,168	12.1
	2005	14	1,571,915	7.1	1,525,714	6.9	3,136,110	14.3
Eastern Aleutian Islands golden king crab	2001 - 2002	4	782,102	25.0	*	*	*	*
	2002 - 2003	4	691,359	25.0	*	*	*	*
	2003 - 2004	4	725,062	25.0	*	*	*	*
	2004 - 2005	4	711,568	25.0	*	*	*	*
Western Aleutian Islands golden king crab	2001 - 2002	6	308,220	16.7	253,814	13.7	592,502	32.0
	2002 - 2003	2	881,793	50.0	*	*	NA	NA
	2003 - 2004	4	498,842	25.0	*	*	*	*
	2004 - 2005	3	624,186	33.3	*	*	NA	NA

Source: ADFG Fish tickets.

* withheld for confidentiality.

Errata *-- Appendix A: Draft Social Impact Assessment, Table 1-10 (page 1-25), should be replaced with the following table.*

Table 1-10. CPO Shares by Community, Bristol Bay Red and Bering Sea Snow, Initial Allocation and 2010/11 Distribution

		Bristol Bay Red King Crab								Bering Sea Snow Crab							
		Number of Unique Holders				Number of Quota Units				Number of Unique Holders				Number of Quota Units			
		Initial		2010–2011		Initial		2010–2011		Initial		2010–2011		Initial		2010–2011	
State	Community	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Alaska	Anchorage	1	7.7%	2	18.2%	777,429	4.4%	2,022,487	11.4%	1	7.1%	2	14.3%	3,494,652	3.9%	16,171,435	18.2%
	St. Paul	0	0.0%	1	9.1%	0	0.0%	1,883,177	10.6%	0	0.0%	1	7.1%	0	0.0%	8,593,014	9.7%
Alaska Total		*1*	*7.7%*	*3*	*27.3%*	*777,429*	*4.4%*	*3,905,664*	*22.1%*	*1*	*7.1%*	*3*	*21.4%*	*3,494,652*	*3.9%*	*24,764,449*	*27.9%*
Washington Total		*12*	*92.3%*	*8*	*72.7%*	*16,921,219*	*95.6%*	*13,792,984*	*77.9%*	*13*	*92.9%*	*11*	*78.6%*	*85,185,819*	*96.1%*	*63,916,022*	*72.1%*
All States Total		**13**	**100.0%**	**11**	**100.0%**	**17,698,648**	**100.0%**	**17,698,648**	**100.0%**	**14**	**100.0%**	**14**	**100.0%**	**88,680,471**	**100.0%**	**88,680,471**	**100.0%**

Note: Not all percentages add up due to rounding introduced in computing pre- and post-rationalization averages.
Source: National Marine Fisheries Service Alaska Regional Office 2008, 2010.

Errata *-- Appendix A: Draft Social Impact Assessment, Section 1.5.4, last paragraph (begins on page 1-75 and continues on to page 1-76), should be replaced with the following paragraph.*

Economic information for most of the Alaska coastal communities engaged in the crab fishery is not available on a detailed enough scale to allow for close documentation of the presence or absence of local recession-related impacts. One exception to this generalization is Kodiak, and an example of how resilient the Alaskan economy was with regard to the recession may be seen in the detailed second quarter gross receipt information provided by the City of Kodiak for 2006 through 2010 that shows the overall trends of the larger, more diversified economy present on the island. (While there are drawbacks to using data from any specific quarter to illustrate overall trends in an economy with pronounced seasonal fluctuations, annual data are not available for 2010; this example is intended to briefly illustrate year-over-year differences for the quarter representing the most recently available data.) For many business types, slight decreases were seen in 2009 second quarter business compared to second quarter totals in 2008 and 2010, but 2009 second quarter totals were generally higher than second quarter totals in 2006 or 2007, suggesting an overall upward trend in the economy over the 5 years of information provided. Even for those sectors hit hard by the recession elsewhere in the country, specifically construction and manufacturing, overall upward trends may be noted. Kodiak 2009 second quarter totals for construction were $7 million more than 2008 second quarter totals. Kodiak 2009 second quarter totals for manufacturing were approximately $40,000 less than 2008 second quarter, but 2010 second quarter totals were approximately $40,000 more than 2008 second quarter levels, again suggesting overall upward growth. Retail trade, on the other hand, was clearly much lower in the second quarter of 2009 ($24 million) than in the second quarter of 2008 ($36 million), reinforcing the observation that retail activity was much slower, likely due at least to some degree to indirect impacts from the Lower 48, but most other business types exhibit total gross receipts in the second quarter of 2009 within the natural variation seen between the second quarters of 2006 and 2010. Some industries, specifically real estate, which suffered elsewhere in nation, show their highest Kodiak second quarter total in 2009 compared to the other second quarters in the years within the range of data provided.

Errata *-- Appendix A: Draft Social Impact Assessment, Attachment 1, Table A1-10 (pages A1-42 and A1-43), should be replaced with the following table.*

Table A1-10. CPO Shares – Initial Allocation and 2010–2011 Quota Shareholders

State	Community	Species	Region	Initial Allocation			2010–2011 Quota Shareholders		
				Unique Holders	Quota Units	Percent of Total Quota Units for Species/Region	Unique Holders	Quota Units	Percent of Total Quota Units for Species/Region
Alaska	Anchorage	Bristol Bay Red	U	1	777,429	4.4	2	2,022,487	11.4
		Bering Sea Snow	U	1	3,494,652	3.9	2	16,171,435	18.2
		Bering Sea Tanner	U	1	460,039	3.5	0	0	0.0
		Eastern Aleutian Golden	U	0	0	0.0	0	0	0.0
		Western Aleutian Golden	U	0	0	0.0	0	0	0.0
		Bering Tanner East	U	1	460,039	3.5	2	2,227,580	17.0
		Bering Tanner West	U	1	460,039	3.5	2	2,227,580	17.0
		Pribilof Is. Blue/Red	U	0	0	0.0	0	0	0.0
		St. Matthew Blue	U	0	0	0.0	0	0	0.0
		Western Aleutian Red	U	0	0	0.0	0	0	0.0
	St. Paul	Bristol Bay Red	U	0	0	0.0	1	1,883,177	10.6
		Bering Sea Snow	U	0	0	0.0	1	8,593,014	9.7
		Bering Sea Tanner	U	0	0	0.0	0	0	0.0
		Eastern Aleutian Golden	U	0	0	0.0	0	0	0.0
		Western Aleutian Golden	U	0	0	0.0	0	0	0.0
		Bering Tanner East	U	0	0	0.0	1	1,371,158	10.5
		Bering Tanner West	U	0	0	0.0	1	1,371,158	10.5
		Pribilof Is. Blue/Red	U	0	0	0.0	0	0	0.0
		St. Matthew Blue	U	0	0	0.0	0	0	0.0
		Western Aleutian Red	U	0	0	0.0	0	0	0.0
	Alaska Total	**Bristol Bay Red**	**U**	**1**	**777,429**	**4.4**	**3**	**3,905,664**	**22.1**
		Bering Sea Snow	**U**	**1**	**3,494,652**	**3.9**	**3**	**24,764,449**	**27.9**
		Bering Sea Tanner	**U**	**1**	**460,039**	**3.5**	**0**	**0**	**0.0**
		Eastern Aleutian Golden	**U**	**0**	**0**	**0.0**	**0**	**0**	**0.0**
		Western Aleutian Golden	**U**	**0**	**0**	**0.0**	**0**	**0**	**0.0**
		Bering Tanner East	**U**	**1**	**460,039**	**3.5**	**3**	**3,598,738**	**27.5**
		Bering Tanner West	**U**	**1**	**460,039**	**3.5**	**3**	**3,598,738**	**27.5**

State	Community	Species	Region	Initial Allocation			2010–2011 Quota Shareholders		
				Unique Holders	Quota Units	Percent of Total Quota Units for Species/Region	Unique Holders	Quota Units	Percent of Total Quota Units for Species/Region
		Pribilof Is. Blue/Red	U	0	0	0.0	0	0	0.0
		St. Matthew Blue	U	0	0	0.0	0	0	0.0
		Western Aleutian Red	U	0	0	0.0	0	0	0.0
Washington	Washington Total	Bristol Bay Red	U	12	16,921,219	95.6	8	13,792,984	77.9
		Bering Sea Snow	U	13	85,185,819	96.1	11	63,916,022	72.1
		Bering Sea Tanner	U	13	12,617,209	96.5	0	0	0.0
		Eastern Aleutian Golden	U	2	469,136	100.0	2	469,136	100.0
		Western Aleutian Golden	U	2	17,935,173	100.0	3	17,935,173	100.0
		Bering Tanner East	U	12	12,617,209	96.5	10	9,478,510	72.5
		Bering Tanner West	U	12	12,617,209	96.5	10	9,478,510	72.5
		Pribilof Is. Blue/Red	U	1	151,568	100.0	1	151,568	100.0
		St. Matthew Blue	U	5	579,116	100.0	5	579,116	100.0
		Western Aleutian Red	U	2	22,713,377	100.0	2	22,713,377	100.0
Oregon	Oregon Total	Bristol Bay Red	U	0	0	0.0	0	0	0.0
		Bering Sea Snow	U	0	0	0.0	0	0	0.0
		Bering Sea Tanner	U	0	0	0.0	0	0	0.0
		Eastern Aleutian Golden	U	0	0	0.0	0	0	0.0
		Western Aleutian Golden	U	0	0	0.0	0	0	0.0
		Bering Tanner East	U	0	0	0.0	0	0	0.0
		Bering Tanner West	U	0	0	0.0	0	0	0.0
		Pribilof Is. Blue/Red	U	0	0	0.0	0	0	0.0
		St. Matthew Blue	U	0	0	0.0	0	0	0.0
		Western Aleutian Red	U	0	0	0.0	0	0	0.0
Other U.S.	Other U.S. Total	Bristol Bay Red	U	0	0	0.0	0	0	0.0
		Bering Sea Snow	U	0	0	0.0	0	0	0.0
		Bering Sea Tanner	U	0	0	0.0	0	0	0.0
		Eastern Aleutian Golden	U	0	0	0.0	0	0	0.0
		Western Aleutian Golden	U	0	0	0.0	0	0	0.0
		Bering Tanner East	U	0	0	0.0	0	0	0.0
		Bering Tanner West	U	0	0	0.0	0	0	0.0
		Pribilof Is. Blue/Red	U	0	0	0.0	0	0	0.0
		St. Matthew Blue	U	0	0	0.0	0	0	0.0
		Western Aleutian Red	U	0	0	0.0	0	0	0.0

Source: National Marine Fisheries Service Alaska Regional Office 2008; 2010.

AGENDA C-2(c)
Supplemental
DECEMBER 2010

North Pacific Fishery Management Council
201st Plenary Session — December 6-14, 2010
Hilton Hotel — Anchorage, Alaska
Fax: (907) 271-2817 Tel: (907) 271-2809

Public Comment of Mary Beth de Poutiloff — Harrington, ME & Provincetown, MA

Agenda C-2(c.): Receive Report on BSAI Crab Rationalization 5-Year Review

Commerce Secretary Gary Locke, Chairman Eric Olson & NPFMC members:

Please submit the following letter to politicians as part of your record on Crab Rationalization review.

On the East Coast, we look to Alaska and the CR program as a key example of what goes wrong when public resources are privatized into Catch Shares for a few special interests. Absent full transparency and accountability for the negative economic harms on communities and real fishermen (especially on-deck crew), as well as knowing the economic truth of lease extractions, the 5-year report is wholly inadequate for council decision making. Please adapt your program for fairness and equity. That starts with gathering the proper, full information required to avoid more arbitrary and capricious management action.

Letter to our Government Officials

"The *most important political office is that of private citizen.*" — Justice Louis Brandeis

I would like to thank our politicians, who have worked tirelessly on behalf of our fishing communities. I hope they all join the ranks of Congressman Walter Jones (NC) and Senator Kay Hagan (NC) These two brave politicians do not support "Catch Shares". They are brave because they're standing up to the wealthy, eco-frauds that wish to manipulate fish markets with "Fish Shares".

Congressmen Frank and Tierney have recently filed an Amicus Brief in support of the plaintiffs from the fishing ports of New Bedford and Gloucester who are seeking judicial review of what the national standards of best science and sustainable yield truly mean, and what management measures are appropriate. We appreciate their efforts to quell this cancer called "Catch Shares". These representatives are aware of the social and economic damage done by this disease of greed: "Catch and Trade".

I also hope we get these two bills passed-the Flexibility in Rebuilding American Fisheries Act. Senator Schumer and Congressman Pallone introduced this bill —in the Senate and in the House. This Magnuson Stevens Act (MSA) amendment is supported by scores of fishermen. Some 5,000 travelled to Washington DC in 2010 with this one aim: Fix Magnuson Now.

Fishing dates back 40,000 years. This was documented by scientists analyzing human remains. Plato (428-348 BC) wrote about "Fire Fishing" — fishermen using light to attract sea-life. A 1st century Roman shipwreck was discovered containing clay jars of fish sauce that dated back 2,000 years. The fish and fisheries of the Sea of Galilee (during the time of Jesus) had a world-wide reputation. Let us not forget fishermen shuttled troops during war times. In America, most notable was their assisting General George Washington's troops.

I think our elected officials have undertaken a worthy cause. Fishing feeds our nation and provides our communities with much needed jobs. A University of Maine study reports every fishing job supports 6.6 jobs on land. Fishing boats are Homeland Security's first defense. Our industry also is an important component of Tourism.

The Magnuson-Stevens Act (MSA) was created in 1976 to combat overfishing from the international factory fleet. Then our government started offering low-interest loans to subsidize our fleet into larger vessels. This compelled many non-fishermen to enter the fishing industry. More entrants and bigger boats caused overfishing in the U.S.

The National Marine Fisheries Service's mission has shifted. The original one was to increase scientific understanding of marine fisheries, and to promote fishing of underfished fisheries. Later, increased fishing pressure and the depletion of fish stocks, as well as the desire to protect endangered and threatened marine species, caused this mission to shift toward regulation, management and protection.

Today NMFS' mission is stewardship of living marine resources through science-based conservation and management and the promotion of healthy ecosystems.

NOAA/NMFS' National Catch Share Policy stands to destroy our fishermen and coastal communities further. Their ambition seems to be about eliminating fishermen. When they realize it and shift their mission again, it will be too late for our coastal communities. They want to get rid of the little guy that does less harm to the resource and environment and give it to the huge vessels that overfish (again). This is insanity — a vicious cycle of mismanagement.

At the start, we have NOAA/NMFS promoting fishing. Their plan flourished; so then we needed to cease overfishing. They successfully curtailed our fishing. Now, the stocks are back and they wish to consolidate instead of rewarding our sacrifices. The greediest fishermen win and the conservationist fishermen lose in the Catch Share giveaway. Catch Shares system is Not Fair. Poorer fishermen are at a distinct disadvantage. The sustainable fishermen should have the edge, not the richer ones.

"Catch Shares" is an economic tool rather than a conservation one. Dr. Brian Rothschild, U. Mass-Dartmouth, agrees. Many opponents to Catch Shares say it is bad for the fish, fishermen and their communities. Julia Olson, NMFS-Science Center paints a hideous, economic and social future with her impact study. Dick Grachek, "Catch Shares, Consolidation and the Tipping Point" researched the effects of this scheme. Ecotrust, NAMA (Northwest Atlantic Marine Alliance) and Food and Water Watch also recommend caution with this system that gives away our public resources, to create tradable quotas. Real fishermen are being pushed into servitude to an investor class, and many jobs are being lost.

As Julia Olson, NMFS-Science Center, points out "Catch Share" leasing and permit stacking causes regulatory stickiness. The MSA is being misconstrued and broken. Fairness and equality doesn't exist. Science is dead. Referendums ignored. Conflict of interest is rampant. How are we protecting the infrastructure of our towns and jobs? How are we protected from foreign countries buying our "Catch Shares"? This is already a reality in Alaska. Crab processors, many not American-owned, have been rewarded with future crab forever. Crews from local towns were not so lucky.

Alaska's "Catch Share" fisheries are a case in point. Crab Ratz destroyed jobs, futures and communities. No more can a young man hope to work his way up the ladder. We now have mailbox

fishermen who own the quota (and lease it out for unjustifiable high rents) and the folks risking their lives are sharecroppers.

People that have no vision perish.

We have lost faith in NOAA's science, enforcement department, justice system, and regulatory process. These are merely symptoms of the disease. The only remedy is transparency, accountability and heeding the words of the majority of fishermen. NOAA also should honor their past promises. We need a diversified fleet, sound science and balance on the regional Councils. Our public servants need to realize, interests should be weighed equally.

Money should not be able to buy up the seats; we all deserve a seat at the table — not detrimental conflicts of interest and regulatory capture. Money should not be able to buy fishing rights, this should be an equal right — and the invested capital efforts of labor must be given full measure in equity. Money should not determine what laws are enforced and what ones are overlooked. You must lead from your heart and conscience to do what's right, otherwise America continues down the tubes.

Most importantly, NOAA/NMFS is out of control and we need an Inspector General's inquiry into them and also the corruption on Fisheries Councils. U.S. oceans are not depleted but are severely mismanaged. For this reason we don't want buyouts. We want NO "Catch Shares". We need a 3 yr. moratorium till we address the cause of the disease.

"Our government... teaches the whole people by its example. If the government becomes the lawbreaker, it breeds contempt for law; it invites every man to become a law unto himself; it invites anarchy". — Justice Louis Brandeis

Thank you,

Mary Beth de Poutiloff

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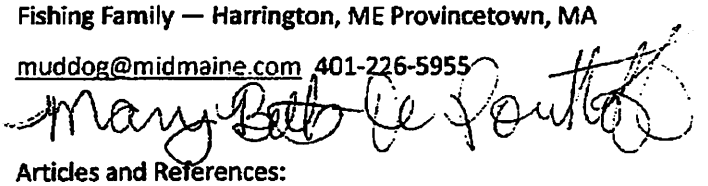

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November 30, 2010

Eric A. Olson, Chairman
Chris Oliver, Executive Director
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Re: Comment on Agenda item C-2c, Report on BSAI Crab Rationalization 5-year review

The Alaska Crab Coalition (ACC) has been involved since the mid 1990s in the development of the crab rationalization program, and subsequent to the implementation of the program in the fall of 2005, it has been involved in the refinement of the program through the addition of fourteen technical FMP amendments

With the addition of the technical amendments since the NPFMC passage of the initial aspects of the crab program, the ACC is pleased with the outcome thus far. We note that the 5-year review analysis clearly illustrates that the program has overall addressed the problems associated with overcapitalization of the BSAI crab fisheries in 2002, that led the industry and the Council to develop the crab rationalization program. The problems identified by the Council and addressed in the EIS (as referenced in the Review, Introduction, page 1) are:

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 life and injury.

The ACC concurs with the technical comments of the Alaska Bering Sea Crabbers on the various aspects of the program, and wishes to restate ABSC's comments on the importance of the program to problem number five, the high levels of occupational life and injury and the overall improvement to the nature of the deck jobs, as documented in Appendix B of the Five-Year Review of the Crab Rationalization Program (Jennifer Lincoln, NIOSH; and CDR Christopher Woodley, MMA, USCG); and in other sections of the 5-Year Review Analysis.

High Levels of Occupational Loss of Life and Injury:

From August 1990 to the time of implementation of the Program, a total of 82 lives were lost fishing crab in the Bering Sea and Aleutian Islands. The Bering Sea crab industry was well deserving of its nickname of the "Deadliest Catch." Anyone who was involved in the industry for any length of time during these years knew people who never came back. It was simply an unacceptable management system.

The loss of 82 lives in the 15 year period, from August 1990 through the fall of 2005, is an average loss of 5.5 men per year. With the onset of the program, there has been only 1 man lost in 5 years, a phenomenal, and from an industry perspective, an unanticipated part of the success of the BSAI crab program.

No doubt, improvements to safety were apparent even before the Program namely due to stability and safety compliance checks thanks to the Coast Guard. However, the Program resulted in an obvious, immediate, and dramatic improvement in safety.

Appendix B to the 5 Year Review (Appendix B) explains that "A major fisheries management problem with the Bering Sea crab fleet during this time frame (prior to the Program) was that despite efforts to limit overcapacity and fishery participants through a license limitation plan, the catching power within the fleet greatly exceeded the available amount of crab, resulting in an extremely competitive "race for fish" in what was already a high-risk operating environment. (1) This statement simply hits the nail on the head.

Appendix B provides many examples of why the Program results in the obvious, immediate, and dramatic improvements in safety. Appendix B explains:

Crew are more experienced as the seasons are now longer resulting in dedicated crab crew: "Maintaining a consistent crew better maintains vessel management, improves efficiency and safe operating procedures, crew become more familiar with the vessels operation, other crew, deck rotation." (4)

Crew are less fatigued: "In the Bristol Bay red king crab fishery, pot lifts per vessel day have decreased by an average of 32% and in the Bering Sea C. Opilio fishery, pot lifts per vessel day have decreased by 17%. Slowing down the pace allows for crew to get more (and more regular) rest than in the derby fishery. A less fatigued crew is less likely to have accidents." (5)

Consolidation of the fleet has resulted in safer vessels: "(Prior to the Program), the overall poor profitability of the highly capitalized fisheries with relatively low TACs may have economically forced some owners to postpone needed vessel maintenance. Fleet contraction resulted in the removal of many of these marginal vessels from the fleet" (6). Appendix B goes on to say, "The consolidation of the fleet resulted in an increase in the average vessel size. These larger vessels lend themselves to a larger work platform and

may be able to handle the weather conditions more easily and are more fully capable of operating in their chosen service" (6).

In addition, Appendix B points out that skippers now have the flexibility to both delay when they leave port due to weather and also to suspend fishing on the grounds due to weather. The report describes how the creation of a "super coop" under the Program has also increased safety by creating more flexibility for those vessels in the super coop and gives these vessels the ability to get off the grounds when the weather turns bad. Finally, the report explains that there is less incentive to overload vessels with pots as the race is over.

The report also notes that an action to allow for "emergency relief" of crab designated for the Northern district (St. Paul) could help to improve safety. Emergency relief is an agenda item also on the agenda for the December Council meeting and is supported by Alaska Bering Sea Crabbers and the ACC. Harvesters, processors, and community representatives have worked for several years on this effort that will ultimately reduce the incentives for skippers to take risks during marginal conditions delivering in the Northern district.

One final point on improvements to safety is that vessels are now more profitable than they were before the Program. As a result, they spend more money on maintenance and repairs resulting in safer vessels. This is confirmed through personal communications with both a vessel surveyor and a shipyard manager, industry experts very familiar with the crab fleet.

Finally, Alaska Bering Sea Crabbers and the Alaska Crab Coalition would like to endorse all of the recommendations found in Appendix B of the 5 Year Review to further improve safety in the BSAI crab fleet in the future.

Crew impacts:

Although crew were not directly brought up as part of the original problem statement, it is appropriate to have a discussion regarding the impacts of the Program on crew.

The most important point from the Review from a crew perspective is that the Program has provided substantial benefits as well. "Overall, data and anecdotal reports suggest that remaining crew positions in the fisheries are more stable and are generally greater total pay under the rationalization program" (Analysis, 57).

The Review also concludes that daily crew pay is similar to what it was prior to the Program. This result is found even though the Review adjusts for inflation, which really isn't appropriate as crab prices do not move with inflation. For example, average opilio

prices from 2000 until implementation of the Program averaged $1.75/lb while they have averaged just $1.50 since the Program began. Similarly, red king crab prices averaged $5.19/lb from 2000 until implementation and have averaged just $4.33 since the Program began. In reality, the crab industry has been living with serious deflation, not inflation. Since crew are paid based on a share system, one would also expect that they would be impacted due to this deflation. Under these conditions, it is remarkable that crew pay per day did not change according to the Review. It would be interesting to see what crew pay per day would be if not adjusted for inflation- as this is the real world that vessel owners and the crew based system live within.

Further analysis of the data provided in the Review based on the years available shows that the average crewmember makes an additional 10.9% per day than they made prior to the Program for red king crab and an additional 1.8% for opilio. Again, this data is adjusted for inflation and the results would show an even greater improvement in pay per day for crew if no adjustment were made.

There have been other studies done to attempt to account for changing prices in regards to daily crew pay. Abbott, Garber-Yonts, and Wilen in their paper titled, "Employment and Remuneration Effects of IFQs in the Bering Sea/Aleutian Islands Crab Fisheries" concluded from EDR data from the 3 year review that average crew made 12% more for red king crab per day but made 5% less for opilio per day adjusting for inflation. However, when measuring daily income in "crab equivalents" in order to take changing crab prices into account, they found daily pay for red king crab increased 46% per day and 29% for opilio per day. Obviously, how you look at the data makes a big difference and low ex-vessel prices on average since the Program began has not helped the comparison. However, it would appear that from a worst case perspective, crew have not been impacted in terms of daily pay. From a more realistic perspective, crew appear to be substantially better off fishing red king crab and somewhat better fishing opilio at least in regards to daily pay than they were before the Program.

With this information, it is not surprising that the Review shows in table 4-27 that the percent of the gross revenue going towards red king crab crew has been falling while it has been steady (and perhaps increasing a bit) in regards to opilio since the Program began. On average, crew are making $734/day fishing red king crab (again, 10.9% higher than before the Program) while making $483/day fishing opilio (again, 1.8% higher than before the Program). Even with the percent of the gross going to crew declining for red king crab, crew continue to make substantially more than they did before the Program fishing red king crab, and substantially more than they make fishing opilio. It would appear that markets are working as owners and crew decide to acquire more pounds of red king crab, either through leasing or purchases with the understanding that the margin may be impacted but at the end of the day, both crew and owner will be better off due to other efficiencies.

From an owner and crew's perspective, it makes a substantial amount of sense to acquire additional pounds of crab, in particular if the owner already owns a significant amount of quota that is not charged any royalty- which is the industry practice. The vessel and crew are already on the grounds and the cost of harvesting this incremental crab is very small. This benefits both owner and crew similarly. Generally, owner and crew seek to lease more crab as this is simply marginal revenue. Owners who lease or purchase additional pounds without the cooperation of the crew can and has resulted in issues in the past. During the first year of the Program there were some isolated cases of owners not involving the crew in terms of leasing and costs of leases. These crew ended up walking off the vessels as was appropriate and the situation was resolved. The bottom line is that crew do have more leverage in the leasing of crab than may be at first apparent. There is a limited pool of good, hard working, professional crew and to attract these crew, vessel owners must pay a fair wage that is comparable to similar work that could be found elsewhere.

The Review notes correctly that "many crew are said to have received full crew share on IFQ initially allocated to the vessel owner" (Analysis, 53). The Review also notes that the expectation is that over time, more and more quota will be charged a lease fee. Although this is a fair assessment, it isn't quite that simple. There are a few examples already of large acquisitions that have occurred where the new vessel owner has decided to continue to set aside the quota that the vessel initially earned under the Program as non-leased to provide a benefit to crew. This occurred even though the new vessel owner acquired all of this initially issued IFQ. The bottom line is that different vessel owners will pay differing amounts to crew based on what they can pay and the crew they are trying to attract.

Another crew issue that continues to be raised (both in the Review and Appendix A) is that the nature of crew jobs has changed and that the perception is that the financial reward for crab fishing is not what it used to be. There is no doubt that the nature of the fishery changed after the Program was implemented. It is important to note though that this is not the first time that the nature of crab crew jobs has changed. Prior to the opilio crash, in the 1990's, there was a professional crab crew who were generally loyal to a vessel. They made wages that were high enough to support himself and a family. The nature of this job changed after the opilio crash. Between 2000 and when the Program was implemented, the professional crab crew who were loyal to a vessel nearly disappeared as there was not enough money for crew to support either themselves or a family on the income. As a result during this period, owners had to frantically find crew who could fill in for very short seasons. This worked well for some crew who had stable, well paying jobs in other fisheries and could hop on and hop back off a vessel, but it did not work well at all for vessel owners. The bottom line is that we are talking of a changing nature of crew jobs due to the Program, but the fishery reflected this nature only during a short time- after the opilio crash and up to implementation of the Program. The nature of the crew jobs under the Program is much more similar to the bigger pre-opilio crash years.

Secondly, the perception that the financial reward for crab fishing is not what it used to be is simply that- a perception. As shown above, crew make the same, if not more, per day than they did prior to the Program. Since crew now fish many more days, their gross pay is also significantly higher. It is true that the risk and reward prior to the Program was much higher- at times crew would literally make nothing for fishing crab while if they were extremely lucky, they could make a significant amount in a short period of time. Few crew would prefer to go back to this system.

Under the Program, crew enjoy a much safer work environment with the incentives to take unreasonable risks now removed. Crew now work a more sustainable pace, allowing them to not only work longer seasons, but also extending the workable years of the average crewman. Some vessel owners are also investing in vessel and gear modifications that reduce the workload on crew. Under the Program, crew now have a fairly reasonable idea as to how much money they will make prior to actually fishing. It is also much easier for crew to determine which vessels are the "highliners" which pay crew well versus those that do not. It is expected that over time, good crew will migrate towards these better vessels to the detriment of the lower paying vessels.

Finally, a tremendous benefit that the Program has provided for crew is entry level opportunity. Prior to the Program, crew simply had very limited entry opportunity. There were basically two ways for a crewmember to become a vessel owner- hit the jackpot in the lottery or successfully work for many years for an owner, garner his respect, and somehow convince him to sell you a small portion of his vessel. As discussed earlier, with the stability of the Program and the ability to buy as much or as little quota share as comfortable, there is now a strong incentive for crew to have a vested interest in the crab fisheries. The Program was also the first catch share program to provide an allocation to skippers at the outset. Once a crewmember finds that he is capped out in regards to purchasing crew quota, he can always continue making purchases of owner quota.

Conclusion:

The NPFMC's Bering Sea Aleutian Island Crab Rationalization "catch shares program" has met or exceeded expectations in regards to developing solutions to its original problem statement that have resulted in a balanced and sustainable fisheries management system . Industry experience and the Review has shown that resource conservation, utilization and management has dramatically improved under the Program. Bycatch and its associated mortalities, and potential landing deadloss has significantly decreased. Excess harvesting and processing capacity as well as low economic returns are no longer the problems they once were. The industry now enjoys economic stability among the harvesters, processors and coastal communities dependent upon the crab resource. Most importantly, the levels of occupational loss of life and injury declined significantly and

immediately upon implementation of the Program. Finally, based on several indicators, crew jobs appear to be stable or better than before the Program.

The Alaska Crab Coalition joins the Alaska Bering Sea Crabberrs in stating that we are confident that the crab fisheries are performing as well, if not better, than other catch share programs under the jurisdiction of the North Pacific Fishery Management Council.

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Date: November 30th, 2010

To: Eric A. Olson, Chairman
Chris Oliver, Executive Director
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
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From: Alaska Bering Sea Crabbers

Re: Agenda item, C-2(c) Receive report on BSAI Crab Rationalization 5-year review

The Alaska Bering Sea Crabbers (ABSC), representing approximately 70% of all vessels fishing crab in the Bering Sea, is pleased that the 5 Year Review (Review) of the Bering Sea/Aleutian Island Crab Catch Share Program (Program) has found that the Program is delivering on the initial goals and objectives better than most would have ever expected. The Program is likely the most heavily regulated and reviewed catch share program in Alaska and possibly in the United States. Although we may not embrace the high level of regulation or review, we also acknowledge the privilege of our Catch Share Program and accept the responsibility of our privilege.

As introductory comments, it should also be noted that the Program took shape with extensive comments and collaboration with affected vessel owners, processors, communities, and skippers over several years. On those issues where the industry did not have consensus, it requested the Council to make the final decision. The end result was a product that, although no one received exactly what they wanted, most participants were satisfied with the carefully balanced outcome.

With this context, these comments will be structured similar to how the Council initially described the problems associated with the crab fisheries in 2002 and will speak from the harvester perspective. Following were the problems identified by the Council as well as the EIS:

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.

Finally, we would also like to provide some comments regarding impacts to crew, even though crew were not specifically mentioned in the original problem statement.

1. Resource conservation, utilization and management problems:

The Review does an excellent job of characterizing the issues experienced prior to the Program in regards to resource conservation, utilization and management problems and how the Program has addressed these issues.

In regard to resource conservation, the Review states, "Vessels are believed to have increased soak times through slowing the pace of fishing and allowing pots to fish during periods when deliveries are made. These increased soak times are believed to have contributed to the increased catch per unit effort observed in most fisheries in the first five years of the program" (46). This increase in catch per unit effort (CPUE) directly results in resource conservation as there are fewer pot lifts required to catch a given TAC.

Much less gear is now being used in total resulting in lower odds of lost pots. For red king crab, there were on average 34,645 pots registered before the Program and 14,472 pots registered after the Program. Similarly for opilio: before the program there were an average of 25,184 pots registered for the fishery while just 12,517 registered after the Program. The slower pace of the fishery also means that vessels can be more thoughtful about where gear is set resulting in fewer tangles with other gear and lower levels of lost pots. It should also be noted that since the Program, temperatures in the Bering Sea have been much colder than normal and sea ice has pushed much further south than normal, generally interfering with the opilio crab grounds. Had we not had the Program, the level of lost pots specifically in the opilio fishery would have been a magnitude higher than they actually were. The cooperative structure of the fishery has literally fostered cooperation between the participants and there have been instances of skippers moving other vessel's gear out of harm's way as the ice threatens to move south. This would not have occurred prior to the Program.

The Review mentions that, "Under rationalization, the season length has extended considerably, thereby slowing the pace of fishing and allowing fishermen to improve fishing methods, including sorting of catch by the gear and sorting on deck. Some vessels are reported to be installing conveyors and chutes that discard bycatch without handling" (135). It is expected that with the ability of harvesters to better cooperate under the Program, harvesters will innovate more than in the past to the benefit of the resource. In addition, longer seasons at a slower pace result in vessels not needing to fish in extreme cold conditions when handling mortality is highest.

In regard to utilization and management concerns, the program has been an unqualified success. Prior to the Program, ADF&G was attempting to manage the fishery to a guideline harvest level. According to the Review, "Between 2000 and 2004, the guideline harvest level for Bristol Bay red king crab was exceeded in two out of five years; the guideline harvest level (GHL) for Bering Sea C. opilio was exceeded in five out of six years" (130). As quotas declined and competition became fiercer, it became nearly impossible for ADF&G to ensure they would not exceed the GHL. The pressure on the department was ridiculous as was the pressure on the skipper and vessel owner who had to make a year's worth of money in just a few days time. For a moment, consider how this system would have worked under the new Magnusson-Stevens Act requirements regarding TACs and ACLs. The bottom line is that the Program was implemented not a moment too soon.

Under the Program, there are fines for overages that occur. According to the Review, in the most recent year the overages were inconsequential. Vessel owners have the tools to be able to transfer overages to other vessels that have not caught all their quota internally through a cooperative or externally through inter-cooperative transfers. This results in a very low likelihood of overages ever resulting in the TAC being exceeded. In fact, the Review states that the TAC has never been exceeded in the fisheries since the Program began.

2. Bycatch and its associated mortalities, and potential landing deadloss:

The Program has also achieved its goals in regard to bycatch and its associated mortalities, and potential landing deadloss. As noted in the above section, average soak times have increased as has CPUE resulting in lower bycatch.

According to Table 13-5 of the Review, the average soak time for red king crab before the Program was just 25.3 hours while after the program, soak time has averaged 57.4 hours. Opilio is similar with average soak time before the Program at 30.7 hours and after the Program at 66.5 hours. The fleet is now averaging over 2 days of soak time versus around 1 day before the program. This is a very important point as 2 days of soak is what time is needed for the bait to be used up and for undersize crab to begin leaving the pot. From an analytical standpoint, it is difficult to correlate these longer soak times to lower bycatch simply because of higher levels of females and undersize males than we had recently both in red king crab and opilio. ABSC is convinced that if we did not have this program, bycatch levels would have been dramatically higher due to shorter soak times.

Under the program, several factors are driving the extended soak times by the fleet. First, the program allows skippers to slow down as they are no longer in a race. Second, the consolidation allowed under the program has resulted in vessels fishing significantly more poundage than they did before the Program which results in a motivation for skippers to fish with more gear. Prior to the Program vessels averaged 141 pots for red king crab; they now fish an average of 186 pots. For opilio, the average vessel fished with 131 pots before the Program and now fishes with 168 pots. Lastly, with the consolidation and expanded poundage for each vessel, the average vessel now has a bit over 1 trip of red king crab and 3-4 trips of opilio. That results in what is called a "town soak" on gear left on the grounds while the vessel delivers. This gear gets a very long soak- generally over 4 days, and usually results in a very good pick of keepers with low bycatch. The bottom line is that fleet consolidation has resulted in this benefit to the resource.

Substantially higher catch per unit effort (CPUE) is one indicator of the increased soak time. Red king crab CPUE has increased on average from 18.4 per pot to 26.0 per pot after the Program. For opilio, the increase is even more significant with an average before the Program of 144.6 per pot to an average of 284.4 per pot after the Program. These higher CPUE's are a direct result of the Program and result in direct benefits to the resource as fewer pot lifts must be made.

The Review also shows that deadloss has either declined or stayed the same since the Program has been in place. No doubt the potential for deadloss has declined dramatically as skippers and vessel owners can make better plans and take fewer risks than before.

Finally, the Review notes that high grading and discard rates have not been an issue other than the 2005-2006 red king crab season. It is important to understand that the industry understood clearly after this one event that high grading would not be tolerated and quickly changed practices to stop high

grading in the future. This is a perfect example of industry being able to work together and solve problems internally. The Program encourages industry participants from being cutthroat "competitors" to being "cooperators" who all benefit by working together.

3. Excess harvesting and processing capacity, as well as low economic returns:

In regard to excess harvesting capacity, it is important to understand that the industry was dealing with a massive reduction in quotas and revenues due to the collapse of the snow crab fishery in 2000. This has been a recurring issue with crab stocks as they are very cyclical. Indeed, the industry is very concerned about the current lack of recruitment of red king crab and the dramatically lower projections of red king crab quotas in the coming years. We are also thankful that we have our catch share program that provides us the flexibility we need to quickly adjust to these future conditions.

It may be helpful for some to provide a bit more of a historical overview of the Bering Sea crab fisheries to explain how we got here. In the period 1984-1986, there was an average of 72 vessels fishing crab in the Bering Sea (about the same as today). The average catch during this period was 63M lbs (a bit more than today). This was during a time when there were really no limits on the fleet- no LLPs at all. The Council could have limited the fleet size at this time but did not. As a result, massive overcapacity occurred when the opilio stock took off in the 1990's. The number of vessels quickly grew from 88 vessels in 1986 to a peak of 272 vessels in 1994. This was partly a result of increasing gross revenue for the fleet but it was also largely a result of the Council determining in the early 1990's that there would be a moratorium of vessels entering the fishery, so if you want to get in, you better do it now. This announcement created a massive rush of conversions and new vessels to enter the fishery at this time to qualify for the future. This resulted in massive overcapacity as anyone who met the pre-announced moratorium timeframe entered the fishery. Too many vessels qualified than was sustainable. Programs such as CCF as well as money flowing from the Exxon Valdez cleanup, cheap boats in the Gulf of Mexico, and processor loans exacerbated the fleet's harvest capacity. It should also be noted that many vessels entered the Bering Sea from the Gulf of Alaska in the 1980's as the crab stocks in the Gulf of Alaska crashed at that same time.

There were attempts to limit the fleet size in the later 1990's but it was of little consequence, the damage had already been done. The industry had built up to an unsustainable level due to speculation to meet Council moratorium and LLP requirements and was not at all prepared to deal with the massive reduction in the opilio TAC. The opilio TAC went from 184M lbs in 1999 to 31Mlbs in 2000. This was a devastating blow for the industry and cannot be underestimated. It was a defining moment for anyone involved.

In fact, the years following 2000 were seen as such a gamble, they were not even used for determining future quota share. Post 2000, vessel owners and crew had no ability to make any sort of meaningful guess as to how much money you would make for the year. A 200 foot boat could catch nothing while a 90 footer could have 100,000 lbs during a 2 day king crab opener just based on where it started fishing. That was no way to run a business.

No one debates the fact that there was substantial consolidation of the crab fleet upon implementation of the Program. The fact that this consolidation occurred so quickly was the result of several factors. The largest factor is that many vessel owners were hanging on by a thread and in order to survive, they needed to consolidate. However, at the same time that the Program was implemented, the Review notes that fuel prices increased 50% and likely resulted in quicker consolidation than would have

occurred otherwise. Without the program, the fleet would have faced low TACs, low ex-vessel prices, high fuel prices and no cash on hand. It would have been a complete disaster and harvesters are grateful to have had and continue to have the tools to adapt and maintain profitability under rapidly changing negative conditions.

This excess harvesting capacity also resulted in very poor entry level opportunities which will be further described in the next section. The bottom line is that before the Program, with severe excess capacity, entry opportunities were severely limited.

The market for vessels changed dramatically upon implementation of the Program. The value of all vessels declined while value transferred to quota share it had earned which was a new asset. Smaller vessels had a very limited market as crab vessels while larger, better maintained vessels changed hands regularly. Since implementation of the Program, values of larger and better maintained vessels have slowly increased due to a lack of supply of these larger safe and efficient vessels. In fact, with the right partners and the right vessel, the return on investment of a crab vessel can far outweigh the return on just quota share if done correctly.

Another aspect of the Program that is much talked about is leasing. The Review appropriately characterizes lease rates in the crab fisheries in section 4.2. These lease rates are similar to lease rates from catch share programs around the world. High margin, low overhead fisheries often times have lease rates of 70% or more while lower margin fisheries can have lease rates considerably less than this. This leasing is simply the excess profit and means that vessels are substantially more profitable than before because of the reduced fleet size.

Three major items should be noted for the future. First, it is expected that opilio biomass will be increasing in the next few years. In fact, one of the largest recruit events of opilio recently occurred and will likely enter the fishery in 3 years or so. This will likely have a dramatic affect on the leasing markets as there will be more IFQ available to vessels and possibly more vessels will need to enter the fishery to catch the quota. This will shift the balance in the opilio leasing market in favor of the vessel owner.

On the other hand, expectations over the last few years and moving forward are that red king crab quotas will decline substantially. Industry participants expected the TAC to drop much more than it did in reality the last two years. This pre-TAC setting uncertainty results in a motivation for vessel owners to secure as much quota as possible with the expectation of the TAC dropping 20-30%. As it turns out, the TAC did not drop nearly as much as expected, but the pressure resulted in some individuals being ultra-competitive in order to secure quota. This trend may continue as we move forward towards lower TACs. However, offsetting this is the fact that many of these vessels that successfully secured the red king crab quota realized they had too many pounds for comfort, had paid too much, and ended up fishing at the end of the season when crab were becoming more scarce. It would be expected that these vessel owners would soon learn a hard lesson and markets would re-balance at least on the margins.

Finally, new Coast Guard rules will be forthcoming which will provide extensive regulations as to which fishing vessels can continue to fish and which can't. This is known as Alternative Compliance. It is expected that a significant portion of the crab fleet will not qualify under Alternative Compliance. It is expected that Alternative Compliance measures will result in further tipping the balance in favor of vessel owners as steel becomes more scares as opposed to the current experience under the Program where there is still an excess of steel and pressure on vessel owners. It may not be a comfortable spot

for quota shares owners without ownership of a vessel if opilio TACs increase and Alternative Compliance measures are put in place. The point is that the industry can now let markets work to determine the appropriate level of vessels fishing and markets will adjust for changing conditions. In this environment, vessel owners have the opportunity to make money whereas they did not before the Program.

4. Lack of economic stability for harvesters, processors and coastal communities:

The preceding section detailed the poor economic condition of the industry prior to the Program. Vessel owners and their crew were not economically viable and the fleet size was consolidating as vessels went bankrupt. Although crab fisheries are inherently volatile and recruitment driven, after the opilio crash, there simply was so little stability the industry slowly bled to death. Owners had literally a few days per fishery to make enough money to keep the operation going. Crew could not survive off crab revenues and therefore were forced to rely on other income, unlike the years before the opilio crash.

A good indicator for the lack of stability in regard to the harvesting sector prior to the Program can be seen from entry opportunities. As the Review states, "entry opportunities were limited under the LLP" (120). Prior to the Program and the opilio crash, an individual would have to invest several million dollars to purchase a vessel. The risks involved were obviously tremendous and odds of success very low. After the opilio crash, there simply was no motivation for new entrants at all since there was no likelihood of profitability even with very optimistic scenarios.

The Review provides further detail as follows, "Since the crab fisheries were greatly overcapitalized on implementation of the rationalization program, any absence of entry to the fisheries to date should be fully expected. The restructuring of harvest privileges under the rationalization program has changed the nature of entry opportunities substantially. Entry can occur through the purchase of harvesting QS without ownership of an interest in a vessel or a supporting license. Annual IFQs can then be fished liberally through leasing arrangements. Since QS are divisible, gradual entry into the program fisheries is permitted. The cost of entry is determined by QS prices, which depend on TACs, crab markets and other factors" (121).

The Review continues, "Full scale entry requires ownership of a vessel in addition to this quota acquisition. Yet, cooperative harvest of IFQ and leasing create an opportunity for a more gradual entry without a vessel. A person can lease IFQ yielded by held QS over a period of years, then acquire a vessel to achieve full scale entry. This method of entry has created greater entry opportunities than existed under LLP management" (121). This new method of entry has dramatically reduced the risk for new entrants and provided the economic stability necessary to encourage investment in the fisheries.

Since the Program has been in place, the level of new entrants has been greater than anticipated. This speaks to the much greater stability the industry now enjoys. The Review estimates that approximately 20% of the red king crab and opilio quota share is now held by approximately 60 new entrants. In some of these cases, there is likely internal restructuring of existing quota share holders occurring, but regardless, it would appear that the there is now a strong incentive for new entrants to invest in the BSAI crab fisheries.

Also in regard to new entrant opportunities, the Review references that until recently average transaction prices were very large. This is expected as some CDQ groups and larger players attempted to position themselves early and would have made it more difficult for new entrants to compete. A

relatively new development is that groups of individuals are working together to buy quota share. In addition, some brokers are allowing quota shares to be parsed out in very small blocks to encourage smaller players to purchase it. This has resulted in the average transaction size of quota share dropping dramatically in the most recent years to the benefit of new entrants. The point is, both larger entities and smaller entities are able to benefit from the stability of the Program.

There is no doubt that the Program has afforded harvesters a much greater level of stability. However, there will always be external factors such as fluctuations in crab TACs, regulations such as Alternative Compliance, or changing ex-vessel prices that can create instability. With the Program, harvesters have the tools necessary to deal with these external instabilities and continue to make money, invest in our vessels, support our communities, and provide good jobs to professional crew.

Although this document focuses mainly on the harvesters experience with the Program, it is important to note that the Review speaks to stability that the Program has also provided to processors and communities. Appendix A in particular speaks to the fact that crab communities seem to be as healthy as they were prior to the Program or better. The more dependent a community was on the crab fishery prior to the Program, the greater the stability it appear the Program has provided based on Appendix B of the Review.

The stability provided by the Program has resulted in a direct benefit to the State of Alaska and it's coastal communities. Based on recent data from the Restricted Access Management division of the National Marine Fisheries Service, the amount of red crab quota share held by Alaskan's has increased by 65% while the amount of opilio quota share held by Alaskan's has increased 77%. Non-Alaskan States saw a decline in the amount of both red crab and opilio quota share holdings as a result. This significant movement of quota share to Alaskans is primarily due to CDQ groups making major purchases since implementation of the Program in both operations and quota share. These investments will provide better opportunities and stability for residents of Bering Sea coastal communities. There is no doubt that CDQ groups would not have made the level of investment in the crab fishery without the stability provided by the Program.

The largest concern industry has in regard to stability at this time is instability caused by the Council process itself. There have been discussion papers, analysis and ideas floated over the last few years in the Council process that could have massively destabilizing impacts. This has at times paralyzed decision making on the part of industry and has resulted in a focus of industry leaders on the Council process instead of a focus on how to grow the industry pie larger for all constituents.

5. High levels of occupational loss of life and injury:

From August 1990 to the time of implementation of the Program, a total of 82 lives were lost fishing crab on the Bering Sea. The Bering Sea crab industry was well deserving of its nickname as "the deadliest catch". Anyone who was involved in the industry for any length of time during these years knew people who never came back. This was simply an unacceptable management system.

Improvements to safety were apparent even before the Program began, namely due to stability and safety compliance checks instituted by the Coast Guard. However, the Program resulted in more obvious, immediate, and dramatic improvements in safety. Since the Program was implemented, only one life has been lost.

Appendix B to the 5 Year Review (Appendix B) explains that "A major fisheries management problem with the Bering Sea crab fleet during this time frame (prior to the Program) was that despite efforts to limit overcapacity and fishery participants through a license limitation plan, the catching power within the fleet greatly exceeded the available amount of crab, resulting in an extremely competitive "race for fish" in what was already a high-risk operating environment. (1) This statement simply hits the nail on the head.

Appendix B provides many examples of why the Program results in the obvious, immediate, and dramatic improvements in safety. Appendix B explains:

Crew are more experienced as the seasons are now longer resulting in dedicated crab crew: "Maintaining a consistent crew better maintains vessel management, improves efficiency and safe operating procedures, crew become more familiar with the vessels operation, other crew, deck rotation." (4)

Crew are less fatigued: "In the Bristol Bay red king crab fishery, pot lifts per vessel day have decreased by an average of 32% and in the Bering Sea C. Opilio fishery, pot lifts per vessel day have decreased by 17%. Slowing down the pace allows for crew to get more (and more regular) rest than in the derby fishery. A less fatigued crew is less likely to have accidents." (5)

Consolidation of the fleet has resulted in safer vessels: "(Prior to the Program), the overall poor profitability of the highly capitalized fisheries with relatively low TACs may have economically forced some owners to postpone needed vessel maintenance. Fleet contraction resulted in the removal of many of these marginal vessels from the fleet" (6). Appendix B goes on to say, "The consolidation of the fleet resulted in an increase in the average vessel size. These larger vessels lend themselves to a larger work platform and may be able to handle the weather conditions more easily and are more fully capable of operating in their chosen service" (6).

In addition, Appendix B points out that skippers now have the flexibility to both delay when they leave port due to weather and also to suspend fishing on the grounds due to weather. The report describes how the creation of a "super coop" under the Program has also increased safety by creating more flexibility for those vessels in the super coop and gives these vessels the ability to get off the grounds when the weather turns bad. Finally, the report explains that there is less incentive to overload vessels with pots as the race is over.

The report also notes that an action to allow for "emergency relief" of crab designated for the Northern district (St. Paul) could help to improve safety. Emergency relief is an agenda item also on the agenda for the December Council meeting and is supported by Alaska Bering Sea Crabbers. Harvesters, processors, and community representatives have worked for several years on this effort that will ultimately reduce the incentives for skippers to take risks during marginal conditions delivering in the Northern district.

One final point on improvements to safety is that vessels are now more profitable than they were before the Program. As a result, they spend more money on maintenance and repairs resulting in safer vessels. This is confirmed through discussions with both a vessel surveyor and a shipyard manager, both very familiar with the crab fleet.

Finally, Alaska Bering Sea Crabbers would like to endorse all of the recommendations found in Appendix B of the 5 Year Review to further improve safety of the BSAI crab fleet for the future.

6. Crew impacts:

Although crew were not directly brought up as part of the original problem statement, it is appropriate to have a discussion regarding the impacts of the Program on crew.

The most important point from the Review from a crew perspective is that the Program has provided substantial benefits to them as well. "Overall, data and anecdotal reports suggest that remaining crew positions in the fisheries are more stable and are generally greater total pay under the rationalization program" (57).

The Review also concludes that daily crew pay is similar to what it was prior to the Program. This result is found even though the Review adjusts for inflation, when in reality, crab prices do not move with inflation. For example, average opilio prices from 2000 until implementation of the Program averaged $1.75/lb while they have averaged just $1.50 since the Program began. Similarly, red king crab prices averaged $5.19/lb from 2000 until implementation and have averaged just $4.33 since the Program began. Hence, the crab industry has been living with serious deflation, not inflation. Since crew are paid based on a share system, one would also expect that they would be impacted due to this deflation. Under these conditions, it is remarkable that crew pay per day did not change according to the Review. It would be interesting to see what crew pay per day would be if not adjusted for inflation- as this is the real world that vessel owners and the crew based system live within.

Further analysis of the data provided in the Review based on the years available shows that the average crewmember makes an additional 10.9% per day than they made prior to the Program for red king crab and an additional 1.8% for opilio. Again, this data is adjusted for inflation and the results would show an even greater improvement in pay per day for crew if no adjustment were made.

There have been other studies done to attempt to account for changing prices in regards to daily crew pay. Abbott, Garber-Yonts, and Wilen in their paper titled, "Employment and Remuneration Effects of IFQs in the Bering Sea/Aleutian Islands Crab Fisheries" concluded from EDR data from the 3 year review that average crew made 12% more for red king crab per day but made 5% less for opilio per day adjusting for inflation. However, when measuring daily income in "crab equivalents" in order to take changing crab prices into account, they found daily pay for red king crab increased 46% per day and 29% for opilio per day. Obviously, how you look at the data makes a big difference and low ex-vessel prices on average since the Program began has not helped the comparison. However, it would appear that from a worst case perspective, crew have not been impacted in terms of daily pay. From a more realistic perspective, crew appear to be substantially better off fishing red king crab and somewhat better fishing opilio at least in regards to daily pay than they were before the Program.

With this information, it is not surprising that the Review shows in table 4-27 that the percent of the gross revenue going towards red king crab crew has been falling while it has been steady (and perhaps increasing a bit) in regards to opilio since the Program began. On average, crew are making $734/day fishing red king crab (again, 10.9% higher than before the Program) while making $483/day fishing opilio (again, 1.8% higher than before the Program). Even with the percent of the gross going to crew declining for red king crab, crew continue to make substantially more than they did before the Program fishing red king crab, and substantially more than they make fishing opilio. It would appear that markets

are working as owners and crew decide to acquire more pounds of red king crab, either through leasing or purchases with the understanding that the margin may be impacted but at the end of the day, both crew and owner will be better off due to other efficiencies.

From an owner and crew's perspective, it makes a substantial amount of sense to acquire additional pounds of crab, in particular if the owner already owns a significant amount of quota that is not charged any royalty- which is the industry practice. The vessel and crew are already on the grounds and the cost of harvesting this incremental crab is very small. This benefits both owner and crew similarly. Generally, owner and crew seek to lease more crab as this is simply marginal revenue. Instances where owners who lease or purchase additional pounds without the cooperation of the crew can create problems. During the first year of the Program there were some isolated cases of owners not involving the crew in terms of leasing and costs of leases. These crewmembers walked off the vessels as was appropriate and the situation was resolved. The bottom line is that crew do have more leverage in the leasing of crab than may be at first apparent. There is a limited pool of good, hard working, professional crew and to attract these crewmembers, vessel owners must pay a fair wage that is comparable to similar work that could be found elsewhere.

The Review notes correctly that "many crew are said to have received full crew share on IFQ initially allocated to the vessel owner" (53). The Review also notes that the expectation is that over time, more and more quota will be charged a lease fee. Although this is a fair assessment, it isn't quite that simple. There are a few examples already of large acquisitions that have occurred where the new vessel owner has decided to continue to set aside the quota that the vessel initially earned under the Program as non-leased to provide a benefit to crew. This occurred even though the new vessel owner acquired all of this initially issued IFQ. The bottom line is that different vessel owners will pay differing amounts to crew based on what they can pay and the crew they are trying to attract.

Another crew issue that continues to be raised (both in the Review and Appendix A) is that the nature of crew jobs has changed and that the perception is that the financial reward for crab fishing is not what it used to be. There is no doubt that the nature of the fishery changed after the Program was implemented. It is important to note though that this is not the first time that the nature of crab crew jobs has changed. Prior to the opilio crash, there was a professional crab crew who were generally loyal to a particular vessel. A crewman made wages that were high enough to support himself and a family. The nature of this job changed after the opilio crash. Between 2000 and when the Program was implemented, the professional crab crew who were loyal to a vessel nearly disappeared as there was not enough money for every crewman to support either themselves or a family on the income. As a result during this period, owners had to frantically find crew who could fill in for very short seasons. This worked well for some crew who had stable, well paying jobs in other fisheries and could hop on and hop back off a vessel, but it did not work well at all for vessel owners. We are talking of a changing nature of crew jobs due to the Program, but the fishery reflected this nature only during a short time- after the opilio crash and up to implementation of the Program. The current nature of the crew jobs under the Program is quite similar to the bigger pre-opilio crash years.

Secondly, the perception that the financial reward for crab fishing is not what it used to be is simply that- a perception. As shown above, crew earn the same, if not more, per day than they did prior to the Program. Since crew now fish many more days, their gross pay is also significantly higher. It is true that the risk and reward prior to the Program was much higher- at times crew would literally make nothing for fishing crab while if they were extremely lucky, they could make a significant amount in a short period of time. Few crew would prefer to go back to this system.

Under the Program, crew enjoy a much safer work environment with the incentives to take unreasonable risks now removed. Crew now work a more sustainable pace, allowing them to not only work longer seasons, but also extending the workable years of the average crewman. Some vessel owners are also investing in vessel and gear modifications that reduce the workload on crew. Under the Program, crew now have a fairly reasonable idea as to how much money they will make prior to actually fishing. It is also much easier for crew to determine which vessels are the "highliners" which pay crew well versus those that do not. It is expected that over time, good crew will migrate towards these better vessels to the detriment of the lower paying vessels.

Finally, a tremendous benefit that the Program has provided for crew is entry level opportunity. Prior to the Program, crew simply had very limited entry opportunity. There were basically two ways for a crewmember to become a vessel owner: hit the jackpot in the lottery or successfully work for many years for an owner, garner his respect, and somehow convince him to sell you a small portion of his vessel. As discussed earlier, with the stability of the Program and the ability to buy as much or as little quota share as comfortable, there is now a strong incentive for crew to have a vested interest in the crab fisheries. The Program was also the first catch share program to provide an allocation to skippers at the outset. Once a crewmember finds that he is capped out in regards to purchasing crew quota, he can always continue making purchases of owner quota.

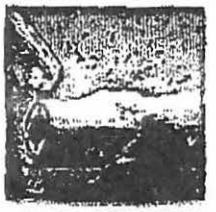
Summary:

The Bering Sea Aleutian Island Crab Rationalization Program has met or exceeded expectations in regards to delivering against the problems it was intending to solve. Industry experience and the Review has shown that resource conservation, utilization and management has dramatically improved under the Program. We have seen that bycatch and its associated mortalities, and potential landing deadloss has significantly decreased. Excess harvesting and processing capacity as well as low economic returns are no longer the problems they once were. The industry now enjoys economic stability among the harvesters, processors and coastal communities dependent upon the crab resource. Most importantly, the levels of occupational loss of life and injury declined significantly and immediately upon implementation of the Program. Finally, crew jobs appear to be stable or better than before the Program using many indicators.

There are many catch share programs in the Bering Sea and Gulf of Alaska. Ours is the most complex, regulated and reviewed. We feel confident that the crab fisheries are performing as well as than these other catch share programs under the jurisdiction of the North Pacific Fishery Management Council.

Sincerely,

Edward Poulsen, Executive Director
Alaska Bering Sea Crabbers



ALASKA BERING SEA CRABBERS

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Date: November 30th, 2010

To: Eric A. Olson, Chairman
Chris Oliver, Executive Director
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, Alaska 99501-2252

From: Alaska Bering Sea Crabbers

Re: Agenda item, C-2(c) Receive report on BSAI Crab Rationalization 5-year review

Please submit the following paper prepared by Dr. James Wilen on behalf of Alaska Bering Sea Crabbers under agenda item C-2(c).

Sincerely,

Edward Poulsen, Executive Director
Alaska Bering Sea Crabbers

The BSAI Crab Rationalization Program: Market Mechanisms and Policy Implications

By

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Report prepared at the request of
Alaska Bering Sea Crabbers
For the North Pacific Fisheries Management Council Meeting
Anchorage, Alaska
December 5-11, 2010

Executive Summary

- QS sale prices are determined by expectations of future profitability, in the same way that agricultural land prices capitalize expectations of future farm profits into land transactions prices.

- IFQ lease prices similarly capture expectations of profitability, but over only the immediate year. Again, IFQ lease prices are analogous to other short-term markets such as the lease market for farmland.

- The experience with QS and IFQ lease prices in crab is like other experience around the world with quota shares. Lease prices commonly trade at 60-70% of ex vessel prices, and QS prices are commonly 10-12 times IFQ lease prices.

- A most important point about lease prices is that they are a residual payment. That is, the price of leased IFQ reflects the surplus profits left over after all other payments to inputs, including crew, have been accounted for. It is thus mistaken to suppose that high lease prices leave less for crew payment. In fact, the causality runs precisely the opposite way; crew payments (and payments for other inputs) determine what is left to pay for IFQ leases.

- Crew payments reflect market clearing mechanisms in a labor market. Crew must be paid enough to induce them to forego alternative employment opportunities over a relevant period. Crew pay is thus anchored by (external) labor market forces in other occupations, regions, and fisheries. Competition among vessel owners (internal forces) will also ensure that crew with skills that contribute especially to a vessel's high productivity will be rewarded with premiums that reflect their individual contributions.

- The share system is a labor market clearing mechanism that exists to motivate effort, to balance supply and demand in the labor market for crew, and to sort and pay crew for differential productivity. Crab rationalization has likely changed the importance of some of these factors. Crew stamina and attributes suited to intense derby conditions are no longer as important. In addition, there is less need for a risk premium to compensate for both physical and financial risk associated with derby conditions. These changes should bring daily compensation more into line with compensation for similar alternatives outside of the crab fisheries. At the same time, crew under post-rationalization commit to longer seasons and hence must be compensated on a seasonal basis for extended time fishing compared with the derby.

- Data-based evidence on crew impacts of crab rationalization reveals several facts. First, the number of whole crew jobs has been reduced roughly in proportion to the amount of consolidation. Second, remaining crew are, on average, paid significantly more per season and about the same per day compared with before rationalization. Third, these post-rationalization increases in seasonal remuneration have occurred in the face of substantial decreases in crab prices. If one makes a simple adjustment for crab price changes by measuring pay in "crab equivalents", both seasonal and daily remuneration after rationalization has increased substantially.

- There is some confusion over the connection between lease payments and crew pay. In the post-rationalization period, it has become a new convention to subtract lease payments from gross revenues to get the net that is then distributed to crew. But we should not confuse accounting convention with the fundamental forces that determine crew pay, which are largely external labor market forces. Crew must receive roughly at least what they would receive in alternative occupations, and consistently high performing crew members must be compensated for their services. Crew pay is not "caused" by lease rates.

- Lease rates are market clearing prices, reflecting the potential surplus or profitability expected in an upcoming season. It is thus not practically possible to cap lease prices. In the same way that rent controls fail to contain the forces of supply and demand, attempts to cap or regulate or restrict lease prices will not succeed since participants will figure out ways to skirt the restrictions through side payments and other means.

- Vessel quota use caps have been suggested as a method to create new crew jobs. Quota use caps could be used to "unconsolidate" the fleet, and this would two effects. First, existing TAC would be spread over more vessels and hence more crew would be hired. But, second, each crew job would be conducted over shorter seasons, which would reduce seasonal pay per crewmember. Hence revenues to create new jobs would reduce the pay of current crew members.

- Restricting quota ownership only to active fishermen would create perverse incentives by requiring the old and sick to be aboard vessels in dangerous conditions. It would also delay the exit of fishermen who intend to retire but for whom retirement would mandate quota share sale. These kinds of quota restrictions would not affect lease prices, since the existence of "armchair" owners does hot determine lease prices.

- Various policies to reallocate existing quota to new claimants will have impacts depending upon whether reallocation is voluntary (as via markets) or involuntary. Involuntary transfers can cause perverse incentives and unintended consequences. Most quota share systems involve significant turnover of originally-granted quota early in the program. Those that sell QS remove the expected value of future profits from the fishery forever and those that buy QS pay full value of the present value of future returns. In the long run, all QS will change hands and every participant will be earning normal returns after subtracting costs of purchasing QS. During adjustment to the long run, policies that transfer quota proportionately from all participants will affect different QS owners in different ways. Those that own only grandfathered QS will have some of their grandfathered QS wealth transferred to new claimants, but those that have bought QS will effectively be taxed out of operating earnings. Those that have purchased all of their quota will be the most adversely affected financially. If an involuntary QS transfer is not sprung by "surprise" or otherwise based on past participation, the anticipation of such a system will create perverse incentives. Crew slated to receive allocations will voluntarily lower their pay in order to gain access to the future allocation. And grandfathered quota owners anticipating the tax will sell earlier than intended, creating a larger group of recent buyers for whom the reallocation is a pure tax. In contrast, voluntary reallocation will benefit all those who see opportunities to transact in QS and there are no appreciable side effects.

The BSAI Crab Rationalization Program: Market Mechanisms and Policy Implications

IFQs have been adopted in hundreds of fisheries around the world since the early 1980s when they were first adopted in Iceland and New Zealand. There is thus considerable real experience from which to draw when designing new programs or contemplating changes in existing programs. Unfortunately, not all of the experience has been analyzed, summarized, or compared in consistent ways. Moreover, there are few published sources that directly address the kinds of questions often raised in the policy process. This paper discusses some common questions that arise in IFQ policy discussions, and that are not well documented in either published literature or reports. We address the questions using a combination of evidence and experience, commonly accepted economic theory, and understanding of mechanisms operating in analogous markets.

What determines QS sale prices?

Quota shares (QS) grant the holder access to utilize the productivity of a portion of a natural resource. QS are thus close in spirit to the land title that gives a farmer access to the productive potential of a particular piece of land. To understand how QS sale prices are determined, we can ask the similar question: how are agricultural land prices determined? The answer is: land prices are bid up by competition among farmers to values that reflect expectations of the net profitability of the land over the foreseeable future.

Example: Suppose that an acre of land in its most productive use produces $3,000 of gross revenue per year. Suppose further that costs consist of $1,000 for labor, $400 for water, $300 for equipment, and $300 for pesticides. Then this particular piece of land will sell for the **present value** of the expected net profits. If the current net profits are expected to persist at an inflation-adjusted $1,000 per year, the present value of that stream of net revenues out into the future will be a multiple of the expected annual net profits. A common multiple is about one divided by the real inflation-adjusted discount rate. A reasonable real discount rate is on the order of 0.08, and hence a benchmark multiple is 12.5. This hypothetical piece of land thus should sell for something around $1,000*(1/.08) or $12,500 per acre.

The analogy for a piece of farmland carries over to the case of QS. The transaction price for QS will be bid up by competition among fishermen to the present value of net surplus that they expect each pound or ton of QS to yield over the foreseeable future. If crab is expected to fetch $4.50 per pound in the ex-vessel market, and if costs of harvesting are expected to be $1.50 per pound, then the transactions price for a pound of QS will be roughly $3.00*(1/r) per pound. If we use r=.08 again, the sale price of QS will be $37.50.[1] In practice, QS prices depend upon **expectations** of

[1] The use of r=.08 as a discount rate is illustrative but not arbitrary. It is similar to rates found by Newell, Sanchirico and Kerr (2005) in their study of New Zealand quota markets, and by Huppert, Ellis and Noble (1996) and Karpoff (1984) in their studies of Alaska salmon permit markets. It has

future surplus values, and these depend, in turn, on expectations of future prices and future costs.[2]

It is important to reiterate the fundamental point, namely that QS transactions prices reflect expectations about the amount of surplus value (revenue less costs) that will be generated over the future by the resource itself. Economic theory suggests that, prior to the introduction of IFQs in the BSAI crab fishery, Alaska's crab fishery resources were likely generating **zero** surplus value on average, as costs in the highly inefficient derby fishery were driven up to revenues in the race to fish. The crab rationalization program removed excess fishing capacity and all of the costs associated with redundant effort. The savings associated with removing substantial portions of the fleet and all of the attendant costs are most likely the bulk of what has been capitalized into current QS prices. In addition, QS dramatically changed incentives away from racing for volume to "racing for value". For the remaining fleet, increased CPUE, fuel cost savings, longer soak times, less deadloss, the coordination benefits of coops, and more efficient use of vessel capital are now also capitalized into QS prices. Importantly, high QS prices reflect the fact that Alaskan crab resources are generating high surplus value because they are finally economically productive. QS prices are thus measures of the success of the rationalization program.

How are IFQ lease prices determined?

Once it is acknowledged that QS values reflect expectations of net surpluses over the foreseeable future, it is straightforward to see that lease prices of IFQ reflect the same forces, except over just the immediate year. Farmers buy and sell each other's land in transactions that transfer title permanently; but they also lease land on an annual basis. Lease prices for farmland are bid up to levels equal to expected surplus over the upcoming year. In the same way, IFQ lease prices are also bid up to the expected net surplus over the current year. So if IFQ leases at 66% of ex-vessel prices, it reveals that the expected costs of catching must be roughly 34% of revenues and surplus value the remaining 66%.

If one examines the markets for IFQs in other fisheries around the world, there a very wide range of lease values, expressed as a fraction of ex-vessel prices. There is no "normal" or "average" value that one should expect in any particular fishery; the values depends upon biology, markets, technology and fishing practices, the composition of fixed and variable costs, and regulations. If anything can be said

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been suggested as appropriate in discussions with brokers who deal with limited entry licenses and quota.

[2] In the early phases of rationalization programs, participants are uncertain about how net surpluses will change as costs are reduced and market quality is improved. QS prices thus may be quite variable in "green" markets and then stabilize as the QS market matures. Newell et. al. (2005) examined the New Zealand IFQ system between 1986-1998 and found that the measure of price dispersion for quota sales dropped from 35% (mean absolute deviation from the average over a month) to 15% after about 5 years as market participants learned what to expect about prices.

generally, it is that lease values are a surprisingly high fraction of ex-vessel prices. Lease values are 60-80% or more of ex-vessel values for some fisheries.[3] Values at the low end may be around 35%, numbers observed in British Columbia's shellfish, sea urchin and geoduck fisheries. While it has not been demonstrated definitively, fisheries with high fixed costs and low variable costs appear to generate high lease prices expressed as fractions of ex-vessel prices.

Perhaps the most important fact about lease prices is that they are determined as a **residual payment**. That is, the values that emerge in the lease market as lease prices are effectively determined **after** all other costs have been accounted for. So it is mistaken, as commonly claimed, that high lease prices crowd out or leave less income to pay crew members or other inputs.[4] In fact, the causality runs precisely in the opposite direction. Crew payments (and payments for other inputs) determine what remains for lease prices rather than vice versa.

What is the connection between IFQ lease prices and QS prices?

QS prices depend upon expectations of the future flow of surpluses from the privilege to access a portion of the resource. They are thus forward-looking and similar to equity prices that investors pay for a share of a firm's future dividends and capital gains. When fundamental market conditions change or are expected to change (eg. a recession that reduces demand, or changes in the exchange rate with trading partners, or new sources of competing product) these changes will be reflected in QS prices. Expectations about near-term forces will have larger effects than far-term events that will be discounted.

IFQ lease prices also reflect expectations about surpluses (profits), but only over the upcoming year. In practice, after a system has settled down and the initial impacts of rationalization have been observed, participants begin to get a better idea of how both QS and IFQ leasing markets operate. Under relatively stable conditions regarding markets, abundance, and regulations, IFQ lease prices then become the best predictors of future surplus values. We tend to see, in these circumstances a stable relationship between, QS prices, IFQ lease prices, and exvessel prices, namely:

$$QS_{price} = (1/r) * IFQ_{lease\ price} = (1/r) * \lambda * P_{exvessel}$$

where λ is the IFQ lease price/exvessel price ratio. This is a simplification that should hold when conditions are stable.[5] It illustrates the connections between, and

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[3] Tamm et. al. 2010.

[4] Many analysts of IFQs make this mistake, including Tamm et. al. (2010), Pinkerton and Edwards (2009), and others. These authors do not seem to understand the basic workings of asset markets.

[5] Conditions in real world fisheries are rarely perfectly stable as abundance and prices change. We expect less variation in QS sales prices since they depend upon long run (average) expectations, and more year to year variation in lease prices. This is what Newell et. al. (2005) found in their analysis of 120,000 lease prices and 30,000 sales prices in New Zealand during the 1986-1998 period.

mechanisms that link surpluses, the lease market, expectations of long run surpluses, and QS prices.

In the early phases of rationalization programs, there is considerable uncertainty about how the program will affect surpluses (profits) and hence QS prices may be quite variable and uncertain.[6] QS buyers and sellers will not have firm estimates about how operational changes will affect costs, and about how quality changes will affect markets. Nevertheless, imperfect expectations about these initial effects of a program and their long term trajectories will get capitalized into current QS prices. This suggests that during early phases of a program, the long run relationship shown above may not hold, and actual QS prices may be above or below their eventual relationship to IFQ lease values.[7]

What determines crew payments?

In a most basic sense, crew payments are determined as a market-clearing mechanism in the labor market for crew. Labor markets sort individuals by allocating workers with particular skills to occupations that require those skills. Labor markets are voluntary exchanges; crew will not accept less than they can make in the next best alternative occupation. Crew payments in Alaska are thus anchored from below by the vibrancy of labor markets on the West Coast in ports like Seattle, Akutan, Kodiak, etc. If construction is booming, service sectors are growing, and coastal port cities are vibrant with profitable fisheries, crew payments

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Measures of monthly variation began at 35% for both sales and lease prices and rapidly dropped to about 15%. for sales prices. For lease prices, the percentage absolute deviation from monthly mean sales prices fell, but only to about 28% after the system matured. This reflects the fact that sale prices are based on long run average expectations whereas lease prices are based on expectations of the immediate year's conditions, which vary with yearly variations in price and abundance.

[6] The British Columbia halibut program prohibited sales (but not leasing) of quota during the first two years, precisely because of this problem. Allowing a "burn-in" period where fishermen could observe how IFQs affected operations and the market helped avoid a source of contention that emerged in the New Zealand program among many who believed that they sold out at prices that were too low.

[7] They will be below to the extent that participants underestimate surplus values and lease market values. They also may be above when participants perfectly forecast growth in surplus values. For example, suppose net surplus is expected to grow at a constant rate over the near term as changes in fishing operations begin to generate surpluses. The effect of growth in the surplus is to reduce the discount rate by the rate of growth. If, in our hypothetical crab example above, surpluses are expected to grow at 1.5% per year, the present value will be $3*(1/(.08-.015)) or $46.15 instead of $37.50. This is similar to the phenomenon observed in stock markets where "average" long term price/earnings ratios are expected to be on the order of 12/1 or14/1, whereas actual price/earnings ratios (particularly at the beginning of economic upturns) are often higher---due to the expectation of growing dividends. The logic works symmetrically if surplus is expected to decline. For example, suppose that TACs are expected to contract by 1.5% per year, or that prices are expected to fall. Then the expected rate of reduction in surpluses would act to increase the effective discount rate so that the price of QS would be $3*(1/(.08+.015))=$31.58. This price is actually more in line with QS price/IFQ lease price relationships currently observed in the market for red king crab, perhaps reflecting some expectation that TACs are anticipated to fall in the future.

in any one fishery will have to be relatively high in order to lure crew away from alternatives.

At the same time, employers will not be able to pay more than the value of productivity added to the operation by the particular worker who is employed. So wages will be anchored from above by the value of the ordinary or special skills that particular labor types brings to a production operation. Labor payments cannot remain low for crew that provide high quality contributions; they will be bid away by others who are willing to pay for higher valued services. At the same time, underperforming labor will not continue to be paid wages far above their contribution to the fishing operation. Individual crew pay thus reflects external forces (wages in alternative occupations) and internal forces (contribution of crew labor to the fishing operation). These forces can change, causing readjustments in the crew labor market. If regional wages for the ideal crewman are high because alternatives are abundant, vessel owners may economize by hiring fewer crew or crew with less than ideal skills. If technology or institutional changes alter the need for certain kinds of labor, there will be changes in crew composition and with it, changes in crew pay. In the final analysis, the important point is that crew pay is determined as an outcome in the labor market for crew, and subject to the forces of the demand and supply of labor.

What determines crew shares?

The share system is unique as a labor market clearing mechanism; most labor markets clear by adjusting wages and salaries to the supply and demand for labor. So understanding why the share system exists in the first place is fundamental to understanding how we should expect it to change under rationalization. Crew shares perform three valuable functions. First, **shares induce extra effort** when it is needed under uncertain and variable circumstances in fishing.[8] If crew and skippers were paid a wage, they would be paid regardless of how much effort they actually put into fishing. Skippers would have a diminished incentive to find fish and crew would lack incentives to work as hard when fish were found. The importance of incentive effects is amplified many fold under derby race to fish conditions. Owners' returns on vessel capital depend critically on the incentive effects generated by rewarding a skipper for efforts to find crab during the frenzy of a 3-day opening, and the incentive effects of inducing crew to pull, re-bait and deploy pot strings as fast as possible when the vessel is in crab.

While the need to induce work via an incentive mechanism explains why the share system is used, it doesn't explain why the particular share that emerges as convention is determined.[9] Again, fundamental mechanisms of labor markets

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[8] Eswaran and Kotwal, 1985; Casey 1997; Wilen and Casey 1997; Price and McConnell 2006.

[9] During the pre-rationalization derby period, crew share in red king crab was about 35% of gross revenues, and that share was roughly constant across the spectrum of vessels from high to low producers (Fina, 2009).

provide the answer. Whatever specific crew share number emerges in a fishery, crew shares "**clear the market**", or attract the right amount and right kinds of crew out of other alternative occupations, on average. In derby conditions, crew pay must include a premium for physical risk, for financial risk, and for the extreme physical conditions, over and above what an average type of laborer drawn from the crew labor pool would get under less demanding and risky conditions. In short, during the derby we had, on average,:

$$average\ crew\ pay = (alternative\ wage_{derby\ type\ crew} + risk\ premium) * days_{derby}$$

Finally, in addition to serving as an inducement to work hard, and as a means of clearing the market for crew, the share system performs a **sorting function.** Different vessels, skippers, and crew may bring different skills to a fishing operation that persist from season to season. In a market cleared by wages, high quality crew would get higher wages and vice versa with lower quality crew. In the share system, this happens automatically because highliner combinations of vessel/skipper/crew make more gross, because (aside from luck) they do something better together that influences harvest. A labor market must pay participants at least what they would earn in other occupations, but it also must pay participants their contribution to productivity. A share system rewards winning combinations of skipper/crew in a fairly direct manner without the complicated need to have separate distinctly personal wages.[10] Those vessels that catch more crab pay skippers and crew more even with a constant share. The best skippers and crew gravitate and amalgamate into the highliner vessel combinations, and they are rewarded for whatever above-average skills they bring to the operation under a share system. This sorting role (along with the effort inducement role) is also particularly important as a labor market mechanism under short, intense, risky, and highly variable derby conditions. It is also responsible for the large variations in crew pay, which was significant during the pre-rationalization derby fishery.[11]

How has crab rationalization affected the labor market and remuneration for crew?

Labor market mechanisms

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[10] This is true on average, but it is also the case that share systems establish share rates by convention and habit that persist over long periods. Straight reliance on a share system could lead to underpayment of high-producing crew and overpayment of less productive crew, which is probably why crew negotiate individual contracts with vessel owners. Individual contracts enable modification of a system based on shares that have been established by convention and habit, and fine tuning of pay to reward special skills that particular crew members bring to a vessel.

[11] Fina (2009) examines the distribution of crew pay across vessels categorized into different quartiles according to production. In the derby period, the average pay of red king crab crewmembers on top quartile vessels was 3-4 times the pay of crewmembers on lowest quartile vessels.

While there has not been a definitive study of this question, there is both data-based evidence and other anecdotal evidence that point to changes in the way the crew labor market is clearing and sorting under rationalization. With longer seasons rather than derby conditions, and with IFQ rather than luck determining seasonal harvests, there is much less physical risk and financial risk faced by an average crew member. In addition, under less intense fishing conditions, the importance of the incentive effect in inducing extreme bursts of work effort has likely diminished. So the kind of work effort needed has changed under rationalization in ways that have eliminated or reduced the need for a risk premium (to reward both physical and financial risk taking) and perhaps also reduced the need for extreme derby condition stamina. It is thus likely that the amount of pay to crew is converging on pay packages that are closer to the amounts needed to just compensate crew for foregone earnings in comparable jobs. But the pool of labor may have changed also and hence the relevant comparable job market may have changed. It is an oversimplification, but the derby fishery drew crew from a relatively small pool of brawny, risk-taking youngsters, with stamina and experience about derby conditions. New conditions may require different labor types, perhaps less brawny and young, less willing to take physical and financial risks, and more interested in working in fishing to older ages. New crew may even be drawing from a (potentially larger) pool of labor with more stable alternatives. So in contrast to above, we now may have something like:

$$average\ crew\ pay = (alternative\ wage_{post-rationalization\ type}) * days_{post-rationalization}$$

It may also be that post-rationalization there is less distinction between crew services needed to man high and low production operations. High and low production operations may now be more determined by quota holdings than special skills associated with both skippers and crew that previously generated persistent differences. If this is correct, it would suggest that the sorting function provided by the share system might become less important.

How this will work itself out in the long run is unclear, but there is evidence that the mechanisms by which crew payment is determined are changing in several ways. First, if specialized skills and willingness to take physical and financial risks are becoming less important, we would expect that crew payments would converge to alternative labor opportunity levels, and become more homogeneous across vessels. But with variation in harvests per vessel and a fixed crew share, this convergence would not be possible and hence some would be overpaid and some underpaid. A mechanism that allows the new labor market to clear under new circumstances is for crew shares themselves to adjust, so that total pay on highliners and lowliners for otherwise equal crew are brought into line. This appears to be happening. Fina (2009) shows that whereas average seasonal crew **pay** rises, average crew **shares** on gross revenues on red king crab vessels drop steadily post-rationalization as a

crewmember moves up onto vessels in the higher quartiles of productivity.[12] This adjustment in the crew share has reduced the spread between total crew pay between high and low productivity vessels closer to 2 to 1, from its pre-rationalization derby level closer to 3-4 to 1.

In summary, rationalization has induced a change in the kind of labor effort needed, and the market is responding by attracting and allocating a different pool of labor into the new crab fishery. The need for premia to compensate for the risky and demanding conditions under the derby has likely diminished, and hence crew pay rates are converging on what is necessary to draw them from alternative occupations. It may also be that kind of crew needed is being drawn from a different labor pool than under derby conditions. These forces appear to be homogenizing forces that may tend to equalize pay rates for equal services provided. But total pay for the average crew member and for specific crew will depend not only on pay rates, but on the quantity of labor services provided. We know that consolidation has lengthened the average time crew spend on a vessel and hence total crew remuneration needs to be analyzed also.

Crew remuneration

Given that the market for crew has likely changed post-rationalization, what is the bottom line? How has total and average crew remuneration changed? This is a complicated question that has been the focus of a number of studies, including qualitative studies that rely on non-random samples and interviews,[13] as well as some relying on pre- and post-rationalization data.[14] Answering the question for the BSAI crab fisheries is complicated for several reasons. First, crab prices and abundance did not stay constant over the pre- and post period, and hence it is difficult to identify changes due to the program itself. In addition, it is not clear what metric to use to compare total or average crew pay. Should we look at pay per seasonal job? Per day?

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[12] Note that this observation would lead one to infer that higher producing boats lease more IFQ and thus have less "left over" to pay crew. But this is an incorrect way to view the mechanism linking lease prices and crew pay. High productivity vessels are no doubt leasing IFQ in order to increase productivity and utilize economies of scale. But high productivity boats must pay crew what is required to induce them to leave other jobs and what other competing vessels will bid for their specialized labor services, if relevant. The fact that shares on gross are adjusting is more likely due to the fact that constant crew shares across the fleet are no longer consistent with the new labor market for crew, which is tending toward pay that mimics outside labor opportunities, without risk premia associated with derby-based physical and financial risk. This homogenizing force is tending to bring pay rates in line. The fact that crew on high productivity boats earn more seasonal pay than on low productivity boats is now most likely due to that fact that the season is longer for these vessels, necessitating higher total season pay to compensate for longer time away from alternative occupations.

[13] Sepez, J., H. Lazrus, and R. Felthoven. 2008; and Macinko, 2010.

[14] Fina, M. 2009; Abbott, J., B. Garber-Yonts, and J. Wilen. 2010.

Despite difficulties of analyzing this question, the quantitative analysis appears to be consistent in several conclusions. The bottom line is as expected in one obvious way, namely that as overcapacity in vessels was eliminated with rationalization, there were fewer unique jobs on the fleet of remaining vessels. The number of unique jobs has been reduced roughly in proportion to the reduction in vessels. Overall, however, the amount of total labor days required to catch equivalent amounts of crab has not changed.[15] Thus total crew fishing days over the whole fleet have remained roughly constant. But the system is still in some flux, with quota consolidating, cooperatives adjusting, and fishermen still experimenting and discovering how to most efficiently harvest their quota holdings. Some vessels are fishing only their original quota granted, and conditions for crew have not changed much on these vessels. Other vessels have purchased or are leasing quota from retired vessel owners. These vessels are catching more crab and fishing longer seasons. Crew on vessels with more quota are paid more than on lower quota vessels but they must be paid more because crew need compensation for a longer commitment to fishing.

For the remaining fleet as a whole, the following conclusions emerge from data-based analysis in Abbott et. al. (2010):

- The number of unique jobs has declined in proportion to the consolidation of vessels.
- Most (97%) of the crew losses in red king crab came from exit of vessels. There has been a slight crew reduction per vessel post-rationalization in red king crab, driven mostly by vessels that had above-average crew sizes before rationalization.
- The amount of crew days **fishing** has not changed appreciably. **Total** crew days, including pre-season vessel preparation time and post-season return time have decreased, largely by eliminating the prep/steaming time associated with redundant vessels.
- Total seasonal incomes for remaining crew mostly increased with rationalization. The median crew received 66% more seasonal income in red king crab in the 3 years after rationalization (48% more for snow crab).
- These seasonal increases occurred even in the face of crab price declines. If we compare seasonal remuneration in pounds of crab paid each crew, "crab equivalent pay" rose 122% in red king crab and 109% in snow crab.
- Daily crew income (measured over total crew days committed) rose for the median crew member about 12% in red king crab (and declined by 5% in snow crab). This was also moderated by crab price declines. If daily income is measured in "crab equivalents", the median crew in red king and snow crab fisheries combined witnessed increases of 28% in daily remuneration.

[15] This was also the outcome in the British Columbia halibut fishery after introduction of IFQs. Measured in total crew days, fewer unique individual crew jobs were offset by the fact that each job involved more days per season (Wilen and Casey, 1997)

How do lease payments affect crew compensation?

As discussed above, this question gets the causality backwards because crew compensation determines lease payments rather than vice versa. Crew payments are determined by alternatives in other occupations and this, more than anything, sets a floor on wages that are necessary to induce crew to join a vessel. Lease payments get bid up to reflect net income, after crew payments and costs of other inputs have been determined, and hence they do not "crowd out" the money left over for crew.

Much of the discussion and confusion over this question arises out of the changing nature of the manner in which crew shares are computed. There is both anecdotal and data-based evidence that vessels that lease IFQs have adopted the end-of-season accounting convention of subtracting lease payments from gross revenues before crew shares are determined. But we should not confuse accounting conventions with the fundamental forces determining both crew payment and lease prices. On net, whatever accounting conventions are used to compensate crew, crew must be paid enough on average to induce them out of alternative employment alternatives. Outside labor markets anchor crew payments. In the long run, we would expect that accounting conventions, the amount of IFQ leased, and even the crew share itself to adjust so that crew are being paid the amount necessary to induce them to leave other occupations.

In the intermediate run, however, there is likely to be churning and disequilibrium in the crew payment and lease markets that reflect uncertainties about where the system will be settling in the long run. During this phase of disequilibrium (which may last for years) there will be different conventions employed for computing shares, different amounts leased and consolidated between vessels, and different surpluses generated and hence different lease prices. During this adjustment period, some vessels may subtract more or less than others before computing crew shares, some may compute a share different from others, and there may be variation in the treatment of owned/grandfathered quota. This means that the amount of remuneration per crew member per season will vary, just as it varied before rationalization. But valuable crew members who are underpaid will be bid away to owners willing to pay more for their services, and those that are overpaid will also face adjustments that bring payment closer to labor-market determined opportunities elsewhere. Similarly, IFQ and QS prices will fall if they overprice the true surplus value being generated, and rise if it is underpriced. It is difficult to quantitatively predict where this is headed, but market forces will continue to dictate the process by which crew are paid, IFQ are distributed, and IFQ prices and QS prices are determined.

What would happen if lease prices were capped?

Lease prices cannot practically be capped. There are similar instances, in other settings, where regulators attempt to constrain normal forces of supply and demand

to meet political and distribution objectives. Consider for example, rent control. Rent control attempts to legislatively mandate rental rates below market rates. But it cannot succeed because there are potential renters willing to pay the market rate that will bid the actual rental rate up to the actual market rate, generally by paying the landlord a fee "under the table". If market rental rates are $2500 per month and controlled rates are $2000, renters will compete for controlled apartments by offering upfront payments to have access to the rent controlled apartments. At the limit of the process, fees and other side payments are bid up to the point where the rent control advantage is eliminated. In this example, landlords will accept $500x12=$6000 from prospective tenant to lease a rent controlled apartment for a year. Rent controls may, temporarily, reduce actual rents when, for example, long term leases are let at prices that underestimate market rents. Landlords that are locked into such arrangements compensate in other ways, by reducing upkeep on the apartment or creating conflict with tenants in hopes of hastening their exit.

In a similar fashion, suppose that profitability dictates that crab IFQ should lease at $3.50 per pound but regulators attempt to "cap" lease prices at $3.00. Aside from questions about how such a regulation would be monitored and enforced, we would find exactly the same evasive behavior as with rent control, namely transfers, assignments, trades, payments in kind, and cash being paid to have access to $3.00 per pound crab quota that is actually worth $3.50.

What would happen if a reallocation of IFQ were granted to crew at varying levels?

Involuntary reallocations

Initial allocations of IFQ generate windfall gains to original grantees of quota. These windfalls are contentious and could, in principle, be allocated among a number of stakeholders, including even the general public, at the beginning of a program. But virtually all IFQs in fisheries in the world have granted most, if not all, IFQs to participants who have invested capital in the fisheries, namely vessel/license owners. Alaska is unique in its policies of granting QS to skippers.

Once a system is put in place, there is a substantial amount of buying and selling and leasing of quota that takes place as existing members exit or rearrange quota holdings, and as new fishermen enter.[16] This creates important differences between fishermen. Those who exit and sell their QS remove their windfall gains from the fishery forever, and these cannot be captured after-the-fact by changes in the program. Those who enter and/or consolidate QS on remaining vessels pay the full price to those who exit, namely the present value of future surpluses. So any policy that attempts to extract surpluses from fishermen who have bought new quota is essentially a tax. A policy that removes quota from existing fishermen to transfer to

[16] In New Zealand's extensive IFQ system, about 40% of the QS changed hands during the first 3 years (Newell et. al., 2005).

crew comes at the expense of some surpluses that were grandfathered in, but also at the expense of new purchasers, some of whom are likely to be indebted as a result of purchases. Hence a QS transfer aimed at fishermen grandfathered in risks putting new quota holders in financial jeopardy. For these reasons, allocations of QS are best decided and determined once and for all when a system is designed. As one moves farther away from the date of implementation, more turnover is expected, and involuntary reallocation becomes effectively a tax on the operating income of more and more vessel owners.

Involuntary reallocations may also generate unintended or perverse outcomes in some cases. If crew anticipates being granted some share of IFQs in the future, then (unless the qualification date is set in the past) there will be a scramble to qualify in the same way that announcing Alaska's halibut rationalization induced new entrants to try to accumulate catch records to qualify for IFQs. With crew, the scramble to qualify would cause them to bid down their own remuneration in order to guarantee themselves a crew "history" that would determine their windfall. In the limit of the process, crew anticipating a free reallocation would bid down their pay to an amount reflecting the value of the IFQs.[17]

Voluntary reallocations

An alternative to administratively removing QS from one group and reallocating to another is to use methods that are voluntary exchanges. The most obvious voluntary exchange is a market, whereby QS are purchased and transferred to crew. This kind of market already exists; crew are free to purchase QS already in principle. It might be seen desirable to encourage more crew purchase opportunities through subsidized loan programs or other schemes that ease the cost of entry.[18] Subsidies that are significant create shortages and a need to ration the subsidy funds since the benefits of the subsidy are a windfall. Some fisheries establish point systems or waiting lists that queue crew up according to accumulated experience, dependence on the fishery, and other criteria.

What would happen if ownership rules were changed so that QS owners either had to be active on a vessel or own some portion of an active vessel?

Rules that require on board participation generate perverse outcomes, including forcing old and sick QS holders to persist in dangerous fishing conditions. A question to ask is: what problem is such a policy attempting to address? The belief

[17] The practical difficulties of identifying crew to whom to grant an involuntary reallocation are considerable. As most studies of crew behavior have found (Macinko, 2010), tracking crew for any purpose is difficult, particularly when there is a need to identify crew from intense derby-style fisheries. The more time that elapses between a cutoff date and the reallocation program, the more difficult it is to identify the population of eligible crew.

[18] This was done in the Alaska salmon limited entry program in order to subsidize ownership of salmon permits by Alaska residents (Karpoff, 1984).

appears to be that "armchair" QS holders are the "cause" of high lease prices, and these high lease prices are the cause of low crew payments. Everything about this chain of reasoning is incorrect. Requiring QS holders to be onboard a vessel would not change the fundamental driver of lease prices, namely surplus values from fishing. Whether an owner is an absentee owner or an active owner does not appreciably influence the generation of surplus values from the fishing operation.

What would be the impact of vessel use caps?

Vessel use caps would spread total crab allocations over more vessels and hence create more jobs for crew, if by jobs we mean total numbers employed by fishery. But while there would be more jobs added by adding vessels, each vessel would be making fewer trips and employing crew for a shorter period. So each job would be shorter, each laborer would contribute to the landing of fewer crabs, and we would expect all existing crew in the current fishery to experience remuneration reductions, in order to generate jobs for new crew.[19]

Vessel use caps are only one of many schemes that one could devise that would create inefficiencies by moving the system back in the direction of the pre-rationalization configuration of vessels and other inputs. In the derby fishery there were very likely little or no surpluses generated, on average. Hence it would conceivably be possible to devise a portfolio of restrictions, caps, special rules and constraints which force the fishery back into a 3 day derby season. Lease prices would then be reduced to zero. But they would be zero precisely because the regulation-induced restrictions stifled efficiency and reduced surpluses to zero. This is always possible, as are other schemes that generate inefficiencies. But this seems like perverse policy since it reduces the value extracted from Alaska's resources. Many would argue to make the pie as big as possible, and then adopt policies, where desired, that ease the cost of one or another group acquiring access through voluntary exchanges.

What will the crab fishery look like in 20 years as it relates to crew, IFQ holders, and vessel owners?

The most important feature of rationalization programs is that they dramatically alter incentives. Rationalized fisheries morph from conditions that encourage extreme inefficiencies during race to fish conditions, to value-maximizing behavior after secure allocations are granted. Experience shows that fishermen innovate and

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[19] There are both equity and practical difficulties associated with this policy. Some vessels are small (90 feet) and carry 100,000 pounds of crab whereas larger vessels (160 feet) may be able to carry 500,000 pounds. Trip limits scaled to small vessels would impose inefficiencies on larger vessels and vice versa. In addition, red king crab vessels make 1-2 trips and snow crab vessels 3-4 trips per season on average post-rationalization. Because trips are discrete and because current trip numbers are small, trip limit policies would be inflexible with little room to spread regulatory costs over other margins of decisions.

learn very quickly how to fish their allocations most efficiently and in ways that deliver higher quality raw fish to processors.

It is likely that most of the important efficiency-improving changes have already been adopted in the BSAI crab fisheries. The big sources for the creation of surplus value have come from the elimination of excess costs associated with fleets attracted to race to fish conditions. These gains are reflected in the value of QS and IFQ and they indicate significant creation of new surplus value that did not exist prior to rationalization. The surplus value created in the BSAI crab fisheries is consistent with experience in other rationalized fisheries, most of which has shown that pre-rationalization waste is higher than one might have imagined.

With a reduction in vessels has come an inevitable reduction in jobs, approximately proportional to the contraction of vessel capital. But there has been a compensating change in the nature of remaining jobs. A larger number of very short jobs has been replaced by a smaller number of longer jobs. Total crew fishing days appears to have been unchanged by rationalization, and determined mostly by the number of crew days on the water needed to take given TACs. Crew compensation has increased when measured on a seasonal basis, as would be expected given that crew must commit more time than during derby fishing conditions.

The kinds of impacts of rationalization seem heavily dependent upon consolidation (and intensification of effort which increases CPUE). The ultimate extent of consolidation is governed by economies of scale, alternative uses for vessel capital, regulations, and processor/market conditions. If crab vessels had no other uses during the season, and there were no other constraints, we would expect consolidation to leave just the right number of vessels fishing full time over the window of crab availability required to harvest the TAC. But this degree of consolidation is unlikely because of regulations, the availability of alternative fisheries that may be more lucrative than crab, weather, and the need for excess capacity to handle peaks in TACs. The degree of consolidation is also influenced by cooperatives and coop/processor interactions. Cooperatives allow flexible transfer of IFQs so that harvests and deliveries are smoothed to efficiently use processor capacity. Smoothing moves the system toward its most efficient configuration of a more or less continuous harvest and flow of product through the processing system.

The main impacts on crew have already occurred, namely substitution of many compressed jobs for a smaller number of longer jobs. Any further regulatory tinkering will not change the fundamental forces operating to determine total crew compensation. Total crew numbers needed seem anchored by the time necessary to set and lift pots to harvest a given TAC. And total pay is anchored by the amount necessary to compensate crew for the full amount of time away from alternative employment opportunities. If consolidation were to be reversed, more crew would be added, but everyone would fish shorter seasons. Thus existing crew would experience reductions in seasonal pay in proportion to the pay needed to compensate new crew on jobs that would be shorter for everyone.

Controversies always emerge over who should get the surplus values that are generated by rationalization. Some argue that QS ought to be given to citizens in a lottery, others argue for auctions, and some argue that it is most efficient to grandfather existing participants.[20] But once QS are allocated, expectations of future surpluses get embedded into QS values, and expectations of current surplus values get embedded into IFQ lease prices. In most rationalization programs, a significant amount of the original allocation is transferred very early, and those early sales remove surplus values forever. Remaining surplus values are embedded in the asset values of QS who have chosen to remain rather than exit.

Ultimately in the long run, all originally-grandfathered QS will change hands and surplus values will be removed by exiting original grantees, taxed with capital gains and inheritance taxes, and invested in other fisheries, communities and alternatives. All new participants will have paid amounts for QS that reflect the expected future surpluses, and hence everyone will be making normal profits. In the long run, participants will be making normal profits regardless of the levels of prices that are paid to lease IFQ or purchase QS.[21] Any adverse events, including regulatory changes, that induce inefficiencies and reductions in surplus values will reduce QS and IFQ lease prices. But reducing lease prices and QS prices by generating inefficiencies will not improve crew conditions. And they will harm recent entrants who have paid prices that did not anticipate inefficiencies induced by regulatory changes. Moreover, regulatory changes and other events that are anticipated to reduce QS values will accelerate the exit of grandfathered participants and the removal of original surplus values.

What role is played by high QS and IFQ lease prices? Basically the market for QS and IFQ leases generates incentives to continue to innovate and create new value in a fishery. While much of this has already occurred, experience also shows that fishermen and processors are exceptionally innovative, always seeking new ways to operate their vessels, new ways to deliver high quality raw product, and ways to open up market niches and create new products that increase revenues. It is the hope that the payoff for innovation will be rewarded by increases in their "stake" in the industry through QS and IFQ values that keeps participants innovating and generating new surplus value. In the very long run, innovation determines the value that is generated by any set of resources, and that holds whether we are talking about a fishery, an industry, or a whole economy.

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[20] Anderson, T., R. Arnason, and G. Libecap. 2010.

[21] The easiest way to think about this is to assume that everyone has a mortgage to finance purchases of QS to gain entry into the fishery. From an accounting stance, everyone will be earning part of the surplus values generated by the fishery each year. But the prices of QS paid to enter will reflect the expected value of those surpluses, and mortgage payments will essentially equal the average annual flow of surplus values. So from the point of view of net profits after mortgage expenses, everyone will be earning only a normal return on their vessel capital and industry experience.

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UNITED FISHERMEN OF ALASKA

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November 30, 2010

Eric Olson, Chairman
North Pacific Fishery Management Council
605 West 4th, Suite 306
Anchorage, Alaska 99501-2252

RE: Agenda Item C-2(c) BSAI Crab Rationalization 5-year review.

Dear Chairman Olson,

United Fishermen of Alaska (UFA) is an umbrella organization which includes 38 fishing organizations from fisheries throughout the state of Alaska and the adjacent EEZ.

The UFA Board of Directors discussed the topic of the 5 year review of the Bering Sea Crab Rationalization at our recent meeting, and adopted a resolution in support of the status quo. I have attached a copy of the resolution for the NPFMC record.

Sincerely,

Mark Vinsel
Executive Director

Cc: Chris Oliver

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Resolution 2010-4

A RESOLUTION OF THE UNITED FISHERMEN OF ALASKA SUPPORTING STABILITY FOR THE COASTAL COMMUNITIES, HARVESTERS, AND PROFESSIONAL CREW DEPENDENT UPON THE BSAI CRAB CATCH SHARE PROGRAM DURING THE NPFMC FIVE YEAR REVIEW

WHEREAS, the BSAI Crab Catch Share Program (Program) was implemented five years ago with the primary goals of improving safety, conservation, and financial stability; and

WHEREAS, the Program has been working successfully to achieve the goals originally set out; and

WHEREAS, the Program has benefited the State of Alaska by providing protection for crab dependent communities; and

WHEREAS, the Program has benefited the State of Alaska through quota shares transferring to residents of Alaska from residents of Washington primarily due to purchases from the Community Development Quota Group and eligible crab community organizations; and

WHEREAS, the Program was the first catch share program to allocate IFQ to skippers; and

WHEREAS, entry opportunities for crew are now improved and less risky than before the Program; and

WHEREAS, the harvesters, through the arbitration system, have maintained their historic average percentage of the wholesale price; and

WHEREAS, the North Pacific Fishery Management Council has continued to improve and adapt the program to make it work more smoothly; and

WHEREAS, the major crab harvesting associations including the Alaska Crab Coalition, Crab Group of Independent Harvesters, and Alaska Bering Sea Crabbers all believe the program has been largely successful;

THEREFORE BE IT RESOLVED, that the United Fishermen of Alaska supports maintaining the status quo to provide stability for the coastal communities, harvesters, processors, and professional crew dependent upon the BSAI Crab Catch Share Program during the NPFMC five year review.

By UFA Board of Directors, September 30, 2010:

Arni Thomson, UFA President

Attest: Mark D. Vinsel, UFA Executive Director

CITY OF SAINT PAUL
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November 30, 2010

Mr. Eric Olson
Mr. Chris Oliver
North Pacific Fishery Management Council
605 West 4th, Suite 306
Anchorage, AK 99501

Re: Agenda Item C-2(c) -- Crab Rationalization 5-Year Review

Dear Mr. Chairman:

The City of Saint Paul Island is submitting these comments in response to the report that will be received by the North Pacific Fishery Management Council (hereinafter the "Council" or "NPFMC") regarding the five-year review of the BSAI Crab Rationalization Program (hereinafter the "Crab Program"). Since 2000, Saint Paul has been at the forefront of the development and strengthening of the community protection elements of the program and as a result can address this topic from a community perspective based on first hand experience.

The City believes that the Crab Program is working well and is, to date, achieving the objectives laid out by statute and regulation concerning community protections. The Crab Program is based on a carefully constructed balance between processors, harvesters, and communities, which protects the interests of all major participants in this fishery. For various reasons, specified in greater detail below, Saint Paul's economy is almost entirely dependent on the crab fisheries -- both the processing that takes place on shore side processors within the Saint Paul Harbor and the activities associated with the Bering Sea crab fleet.[1] Although crab

[1] For over a century, Saint Paul was not allowed to develop a commercial fishing industry due to the exclusive federal management of the commercial fur seal harvest. Then, in 1983, the U.S. Congress directed that the federal government's fur sealing operations be phased out. With fisheries being the only viable alternative to fur sealing on the Pribilofs, the community scrambled to develop the necessary fisheries-related infrastructure in the late 80's and early 90's with the support of the U.S. Congress and the State of Alaska. The 1981 collapse of the Bering Sea king crab fishery and the need by harvesters and processors to diversify from king crab into opilio crab provided Saint Paul with the opportunity to enter a major fishery. The Bering Sea crab fishing industry took advantage of Saint Paul's harbor and the community's considerable investments in fisheries-related infrastructure to initiate shore-side landings, processing, and vessel support services for the fleet. Saint Paul's proximity to the opilio crab grounds with the associated benefits of reduced fuel costs,

stocks continue to be low in comparison to their heyday in the 1990's, the Crab Program has ensured that some level of economic activity derived from this fishery has remained on Saint Paul and in the northern BSAI crab region.

The Crab Program came into existence after substantial deliberation at the NPFMC, and was then enacted by Congress and subsequently implemented by the pertinent agency, the National Marine Fisheries Service (NMFS), through a thorough rulemaking process involving extensive notice and comment periods. While there is widespread agreement that certain issues identified by the Council and the industry need to be addressed -- such as exemption to the regional landing requirements under certain circumstances and greater opportunities for crewmembers – the program according to past Council analysis is working well, has benefited the participants in this fishery, has had a salutary effect on the crab stocks and fishing grounds, and more importantly has resulted in greater safety to fishing vessels and crews.

I. The Impacts of the Collapse of the Opilio Crab Fishery on Saint Paul:

When in 1999 the Alaska Department of Fish & Game (ADF&G) announced a significant reduction in the Guideline Harvest Level (GHL) for opilio crab from approximately 192 million lbs. in 1999 to 28 million lbs. in 2000, our community was forced to undertake several urgent actions.

One of the first steps was to request, as an affected fishing community, that the Secretary of Commerce, under the authority extended to him by Section 312 (a) of the Magnuson-Stevens Fishery Conservation and Management Act, declare that a commercial fishery failure had occurred due to a fishery resource disaster. The first such determination was made by the Secretary on May 11, 2000, and due to the continued collapse of the opilio crab fishery has been extended by successive notifications from NMFS through the 2006 season.[2] This declaration allowed Saint Paul to tap into federal assistance in the first years of the fishery failure and provided the impetus for proceeding with the development of a rationalization

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time, deadloss, and safety risks, plus its fresh water reserves, its airport, and other support services, were extremely valuable to a non-rationalized, derby-style, fishery. The first crab processing plant was set up in 1989 and Saint Paul has been a primary processing center for crab since then. A significant number of floating processors have also frequented Saint Paul over the history of the opilio fishery. Icicle, Norquest, Trident, Stellar Seafoods, and others, owned floaters that have processed crab in the area. The processing and harvesting sectors clearly benefited from their relationship with Saint Paul and the considerable public and private investment on the Island. The community and the State also benefited. As a result, in the late 90's, Saint Paul was, after Unalaska, the largest generator of fisheries business tax in the State of Alaska.

[2] The City of Saint Paul's request for an extension of the Section 312 determination -- that a commercial fishery failure in the BSAI opilio crab fishery persists – to cover the 2007 and 2008 seasons, is pending, while the agency is evaluating modifications to Section 312 that would cap the number of years commercial fishery failures can be invoked.

program in the crab fisheries. It has also helped Saint Paul to obtain relief and negotiate better terms on various loan obligations assumed during the federal phase-out of the fur seal harvest in 1983.

On the rationalization front, the community -- with the support of the State -- played a key role in constructing the proper balance among processors, harvesters, and communities, known as "Three Pie." Critical from the community's perspective was that the US Congress, the State of Alaska, and the NPFMC recognized that the considerable federal, state, and municipal investments made on Saint Paul that proved invaluable to developing a commercially successful crab fishery in the Bering Sea, merited protection within the context of rationalization, in a manner similar to that extended to the harvesting and processing sectors. Since 1999, the City has been heavily involved supporting the Corps of Engineers' Saint Paul Harbor Improvements Project and the Small Boat Harbor Project, both of which have been completed at a cost of over $70 million in federal and local contributions. The project is entering its final construction phase. Any weakening of the community protection provisions, therefore, would potentially undermine decades of public and private investments oriented toward capitalizing on Saint Paul's unique location amidst the Bering Sea fisheries and servicing the commercial fishing industry.

II. "Three Pie" and the Benefits of Rationalization for Saint Paul:

Congressional approval of the Crab Program in January of 2004 set the stage for ending the derby style crab fishery and for the consolidation of harvesting and processing activity in the Bering Sea. As the main port in the designated northern region of the Bering Sea, Saint Paul has benefited from this program, even though crab stocks remain low and the community's revenues are still at 80% of what they were in 1999. While at present only three of the six BSAI crab fisheries are open (opilio, Bristol Bay Red King Crab, and Saint Matthew's Blue King Crab), regionalized deliveries to northern region processors have helped generate revenues of slightly more than $700,000 per year during the last ten years which have helped the City to survive until the stocks recover and new fisheries can be developed.

The City receives a portion of the State levied fisheries business tax on all crab delivered and processed at the Trident shore plant, the Icicle Seafood's floating processor, which is moored within the harbor seasonally, and the floating processors stationed within three nautical miles of Saint Paul Island.[3] The City also receives a 3% sales tax on crab delivered to processors inside the Saint Paul Harbor as well

[3] The fish tax is 3% for shore based facilities and 5% for floaters (see A.S. 43.75.015(a)). The state refunds 50% of the tax collected to cities located in unorganized boroughs and 25% to cities located within organized boroughs (A.S. 43.75.130(a)). Some floaters have negotiated to pay only 3% if they remain stationary for a season or part of a season.

as a sales tax on fuel and other supplies sold in the harbor. As a result of the fishery collapse, the total decrease in revenues to the City of Saint Paul on a yearly basis from 2004 to 2010 as compared to 1999, was approximately 80% (see chart on page 4).[4] This is almost directly proportional to the 85% decrease in the GHL from 1999 to 2000 and subsequent years. Several major areas of City revenues such as onshore and offshore processing, fuel distribution, harbor services, and local businesses continue to be depressed.

These losses were reflected in continued depressed revenues in several major areas of City revenues –onshore processor revenues, offshore processing, fuel distributors, harbor services, and local businesses – which have not risen to any significant degree from the first year of the fishery collapse in 2000. Those losses are summarized in the following chart as follows (rounded to the nearest thousandth dollar and percentage point):[5]

City of Saint Paul Sales and Fish Tax Revenues
(rounded to nearest thousandth dollar and percentage point)

Revenue										% Decline							
Source	1999	2000	2004	2005	2006	2007	2008	2009	2010	99-00	99-04	99-05	99-06	99-07	99-08	99-09	99-2010
Onshore Processing	782	113	178	191	194	123	413	425	289	86%	77%	76%	75%	84%	47%	46%	63%
Offshore Processing	1,935	298	272	230	135	332	577	389	373	85%	86%	88%	93%	83%	70%	80%	81%
Fuel Distributors	85	11	20	28	42	31	69	10	32	87%	76%	67%	51%	64%	19%	88%	62%
Harbor Services	759	78	69	94	91	24	213	63	155	90%	91%	88%	88%	97%	72%	92%	78%
Local Businesses	110	60	60	47	45	29	66	29	36	45%	45%	57%	59%	74%	40%	74%	67%
TOTAL	3,671	560	599	590	507	539	1338	916	897	85%	85%	84%	86%	85%	64%	75%	76%

The decline in revenues experienced by the City is indicative of the declines similarly experienced by privately held businesses in the community. These revenue declines have been felt directly by Saint Paul's 460 residents through loss

[4] The percentage figures cited in this paragraph and the accompanying chart are rounded to the nearest percentage point, and value data is rounded to the nearest $1,000.

[5] These figures do not include other revenue sources, which are not dependent on the condition of the Opilio crab harvests.

of jobs, loss of consumers, loss of the community day care facilities, and curtailment in air passenger, cargo and bypass services to the mainland. As of the date of this letter, the City of Saint Paul officially has 38 employees, down from 50 in early 2000. Many residents have moved off the Island due to lack of work and opportunities. The departure particularly hurts the long-term viability of the Island as many of those leaving are educated, skilled, and young.

Due to low quota levels, processing activity is at a fraction of what it was in the 90's. Nonetheless, the limited crab processing taking place on Saint Paul thanks to rationalization provides the economic basis for the local CDQ and IFQ halibut fishery as the local fishermen have no alternative location to process their halibut. CBSFA contracts with Trident at Saint Paul to custom process the halibut delivered by the local fleet. This fishery is a major source of employment and income for the community and, from 2006 to 2010 it generated income of over $3,000,000/year on average. This is significant for a small community. Furthermore, through its CDQ allocations, CBSFA has promoted economic activity on Saint Paul Island by working with the Trident plant to deliver its allocations of Bristol Bay Red King Crab (BBRKC) to the Trident processing facility, which represents over 40% of the BBRKC landed in the community.

CBSFA has also made considerable investments to acquire northern region PQS including in recent years from Yardarm Knot LLC. In addition to CBSFA's 20% opilio CDQ allocation (out of the 10% that is allocated to the CDQ program), CBSFA now owns approximately 14% of northern region opilio processing. All of these positive developments would not have been possible without the Crab Program.

Furthermore, some 300-400 non-residents work at the shore-based Trident processing facility during the crab season. In addition, transient fishermen who deliver crab are also important to the local economy. These individuals are an important group of consumers and source of business for the Community Store, the Tavern, the Package Store, and the Hardware Store. The local village corporation, TDX, obtains substantial revenue from other related services such as leasing land for freezer vans (crab), sales of fuel, and hotel services, as well as jobs. Businesses such as PenAir, Northland Services, and Delta Fuel are dependent on these flows of people and trade. The Crab Program has allowed these businesses to survive the reduced opilio quotas.

Finally, without the protections of the Crab Program the community would be unable to attract investment in the infrastructure, permitting, and other upgrades necessary to diversify into commercially valuable species such as pollock and cod, and survive in the long term. This would be an unfortunate development given that Saint Paul's greater proximity to the commercial fisheries that are

gradually moving into the northern Bering Sea, in addition to high fuel costs, makes the Island an ideal location to support the North Pacific industry.

III. Community Protections:

The community is now heading into the tenth year since the dramatic decline of the opilio stocks. However, the economic scenario would have been much worse if Saint Paul had not been protected by the Three Pie concept built into the crab rationalization program. The two main community protections are regionalization and the 90/10 A/B share split. Regionalization requires that the 90% A shares are matched and delivered to processors owning processor quota in designated regions proportional to historic delivery rates. The 10% harvester B shares are not subject to matching and can be delivered anywhere. Council analyses show that there are no significant landings of B shares in the northern region. The current 90/10 A/B share split and its required matching of harvester and processor A shares, therefore, ensures adequate levels of deliveries and processing activity in the northern region. Any proposal that would alter the 90/10 split and increase the number of B or C shares would result in Saint Paul losing deliveries to the southern region.

Similarly, the community has been engaged for four years in negotiations with the processing and harvesting sectors, as well as other communities to establish a contractual framework allowing for exemptions to Regional Landing Requirements under specific, unforeseen, circumstances. Recognizing that unforeseen natural or man-made events such as the ice-pack blocking entrance to a harbor or an oil-spill, may deprive harvesters and processors of a location to deliver and process crab, Saint Paul has been actively engaged in constructing a framework that would exempt the parties from having to comply with the Crab Program's regional landing requirements. However, Saint Paul understands that these exemptions will only be afforded under certain specific circumstances, and will require the qualifying parties to mitigate the need for an exemption and compensate, where appropriate, communities for the exempted crab amount. Saint Paul views this initiative as designed to strengthen and improve the Crab Program, including its community protection components, rather than creating an exception that will be used casually thereby undermining the Program.

Finally, community Rights of First Refusal (ROFRs) which are dependent on the current share structure, are another community protection that has reassured communities, and the ROFR-holders for each of those communities, of their rights in the Crab Program. For the past four years, Saint Paul has played a lead role with Council Staff and the crab industry in developing improvements that are designed to strengthen ROFRs. The Council will consider these improvements in the near future.

IV. Conclusion:

From Saint Paul's perspective, the Crab Program has been a success. It has allowed the community to maintain an important level of crab processing activity, which has in turn allowed a number of dependent fisheries and businesses to survive. In addition, the economic survival of the community thanks to the Crab Program has served as an impetus for continued public and private investment in the community. This investment will, overtime, allow Saint Paul to diversify and reduce its dependence on the various crab fisheries.

Aspects of the Crab Program that require strengthening and improvement have largely been addressed, or are in the process of being addressed, by a cooperative industry/Council process. Overtime these modifications being proposed through this process will result in a more effective, flexible, and responsive program. Any significant changes to the Crab Program, however, would destabilize the fishery and upset a delicately constructed balance among the sectors that have benefited or are protected by the program.

Sincerely,

Simeon Swetzof, Jr., Mayor
City of Saint Paul

cc: Linda L. Snow, City Manager, City of Saint Paul

Eric Olson, Chairman
NPFMC

Subject; BSAI Crab Rationalization 5 Year Review.

Mr. Olson, Members of the Council,
Crab Rationalization, a program enacted without due process, has been a boon to a handful of well to do entities and a bane to skippers, crew and fishing communities.

While hired lobbyists, (paid by the recipients of gifted crab quota) will tell you that this is a great program and is working well, the reality is, and has been, one of massive job loss, capitol flight, coercion against testifying crewmen, wonton waste of salable crab, captured markets, rapidly diminishing Total Allowable Catch, and loss of revenue by the fishing communities that housed the crab fleet and its pre-ratz participants.

Excessive quota share allocated to boat owning entities, in violation of national standards, excluded crew and shorted skippers

The first year the ADF&G estimated a mortality of 677,000 legal male crab due to high grading.

Safety, one of the two legal reasons for implementing the program has yet to be documented as better…how many injuries, percentagewise, are there as compared to prior to implementation? There is an obvious lack of data…

In review, this program is a failure unless you are a gifted allocation recipient or lobbyist.

Steve Branson
Crewmen's Association

North Pacific Fishery Management Council

201st Plenary Session — December 6-14, 2010
Anchorage, Alaska — Hilton Hotel
Fax: (907) 271-2817 Tel: (907) 271-2809

1st Public Comment of Stephen Taufen, Groundswell Fisheries Movement
Submitted by Fax, November 30, 2010

Agenda C-2(c.): Receive Report on BSAI Crab Rationalization 5-Year Review

Commerce Secretary Locke, Chairman Olson & NPFMC members:

Please find attached three pages of additional Tables that will aid Council members and staff in reviewing the Captain and Crew (C&C) Compensation issues, as part of the 5-Year Review. I will hopefully be submitting additional Public Comment on the record during the session.

Let is suffice for now to say that if the C&C component's historical share was 35% before CR privatization, then on the basis of a $1.1 billion initial market value, there was a takings from the C&C of (35% less 3%, times $1.1B) approximately $350 million. Since then, another $100 million, totaling a distributive income shift of over $450 million, to date. This has huge negative effects on U.S. tax coffers, regional spending and multipliers, community household incomes, and more.

This Council has knowingly and willingly participated in:

- Failures to adhere to National Standards of "fair and equitable" distributions of allocations, the award of excessive shares, and other violations of law.
- Subsequent active denial of any corrective Motion (or second) to address C&C losses.
- Failures to prosecute False Testimonies on the record, and to address known Coercion of C&C by IFQ holders.
- Negative Conflicts of Interest in the context of Regulatory Capture.
- Failure to put on record the expensive ethnographic crab crew study (Felthoven et al).
- Failures to maximize the net national (and state) benefits from the Crab Fisheries, by failing to ensure full transparency and accountability, as well as exploration of Abusive Transfer Pricing that allows foreign-owners to operate profitless 'hollow subsidiaries' within the Alaska geographical region.
- Failure to contain Leases from being taken off-the-top of trip settlements, before the computation of "adjusted gross revenues" – and failure to consider/adhere to the maritime laws regarding Lay Share rights of C&C, despite clear advice that such United States Codes should be taken into consideration just as NEPA and Executive Orders are, when formulating allocation-bent programs.
- Giving credence to IFQ-shareholder's creations of "Astroturf" fake grassroots groups.
- Among other wrongs...

If the Council had to adhere to MSAR (reauthorized) today, it would still have the problem of the unconstitutionality of the Alaska region not having a 2/3rds referenda process, as compared to the New England and Gulf states. But you've already done a great job at violating the Equality and Commerce clauses, and restraining trade.

The current report is highly deficient as to the types of statistical information. The attached tables illustrate only a few examples of how the data could have been used to do more meaningful analysis that should guide your decision making to reallocate shares to the C&C component. One means of doing that would be to set aside a block of quota for the public trust, under the State of Alaska – who could then lease it out on the provision that trip settlements adhere to Lay Share tenets and legal case history, and all "rents" are taken off after the computation of "adjusted gross revenues" – including a severance type rent for the State. But, you will not address any solutions, to date, let alone an innovative public trust.

Catch Shares are a carefully organized and executed neurosis, an outrageous hypocrisy on the National Standards of 'fair and equitable' distributions. The Council has repeatedly demonstrated adherence to this corporate-backed neurosis, and apparently does not care about the lack of credibility it shows, because this hive mentality is shared by NOAA and its national policy to institute more privatizations (catch share programs). Someday this assault on common senses must stop for common use resources, or our commercial fisheries and the family fishermen will be ruined forever.

It is time to make serious changes to the CR program. Thank you.

Stephen Taufen
P.O. Box 714
Kodiak, AK 99615
staufen@seanet.com

Attached – 3 pages of tables.

Bristol Bay Red King Crab - post ratz

Percentage Drop in Capt&Crew pay on average between quartiles:

2008	Mean Lbs. Harvested per Vessel	Mean pay to single crewmember	% of gross to captain/crew	Mean C&C Pay per Pound Harvested
3d Quartile	281,259	$ 45,426.00	21.80%	$ 0.1615
4th Quartile	436,847	$ 39,414.00	15.60%	$ 0.0902
		-13.2%		$ (0.0713)
	Equals: Percentage Drop in C&C/Harvest Lb.			**-44.1%**

2009	Mean Lbs. Harvested per Vessel	Mean pay to single crewmember	% of gross to captain/crew	Mean C&C Pay per Pound Harvested
3d Quartile	249,735	$ 31,528.00	19.70%	$ 0.1262
4th Quartile	358,570	$ 29,137.00	14.70%	$ 0.0813
		-7.6%		$ (0.0450)
	Equals: Percentage Drop in C&C/Harvest Lb.			**-35.6%**

Bristol Bay Red King Crab Ratz:

14,000,000 avg. harvest lbs.

2004 Captain & Crew % of Adjusted Gross			35.9%	Historical Participation Ratio
Less: Captains at 3%			-3.0%	C-Shares (approx.)
Net Property Taking of Capt&Crew Historical Shares			-32.9%	Decline
IF: IFQ Market Value/Share Set at	**$22.50**	$	315,000,000	
THEN: IFQ Takings from C&C =		$	**(103,635,000)**	
Plus: Annual Takings (est. avg.)	$ (12,000,000)			
Times: 5 years of program to date	5	$	**(60,000,000)**	
		$	**(163,635,000)**	
Averaged for # vessels fishing -	69	$	**(2,371,522)**	Denied pay to C&C per vessel

Bristol Bay Opilio Crab Ratz:

43,700,000 avg. harvest lbs.

2005 Captain & Crew % of Adjusted Gross			34.6%	Historical Participation Ratio
Less: Captains at 3%			-3.0%	C-Shares (approx.)
Net Property Taking of Capt&Crew Historical Shares			-31.6%	Decline
IF: IFQ Market Value/Share Set at	**$8.00**	$	349,600,000	
THEN: IFQ Takings from C&C =		$	**(110,473,600)**	In 2010 Lbs. level
Plus: Annual Takings (est. avg.)*	$ (8,470,000)			
Times: 5 years of program to date	5	$	**(42,350,000)**	
		$	**(152,823,600)**	
Averaged for # vessels fishing -	67	$	**(2,280,949)**	Denied pay to C&C per vessel

COMBINED TAKINGS FROM C&C to-date, BSK & BSS $ **(316,458,600)**

Bristol Bay Red King Crab - pre- & post-ratz

BSK Red

Per. Lb. Harvested -and- Percentage Drop in Capt&Crew pay as % of Gross

2004

NB: Table shows 55 boats per Quartile	Adj. No. Boats per Quartile - Approx.	2004 Capt. & Crew Pay % of Gross	Mean Lbs. Harvested	Est. Total Lbs. in Quartile		Price per Catch Lb. (COAR ex-vessel)	2004 Capt. & Crew equiv. $/Lb.	Total ex-vessel Value Est.	Capt. & Crew's Proportion of Total Ex-Vessel Value (est.)	Est. $/Lb. Harvested paid to Capt. & Crew
1st Quartile	52	35.20%	31,614	1,643,928		$ 4.69	$ 1.65	$ 7,710,022	$ 2,713,928	$ 1.6509
2d Quartile	52	34.50%	53,948	2,805,296		$ 4.69	$ 1.62	$ 13,156,838	$ 4,539,109	$ 1.6181
3d Quartile	52	36.70%	71,054	3,694,808		$ 4.69	$ 1.72	$ 17,328,650	$ 6,359,614	$ 1.7212
4th Quartile	52	36.30%	110,466	5,744,232		$ 4.69	$ 1.70	$ 26,940,448	$ 9,779,383	$ 1.7025
	Calculated total pounds involved -->			13,888,264		*$ 4.69*		$ 65,135,958	**$ 23,392,034**	***$ 1.6843***
	Actual Catch - in pounds			**13,889,047**	100.01%				35.9%	
					55					
					55.003					

Math Note: Adjusted No. of Boats from 55 down to 52 in order to make the total pounds add up to the actual harvest, when using the average (mean) lbs. harvested in each quartile.

2009

NB: Table shows 16/17 boats per Quartile	Adj. No. Boats per Quartile - Approx.	2009 Capt. & Crew Pay % of Gross	Mean Lbs. Harvested	Est. Total Lbs. in Quartile		Price per Catch Lb. (COAR ex-vessel)	2009 Capt. & Crew equiv. $/Lb.	Total ex-vessel Value Est.	Capt. & Crew's Proportion of Total Ex-Vessel Value (est.)	Est. $/Lb. Harvested paid to Capt. & Crew
1st Quartile	13	27.70%	92,251	1,199,263		$ 4.67	$ 1.29	$ 5,600,558	$ 1,551,355	$ 1.2936
2d Quartile	14	20.00%	184,818	2,587,452		$ 4.67	$ 0.93	$ 12,083,401	$ 2,416,680	$ 0.9340
3d Quartile	13	19.70%	300,835	3,910,855		$ 4.67	$ 0.92	$ 18,263,693	$ 3,597,947	$ 0.9200
4th Quartile	13	14.70%	512,418	6,661,434		$ 4.67	$ 0.69	$ 31,108,897	$ 4,573,008	$ 0.6865
	Calculated total pounds involved -->			14,359,004		*$ 4.67*		$ 67,056,549	**$ 12,138,990**	***$ 0.8454***
	Actual Catch - in pounds			**14,337,872**	99.85%				18.1%	
					16.5					
					16.476					

Math Note: Adjusted No. of Boats from 16/17 down to 13/14 in order to make the total pounds add up to the actual harvest, when using the average (mean) lbs. harvested in each quartile.

Reduction in C&C Portion:	Total $ reduction	Drop Per Lb.
	$ (11,253,044)	*$ (0.8389)*
	-17.8%	
% Drop on per Lb. basis to C&C =>		-49.8%

Bristol Bay Opilio Crab - pre- & post-ratz

BSS - Opilio

Per. Lb. Harvested -and- Percentage Drop in Capt&Crew pay as % of Gross

2005

NB: Table shows 36/37 boats per Quartile	Adj. No. Boats per Quartile - Approx.	2005 Capt. & Crew Pay % of Gross	Mean Lbs. Harvested	Est. Total Lbs. in Quartile		Price per Catch Lb. (COAR ex-vessel)	2005 Capt. & Crew equiv. $/Lb.	Total ex-vessel Value Est.	Capt. & Crew's Proportion of Total Ex-Vessel Value (est.)	Est. $/Lb. Harvested paid to Capt. & Crew
1st Quartile	32	32.40%	93,280	2,984,960		$ 1.81	$ 0.59	$ 5,402,778	$ 1,750,500	$ 0.5864
2d Quartile	33	36.10%	134,285	4,431,405		$ 1.81	$ 0.65	$ 8,020,843	$ 2,895,524	$ 0.6534
3d Quartile	33	35.80%	171,446	5,657,718		$ 1.81	$ 0.65	$ 10,240,470	$ 3,666,088	$ 0.6480
4th Quartile	33	34.00%	297,069	9,803,277		$ 1.81	$ 0.62	$ 17,743,931	$ 6,032,937	$ 0.6154
	Calculated total pounds involved -->			22,877,360		$ 1.81		$ 41,408,022	$ 14,345,049	$ 0.6270
	Actual Catch - in pounds			22,655,777	99.03%				34.6%	
					33					
					32.680					

Math Note: Adjusted No. of Boats from 36/37 down to 32/33 in order to make the total pounds add up to the actual harvest, when using the average (mean) lbs. harvested in each quartile.

2009/10

NB: Table shows 17/18 boats per Quartile	Adj. No. Boats per Quartile - Approx.	2009/10 Capt. & Crew Pay % of Gross	Mean Lbs. Harvested	Est. Total Lbs. in Quartile		Price per Catch Lb. (COAR ex-vessel)	2009/10 Capt. & Crew equiv. $/Lb.	Total ex-vessel Value Est.	Capt. & Crew's Proportion of Total Ex-Vessel Value (est.)	Est. $/Lb. Harvested paid to Capt. & Crew
1st Quartile	16	27.80%	300,835	4,813,360		$ 1.45	$ 0.40	$ 6,979,372	$ 1,940,265	$ 0.4031
2d Quartile	15	24.40%	512,418	7,686,270		$ 1.45	$ 0.35	$ 11,145,092	$ 2,719,402	$ 0.3538
3d Quartile	15	21.00%	736,305	11,044,575		$ 1.45	$ 0.30	$ 16,014,634	$ 3,363,073	$ 0.3045
4th Quartile	15	19.50%	1,311,810	19,677,150		$ 1.45	$ 0.28	$ 28,531,868	$ 5,563,714	$ 0.2828
	Calculated total pounds involved -->			43,221,355		$ 1.45		$ 62,670,965	$ 13,586,455	$ 0.3143
	Actual Catch - in pounds			43,193,971	99.94%				21.2%	
	Volume adjustment			1.91	15.5		If adj. to low 2004 harvest =		$ 7,126,265	
					15.490					

Math Note: Adjusted No. of Boats from 17/18 down to 15/16 in order to make the total pounds add up to the actual harvest, when using the average (mean) lbs. harvested in each quartile.

Reduction in C&C Portion:	Total $ reduction	Drop Per Lb.
	$ (758,594)	$ (0.3127)
Total Drop adj. for Volume =	$ (7,218,784)	$ (0.319)
	-13.0%	
% Drop on per Lb. basis to C&C =>		-49.9%

Prepared by Ste[illegible] Taufen 11/30/2010