

**draft**

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

For proposed

**Amendment 20**

To the Fishery Management Plan for

**Bering Sea and Aleutian Islands Crabs**

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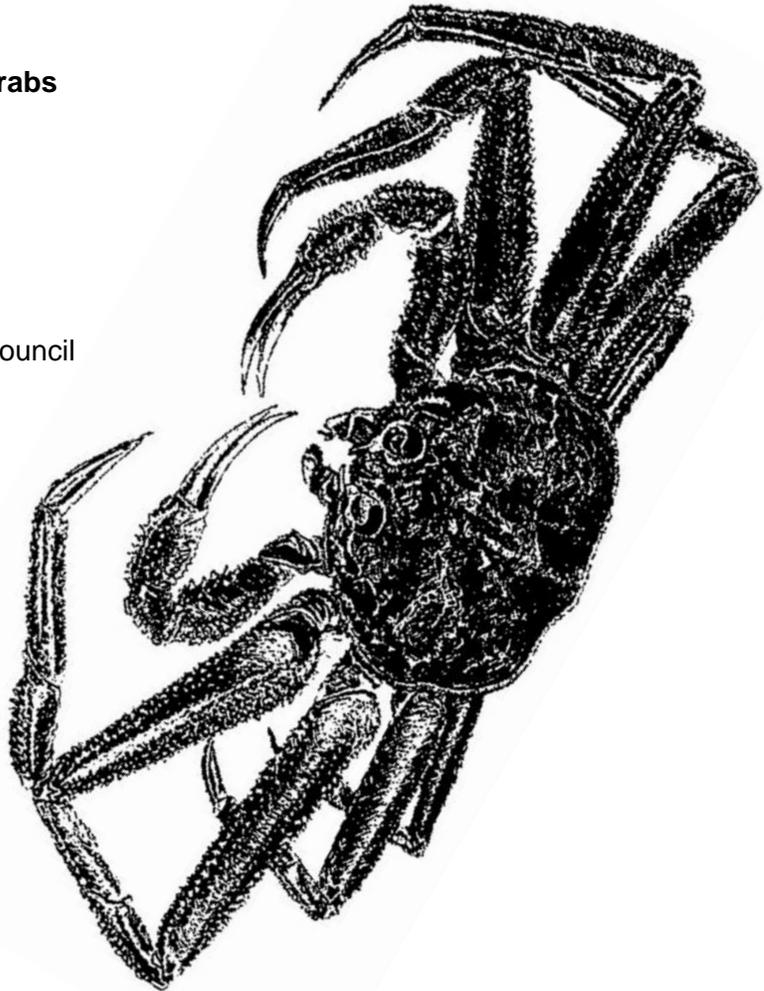
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# 1. Introduction

Under the authority granted to the State of Alaska by the Fishery Management Plan for Bering Sea and Aleutian Islands king and Tanner crabs (FMP), the State of Alaska has determined that the Bering Sea District Tanner crab (*Chionoecetes bairdi*) are in two geographically separate stocks, which should be managed as two separate fisheries. This action would determine the allocations of quota share (QS), processor quota share (PQS), individual fishing quota (IFQ), and individual processing quota (IPQ) under the Crab Rationalization Program for these two fisheries.

Management actions for these crab fisheries must comply with applicable Federal laws and regulations. Although several laws and regulations guide this action, the principal laws and regulations that govern this action are the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act, and Executive Order 12866.

This document contains a Regulatory Impact Review, a Regulatory Flexibility Analysis, and an Environmental Assessment of the alternatives for the allocation of QS, PQS, IFQ, and IPQ in the Bering Sea *C. bairdi* fisheries. Section 2 contains the Regulatory Impact Analysis, including the problem statement, a brief background, and a detailed description of the alternatives; the existing conditions in the fisheries, analyses the economic and socioeconomic effects of the alternatives, elements, and options; Section 3 contains the Environmental Assessment; and Section 4 contains the Regulatory Flexibility Analysis; Section 5 contains a brief discussion of the Magnuson-Stevens Act National Standards and a fishery impact statement.

This document relies heavily on the information and analysis contained in the Bering Sea Aleutian Islands Crab Fisheries Final Environmental Impact Statement/Regulatory Impact Review/Initial Regulatory Flexibility Analysis/Social Impact Assessment (NMFS/NPFMC, 2004). Throughout this analysis, that document is referred to as the “Crab EIS”. Additional information concerning the *C. bairdi* fishery, its management under the Crab Rationalization Program, and its impacts on the human environment are contained in that document.

## 2. Regulatory Impact Review

This chapter provides an economic analysis of the action, addressing the requirements of Presidential Executive Order 12866 (E.O. 12866), which requires a cost and benefit analysis of federal regulatory actions.

The requirements of E.O. 12866 (58 FR 51735; October 4, 1993) are summarized in the following statement from the order:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 further requires that the Office of Management and Budget review proposed regulatory programs that are considered to be “significant”. A “significant regulatory action” is one that is likely to:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this Executive Order.

## **2.1. Problem Statement**

The Council has developed the following problem statement defining its purpose for allocating QS, PQS, IFQ, and IPQ for two separate *C. bairdi* stocks:

Under the Fishery Management Plan for Bering Sea and Aleutian Islands King and Tanner crabs (FMP), the State of Alaska, Department of Fish and Game (ADF&G) has management authority for certain aspects of the Bering Sea/Aleutian Islands crab fisheries. Under the FMP, the State of Alaska is authorized to make changes in management subject to criteria defined in the FMP (category II measures), including adjustment of district and subdistrict boundaries for the purposes of managing reasonably distinct stocks of crab. As a part of their management of Bering Sea District *C. bairdi*, ADF&G has determined that two geographically separate *C. bairdi* stocks inhabit the Bering Sea grounds that have historically supported the Bering Sea *C. bairdi* fishery. ADF&G has determined that these two stocks, one east of 166° W longitude and the other west of 166° W longitude should be managed separately. The Alaska Board of Fisheries has approved a management plan that directs ADF&G to manage the Bering Sea District *C. bairdi* as two separate stocks, east and west. The Council action to rationalize *C. bairdi* in the Bering Sea did not distinguish the management of these separate stocks. This action is to consider alternatives for the allocation of QS, PQS, IFQ, and IPQ for these separate fisheries. The Council intends to develop an allocation that is fair and equitable.

## **2.2. Background**

In January 2004, the U.S. Congress amended the Section 313(j) of Magnuson-Stevens Act to mandate the Secretary of Commerce implement the Crab Rationalization Program for the Bering Sea and Aleutian Islands crab fisheries developed by the North Pacific Fishery Management Council (the Council), in motions from June 2002 to April 2003, plus any program amendments adopted by the Council. On March 2, 2005, the Secretary issued regulations to establish the Crab Rationalization Program (70 FR 10174). Crab fishing will begin under this Program on August 15, 2005.

The FMP establishes criteria for the management of certain aspects of the BSAI crab fisheries by the State of Alaska (the State). Under this authority, the State has determined that Bering Sea *C. bairdi* should be managed as two separate stocks; one east of 166° W longitude, the other west of 166° W longitude. Under the Crab Rationalization Program, QS, PQS, IFQ, and IPQ will be issued for one *C.*

*bairdi* fishery. The proposed action analyzed in this document would amend the Crab Rationalization Program, establishing allocations of harvesting and processing shares for these separate stocks.

The eastern Bering Sea *C. bairdi* fishery has been closed since 1997 due to low stock abundance. The fishery will reopen once the abundance levels increase to established thresholds for two consecutive years. As discussed in section 3.3.2, managers do not predict stock abundance to increase above threshold levels in the near future.

### **2.3. Description of the Alternatives**

The Council has identified the following two alternatives for making the allocations to the two Bering Sea *C. bairdi* fisheries:

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For the allocation of harvest shares:

1. Make two equivalent allocations of QS (one for each fishery) based on all of a person's *C. bairdi* history during the qualifying years (regardless of where those harvests occurred). This structure would have two QS pools, one for each of the fisheries.

*For example, if a person has 1% of the historic harvests in Bering Sea C. bairdi in total he would receive 1% of the west QS and 1% of the east QS. These QS would each yield IFQ in their respective fisheries.*

2. Make two allocations of QS (one for each fishery) with the allocations based on where harvests occurred. Harvests east of 166° W longitude would yield an allocation of QS in the fishery east of 166° W longitude. Harvests west of 166° W longitude would yield an allocation of QS in the fishery west of 166° W longitude. This structure would have two QS pools, one for each of the fisheries.

*For example, if a person had 1% of the historic harvests in the west and 2% of the historic harvests in the east, he would get 1% of the west QS and 2% of the east QS. These QS would yield IFQ in their respective fisheries.*

For the allocation of processing shares:

1. Make two equivalent allocations of PQS (one for each fishery) based equally on a company's qualified Bering Sea *C. opilio* processing history and qualified Bristol Bay red king crab processing history (regardless of where harvests that led to those landings occurred). This alternative would result in two PQS pools, one for each fishery.

*For example, if a company processed 3% of the qualified landings of Bering Sea C. opilio and 1% of the qualified landings of Bristol Bay red king crab, it would receive 2% of the west C. bairdi PQS and 2% of the east PQS. These PQS would each yield IPQ in their respective fisheries.*

2. Make one allocation of PQS for the Bering Sea *C. bairdi* fishery based equally on a company's qualified Bering Sea *C. opilio* processing history and qualified Bristol Bay red king crab processing history (regardless of where harvests that led to those landings occurred). This single type of PQS would yield IPQ that can be used for landings from either

fishery (i.e., IFQ west of 166° W longitude or IFQ east of 166° W longitude). This alternative would result in one PSQ pool that would yield IPQ that could be used in either *C. bairdi* fishery.

*For example, if a company processed 8% of the qualified landings of Bering Sea C. opilio and 12% of the qualified landings of Bristol Bay red king crab, it would receive 10% of the C. bairdi PQS. This PQS would yield IPQ that could be used to process C. bairdi crab from either the west or the east district. So, if the general fishery subject to the 90/10 split in the east district opened with a TAC of 12,000,000 pounds and the general fishery subject to the 90/10 split in the west district opened with a TAC of 8,000,000 pounds, this company would receive 10% of the 18,000,000 pound C. bairdi IPQ allocation (1,800,000 pounds of IPQ). These IPQ could be used for landings of Class A IFQ from either the east or the west fishery. If only one of the two fisheries were opened, IPQ would be issued for that fishery in the amount determined by applying the 90/10 split.*

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## **2.4. Existing conditions in the fishery**

### **2.4.1. Management of the fisheries**

This section summarizes the issues concerning the current management of the *C. bairdi* fisheries relevant to the economic impacts of the choice of options under this action. A more complete discussion of management issues (with greater attention to the effects of management on the physical and biological environment) appears in 3.3 of the environmental assessment below.

The FMP establishes a structure that categorizes management measures by management authority. Management is shared with the State of Alaska, to draw on State expertise concerning certain measures. Category 1 measures are those that are inherent Federal responsibilities under the Magnuson-Stevens Act and can only be amended through FMP amendments. The FMP establishes a framework (or criteria) for Category 2 measures that guide State decision making on those measures. Category 2 measures may be developed by the State Board of Fisheries to the extent permitted by the framework. Category 3 measures are under the discretion of the State without FMP framework. Changes to management measures by the State are through the Board of Fisheries process.

Under the FMP Category 2 measures, the State of Alaska is authorized to make adjustment of district and subdistrict boundaries for the purposes of managing reasonably distinct stocks of crab. Although the State currently manages *C. bairdi* in the Bering Sea as two stocks, historically the State managed *C. bairdi* in the Bering Sea as a single stock. A complete description of the development of the management of *C. bairdi* in the Bering Sea is provided in section 3.3.3. The federal Crab Rationalization Program comports with the former single stock management. In the Crab Rationalization Program, QS would be allocated to harvesters (including license holders and captains) and PQS would be allocated to processors based on historic harvesting and processing. If the stock reaches a level at which the State determines a harvestable surplus is available, allocations of IFQ and IPQ would be made to the holders of QS and PQS, respectively. Each holder of *C. bairdi* QS would have received an allocation of IFQ, in an amount of pounds so that the person would be permitted to harvest a percentage of the harvestable surplus allocated to the primary fishery<sup>1</sup> equal to the percentage of the QS pool held. Similarly, each holder of PQS would receive an allocation of IPQ, in an amount of pounds so that the person would be permitted to receive and

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<sup>1</sup> The primary fishery is the fishery after the allocation to CDQ groups.

process a percentage of the harvestable surplus for which processor shares are allocated<sup>2</sup> equal to the holder's percentage of the PQS pool. The current management provides for single pools of QS and PQS, which in turn yield single pools of IFQ and IPQ, without regard to the two separate stocks. The current allocations are not consistent with management of the species as two stocks.

### 2.4.2. The harvest sector

Under the Crab Rationalization Program, harvest sector QS allocations are made to two groups of historic participants – License Limitation Program (LLP) holders and captains. Ninety-seven percent of the initial QS pool is allocated to LLP holders with each participant receiving an allocation based on the annual average percent of the qualified catch by vessels associated with the LLP (i.e., harvests that led to the allocation of the LLP in this case). Qualified catch is all catch made by permanent LLP holders in the seasons from the 1991/2 season to the 1996 season, with each participant using only the best 4 of these 6 seasons. Holders of an LLP endorsed for use on a catcher processor would receive catcher processor shares for catch processed on board the harvesting vessel.

Captains would be allocated a separate class of shares (C shares) based on historic participation as a State interim use permit holder in the fishery. To be eligible for an allocation a person must have historic participation in at least 3 of the qualifying seasons (seasons from 1991/2 to 1996) and recent participation demonstrated by landings in 2 of the 3 seasons prior to June 2002 in the Bristol Bay red king crab fishery, the Bering Sea *C. opilio* fishery, or one of the Aleutian Islands golden king crab fisheries. Each captain would receive an allocation based on the average annual percent of the qualified catch by the captain, where qualifying catch is all catch by eligible captains from the 1991/2 season to the 1996 season, with each participant using only the best 4 of these 6 seasons. Catcher processor captains would receive catcher processor C shares for catch processed on board the harvesting vessel.

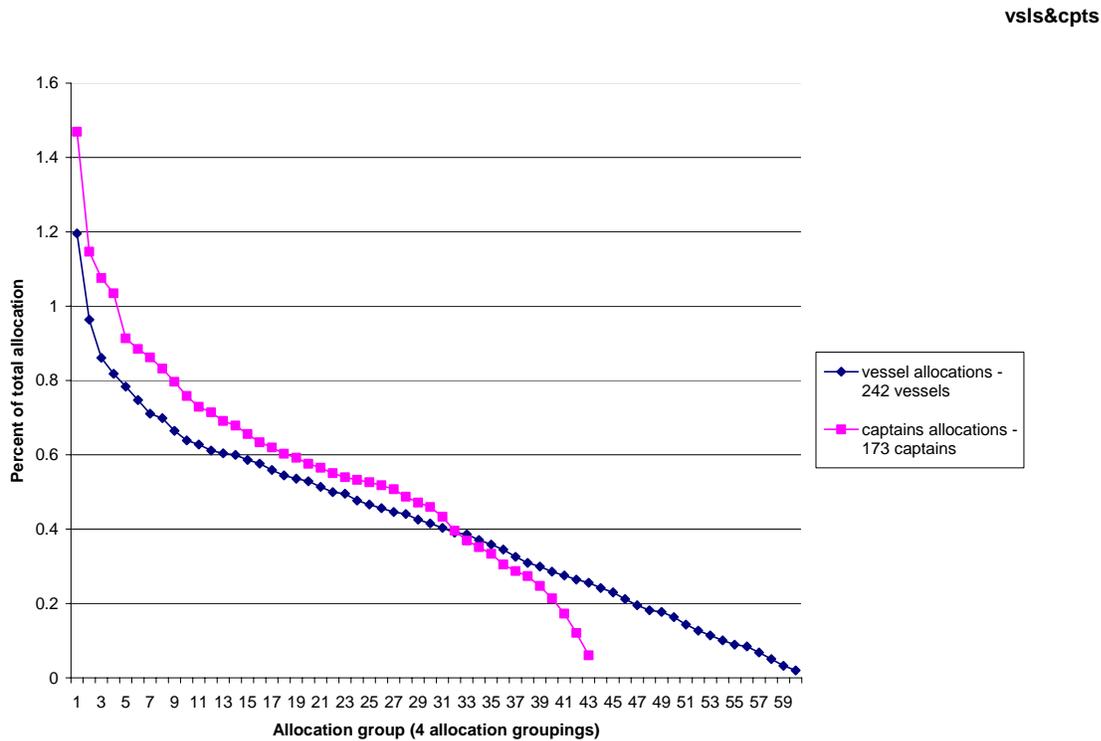
Allocations to LLP holders were estimated on a vessel basis, because LLPs were not issued at the time of the qualifying period, using fish ticket data. Since many LLP adjudications were pending at the time the data were compiled, only vessels that met all three LLP requirements for an LLP are included in the estimation. In addition, some provisions in the rationalization program allow persons to receive allocations based on the history of a vessel that did not meet LLP requirements. These vessel histories are omitted from the allocation estimates. Allocations are therefore underestimated in this analysis. The extent of the underestimation is uncertain. Allocations to captains were also estimated using fish ticket data. The allocations to both LLP holders and captains are shown in Figure 1 below. To protect confidentiality, the allocations are shown in groups of 4 vessels, with vessel groupings made in descending order from the largest estimated allocation, to the smallest allocation. The last and smallest grouping contains between 4 and 7 estimated allocations, consistent with confidentiality rules. The estimated allocation shown for each vessel group is the average allocation to members of that group. Allocations are shown as shares of the total harvest allocation. The legend shows the total number of vessels that would receive an allocation in each fishery. Because allocations are averages, it is possible, particularly in the grouping with the largest allocation, that the largest allocation to a single vessel is substantially different from the average of those vessels within the grouping.

From the figure, it is apparent that captains allocations are more consolidated than those to vessels, in part because approximately one-quarter fewer captains qualify for an allocation. This seems intuitive given that the *C. bairdi* fishery has not opened for the past several years and captains may be more likely to come and go from the fishery than vessels.

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<sup>2</sup> Generally, IPQ are allocated for only 90 percent of the primary fishery catcher vessel allocation. In the first three years of the program, however, IPQ will not be allocated for 90 percent of the captain share catcher vessel allocation.

Figure 1. Estimated allocations to LLP holders and captains in the Bering Sea *C. bairdi* fishery.



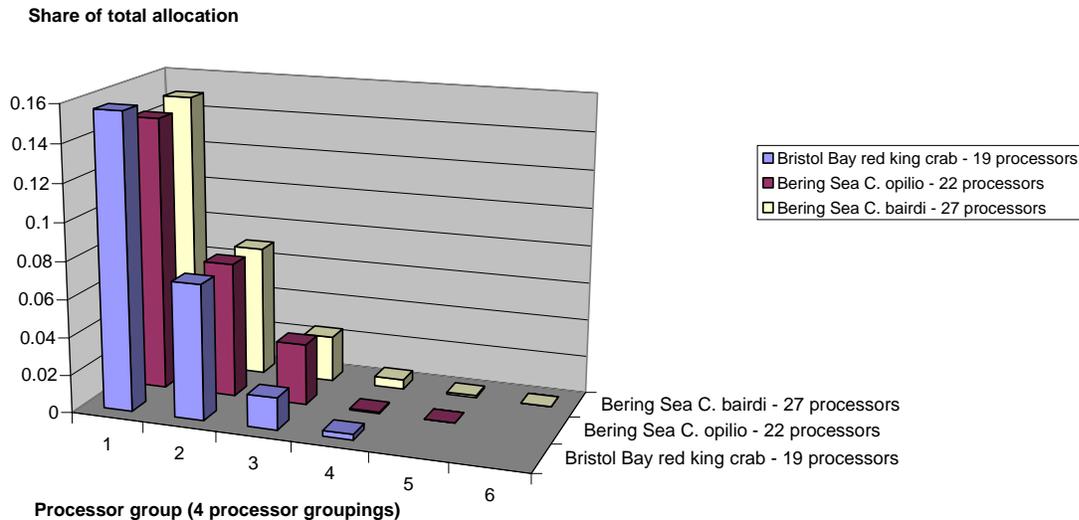
Source: NPFMC Crab rationalization database (Version 1).

Under the existing allocations, 10 catcher processors would receive approximately 5.9 percent of the initial allocation. The median catcher processor allocation would be approximately one-half of one percent.

### 2.4.3. The processing sector

Under the Crab Rationalization Program eligible processors will be allocated PQS based equally on their allocations in the Bristol Bay red king crab and Bering Sea *C. opilio* fisheries. Any processor that processed crab in 1998 or 1999 or that processed Bering Sea *C. opilio* in all years from 1988 to 1997 and invested in excess of \$1 million in processing equipment and improvements after 1995. Allocations of Bristol Bay red king crab and Bering Sea *C. opilio* are based on processing during 1997 to 1999, inclusive. Figure 2 shows the distribution of processing allocations under the current motion. As with harvest allocations, these allocations are shown in groups of 4 to protect confidentiality. The smallest allocation shown is the average for between 4 and 7 processors, depending on the number of allocations in the fishery. Because allocations are averages, it is possible, particularly in the grouping with the largest allocation, that the largest allocation to a single vessel is substantially different from the average of those vessels within the grouping. The four largest processor allocations average approximately 15 percent and are double the average of the next four allocations. No processor would receive an allocation in excess of the 30 percent use cap.

Figure 2. Estimated allocations to processors in the Bristol Bay red king crab, Bering Sea *C. opilio*, and Bering Sea *C. bairdi*.



Source: NPFMC Crab rationalization database (Version 1).

#### 2.4.4. Ex vessel pricing and harvester/processor relationships

Since the current allocations are inconsistent with the management of the *C. bairdi* as two stocks, the description of pricing and harvester/processor relationships under current management provided here is general relationship that will develop under the management program. As such, the description is intended to provide a background on the structure of the program that may be used to consider the effects of the different allocations under consideration.

Relationships between harvesters and processors are likely to be shaped by the arbitration system and the Class A harvest share/processor share landing requirements. Although the arbitration system may not be used to set terms of deliveries, the market report and advisory formula that are generated by the arbitration system are likely to have a great influence on price negotiations. To use the arbitration system a harvester must commit deliveries to a processor – establishing a share match between the harvester’s Class A IFQ and a processor’s IPQ – and initiate a binding arbitration proceeding in advance of the season opening. This requirement can be expected to lead holders of shares in both sectors to define delivery terms for their shares prior to the season opening. In the short run, trades of IPQ between processors and intercooperative trades of IFQ should facilitate matching of IFQ and IPQ. Over time, it can be expected that relationships among harvesters and processors will solidify, as harvesters and processors adjust their QS and PQS holdings to establish long term relationships.

Historic prices will be the starting point for the formula price, as the arbitration standard requires the formula to establish a price that preserves the historic division on revenues in the fishery while considering other relevant factors (such as delivery location and quality of landings). Table 1 shows the historic ex vessel prices for *C. bairdi*. Since the fishery has not been open for several years, prices for

recent years are unavailable. Although not perfect substitutes, price trends for other species may provide some information concerning possible market changes for *C. bairdi*. Table 1 shows ex vessel prices for Bristol Bay red king crab and *C. opilio*. Prices for Bristol Bay red king crab are typically much higher than the *C. bairdi* prices, averaging more than double the *C. bairdi* price. In 2001, 2002, and 2003, the average ex vessel prices in the Bristol Bay red king crab fishery were approximately \$5.20, \$6.50, and \$5.60, respectively (ADF&G, 2004). The price for *C. opilio* (likely the closest substitute) is typically less than the *C. bairdi* price, but prices for these two species are typically closer together, often one dollar or less apart. In 2001 and 2002, *C. opilio* ex vessel prices averaged approximately \$1.50 per pound, while in 2003, the price averaged slightly more than \$1.80 (ADF&G, 2004).

Table 1. Ex vessel prices for Bering Sea *C. bairdi*, Bristol Bay red king crab, and Bering Sea *C. opilio*

Fishery	Season	Total pounds	Percentage of pounds priced	Total ex vessel gross revenues (\$)	Average ex vessel price (\$/lb)
Bering Sea <i>C. bairdi</i>	1991-1992	25,177,190	28.4	11,968,818	1.676
	1992-1993	30,354,794	76.2	35,208,809	1.523
	1993-1994	14,524,022	74.4	19,370,649	1.794
	1994-1995	47,003,122	88.5	22,811,242	3.682
	1995	3,831,529	74.9	7,958,508	2.773
	1996	1,754,467	87.3	3,823,354	2.497
Bristol Bay red king crab	1992	7,186,419	48.4	17,279,406	4.965
	1993	13,053,109	10.5	5,241,765	3.828
	1994	7,897,131	97.5	30,908,556	4.013
	1997	8,493,704	96.9	26,821,854	3.258
	1998	12,634,107	97.6	32,184,792	2.612
	1999	10,018,299	96.2	60,357,026	6.262
Bering Sea <i>C. opilio</i>	2000	7,172,614	90.7	31,271,920	4.807
	1992	259,777,128	84.0	109,075,160	0.500
	1993	187,346,715	85.7	104,157,710	0.649
	1994	126,126,831	87.4	138,077,985	1.253
	1995	66,087,115	88.6	142,271,956	2.429
	1996	54,738,161	91.3	66,295,848	1.326
	1997	106,126,849	97.0	80,851,245	0.785
	1998	224,132,005	97.0	122,044,686	0.561
1999	172,639,663	99.8	151,841,907	0.881	
2000	28,318,872	97.1	50,748,270	1.846	

Source: NPFMC Crab Rationalization Database, Version 1.

#### 2.4.5. Product markets and first wholesale prices

Most of the *C. bairdi* harvested from Alaska is processed into shellfish sections. A relatively small portion of the catch is sold as whole crab. Table 2 shows first wholesale prices for various these two product forms from 1991 to 2000. Table 3 shows production of those various product forms during the same time period. In addition, those tables show first wholesale prices for red king crab and *C. opilio* for comparison. The most reliable source for this information, Commercial Operators Annual Reports, does not separate production by fishery. As a result, the red king crab data include information from fisheries other than the Bristol Bay red king crab fishery. Also, small amounts of *C. bairdi* are provided for the years 1996 to 2000, when the Bering Sea fishery was closed. These data are from processing activity from other, smaller *C. bairdi* fisheries in Alaska. Prices have not followed a clear trend during this time period.

For *C. bairdi* and *C. opilio* prices appear to have reached a peak in the mid 1990s and declining slightly since then.

Table 2. First wholesale prices of red king crab, *C. bairdi*, and *C. opilio* products (1991-2002).

Species	Product	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Red king crab	Shellfish Sections	6.57	8.24	7.43	11.90	10.01	8.53	6.15	5.52	11.25	9.11
	Whole	6.47	9.35	6.64	5.75	5.73	4.59	6.42	3.83	10.69	7.74
<i>C. bairdi</i>	Shellfish Sections	3.56	3.44	3.61	6.01	7.04	5.33	5.27	4.81	4.23	5.83
	Whole	3.72	3.98	3.88	5.42	6.06	3.56	2.95	2.95	3.71	3.33
<i>C. opilio</i>	Shellfish Sections	1.80	1.88	2.43	3.57	5.28	3.25	2.13	2.03	2.92	4.16
	Whole	1.88	1.79	1.84	3.23	5.38	1.67	1.36	2.05	1.06	-

Source: Commercial Operator's Annual Reports (1991-2000)

Note: The average price for each species included three product forms (shellfish meat, shellfish sections, and whole crabs). Those products were not always broken out separately in the table because of confidentiality issues.

Table 3. Production of red king crab, *C. bairdi*, and *C. opilio* products (1991-2002).

Species	Product	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Red king crab	Shellfish Sections	10,604	6,358	11,274	1,716	1,006	6,009	5,442	9,118	6,875	5,012
	Whole	636	335	107	124	152	81	51	114	135	63
	Total	11,240	6,694	11,381	1,841	1,158	6,091	5,493	9,232	7,010	5,075
<i>C. bairdi</i>	Shellfish Sections	23,829	23,516	16,359	11,744	4,479	2,297	1,071	1,335	1,078	817
	Whole	1,277	2,222	1,006	624	190	142	114	314	40	29
	Total	25,107	25,738	17,365	12,368	4,669	2,439	1,185	1,649	1,118	847
<i>C. opilio</i>	Shellfish Sections	168,399	179,713	136,910	83,164	40,428	39,576	184,993	156,562	114,186	18,980
	Whole	9,969	6,049	318	2,096	2,127	347	133	373	1,287	-
	Total	178,368	185,762	137,229	85,260	42,555	39,923	185,127	156,935	115,473	18,980

Source: Commercial Operator's Annual Reports (1991-2000)

## 2.4.6. Community and social conditions

The Crab EIS provides a comprehensive description of the existing community and social conditions arising out of processing under the existing management and an analysis of the effect of Crab Rationalization Program on communities and social conditions. These descriptions and analysis are incorporated by reference. To the extent permitted by rules protecting confidentiality, specific community allocation information is presented here.

### Harvesting

Under the Crab Rationalization Program, 242 vessels are estimated to receive allocations in the Bering Sea *C. bairdi* fishery. Table 4 shows allocations by community of recipient, where communities were identified using the CFEC vessel owner files. As the table shows most of the recipients of allocations in the program are from the Seattle metropolitan area. Kodiak vessel owners also will collectively receive a substantial portion of the initial QS allocation. The remainder of the allocation will be made to residents of other communities in Washington, Alaska, and Oregon, with slightly more than 2 percent going to residents of other states. Catcher processor owners from Seattle, Kodiak, and Anchorage are estimated to receive allocations under the program. Confidentiality limitations prevent the disclosure of any information concerning the regional distribution of allocations to catcher processors.

Table 4. Allocations to vessels by community.

Community	All history	
	Number of vessels	Sum of allocations
Anchorage	8	2.2
Homer	5	2.2
Kodiak	28	11.5
Other Alaska	12	2.8
Seattle - CSMA	141	59.7
Other Washington	18	9.1
Newport	12	4.7
Other Oregon	12	5.6
Other State	6	2.1
Total	242	100.0

Source: NPFMC Crab rationalization database (Version 1).

## Processing

Although 27 processing entities will receive allocations of PQS under the program, no information concerning the distribution of these allocations across communities can be provided because few communities have four or more processing entities, necessary for the release of information.

## 2.5. Effects of the alternatives

### 2.5.1. Effects of the harvest sector alternatives on participants

Since separate allocations of harvest shares are made to license holders and to captains in the fishery, the analyses of impacts of those allocations are separated in this section.

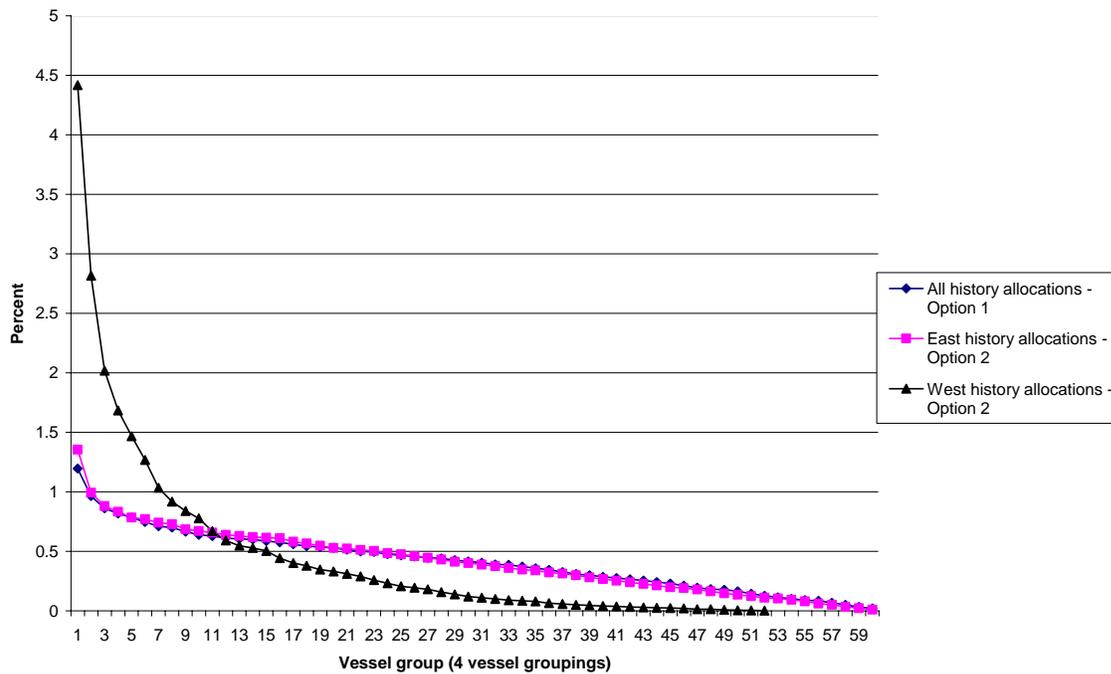
#### Harvest allocations to LLP license holders

The two options are under consideration for the allocation of shares to LLP license holders. Under the first, each eligible license holder would receive two equal allocations, one for each fishery, based on all qualified catch history in *C. bairdi* fishery, regardless of the location of the harvest. In the tables and figures that follow allocations based on this option are referred to as “all history allocations”. Under the second option, each eligible LLP holder would receive an allocation for a fishery based on qualified catch in the management area. So, a person with qualified catch history in only the east would receive an allocation only in the east fishery. Since two different allocations must be calculated under this option, the allocations are referred to as the “east history allocation” and the “west history allocation,” under which allocations are based on the location of harvests. shows the estimated allocations to LLP license holders under the two allocation options.

Table 5 shows simple statistics concerning those allocations, while Table 6 shows the number of allocations greater than 2.5 percent and 1 percent of the LLP holder QS pool. As the figure and tables show the allocations in the west are less concentrated than the allocations in the east, as 31 fewer LLP holders have qualified history in the west. So, if the allocations are made based on location of harvest (under Option 2), the size of east/west allocations will differ substantially in some cases with some participants being left out of the allocation in the west entirely. In addition, one person would be left out of the east allocation under the location based option.

Figure 3. Estimated allocations to LLP license holders.

vsls



Source: NPFMC Crab rationalization database (Version 1).

Table 5. Simple statistics for estimated allocations to LLP holders.

	Number of allocations	Mean allocation	Median allocation	Average of four highest allocations
All history allocations - Opt. 1	242	0.4	0.4	1.2
East history allocations - Opt. 2	241	0.4	0.4	1.4
West history allocation - Opt. 2	210	0.5	0.2	4.4

Source: NPFMC Crab rationalization database (Version 1).

Table 6. Allocations to LLP holders exceeding 1 percent and 2.5 percent thresholds.

Allocation	Number of allocations greater than 2.5 percent	Number of allocations greater than 1 percent
All history allocation - Opt. 1	0	5
East history allocation - Opt. 2	0	6
West history allocation - Opt. 2	8	27

Source: NPFMC Crab rationalization database (Version 1).

Generally speaking the major effect of the different allocation options is largely distributional. Option 1 values all qualified history in the *C. bairdi* fishery equally, crediting that history toward the allocation in both fisheries. Distributing allocations based on Option 1 may be argued to be equitable because *C. bairdi*

has never been fished as two fisheries. So, all historic catch is from a single fishery that was prosecuted without regard to the current dividing boundary. Some participants are likely to argue that it is only fair to allocate shares equally in both fisheries based on all qualifying period catch, since that history was not developed subject to the boundary. Supporters of Option 2 would likely argue that catch history should be valued only in the area that the history was developed, regardless of whether the new management areas were in use at the time of fishery. The distributional effects of one additional factor, the crab buyback, could interact with the different allocation options.

In the fall of 2004, NOAA Fisheries conducted the Crab Fisheries Capacity Reduction Program (or “buyback”). Under the buyback, participants in the fisheries repay the loan used to purchase licenses and vessels from the fisheries by paying a fee on future landings. In the *C. bairdi* fishery a fee of 5 percent will be imposed on all landings to cover the \$66.4 million portion of the buyback used to purchase history, vessels, and licenses from the *C. bairdi* and *C. opilio* fisheries (NMFS, 2004).<sup>3</sup> The allocations to remaining qualified LLP holders in the rationalization program are increased by the buyback. NOAA Fisheries estimated that 9.76 percent of the qualified history was purchased from the *C. bairdi* fishery by the buyback program. To pay for the purchase of that history, a fee of 5 percent will be charge on all landings of *C. bairdi* or *C. opilio* for the next 30 years (or until the loan is repaid). A critical part of the buyback was a referendum of license holders, under which the decision to proceed with the buyback was put to all holders of LLPs endorsed for a crab fishery. An important issue in considering which option to use for making allocations in the two *C. bairdi* fisheries is the distribution impact of the buyback.

Table 7 shows the estimated portion of the quota share pool purchased in the buyback program. Under the first option, which would base allocations of QS on all history regardless of location, approximately 9.3 percent of the quota share pool is estimated to be purchased in the buyback program from 25 vessels that are endorsed for the Bering Sea *C. opilio* and *C. bairdi* fisheries. Under the second option, the amount purchased varies across the two areas, with approximately 9.1 percent of the east pool being repurchased and approximately 11.1 percent of the west pool being repurchased. The table shows that allocations to persons with history in the west will be increased more by the buyback than allocations to persons with history in the east. Basing allocations on all history (regardless of a location of catch) will increase all allocations proportionally.

Table 7. Estimated percent of quota share pool purchase in the buyback.

	Number of vessels	Percent of quota share
All history allocation - Opt. 1	23	9.3
East history allocation - Opt. 2	22	9.1
West history allocation - Opt. 2	23	11.1

Source: NPFMC Crab rationalization database (Version 1).

An initial look at the above figure and tables may suggest to some that basing allocations in the two different fisheries on the location of the catch (Option 2) would work to the advantage of persons that have qualified history in the west over those that have history in the east, since allocations in the west are relatively more concentrated and more history was bought out of the west. The effects of the allocation options, however, depend on when the fisheries open and the relative TACs in the two areas. If the west

<sup>3</sup> Under the LLP, a single license endorsement authorizes the entry of a vessel into both the *C. bairdi* and *C. opilio* fisheries. Under the buyback program, license buybacks are based on all history associated with the endorsement, so purchases of (and repayment of the loan for) *C. bairdi* history are combined with the purchase of (and loan repayment for) history of *C. opilio*.

fishery does not open for several years, while the east opens in the relatively near future, persons that receive large allocations in the west and no (or small) allocations in the east would be disadvantaged by a program that makes allocations based on the location of the catch. The distributional impacts of making allocations based on location of catch will differ from the distributional impacts of making equal allocations in both fisheries based on all catch, but those specific impacts will depend largely on future TACs in the two fisheries. Crab stocks (and specifically the *C. bairdi* stocks in recent years) are difficult to predict. As a result, the difference of impacts of the alternatives cannot be predicted quantitatively or with any specificity.

No operational differences should arise under the different alternatives, as neither alternative would facilitate coordination of matching Class A IFQ with IPQ more than the other. Although an option with greater concentration of allocations could simplify coordination of the matching shares across the two sectors, both options for allocations would have over 200 allocations in both fisheries. The fewer allocations in the west are unlikely to simplify share matching in that fishery since a large number of persons will receive allocations. As a result, neither option seems to carry an operational advantage.

### **Harvest allocations to catcher processors**

Catcher processor allocations vary slightly under the two different allocation options. Table 8 shows simple statistics for the allocations to catcher processors under the two options for allocations to catcher processor LLP holders. Under both of the options 10 catcher processors would receive allocations in both fisheries. Under Option 2, east allocations to catcher processors would be slightly higher than the allocations under Option 1, while west allocations to catcher processors would be slightly less than under Option 1. Allocations to catcher processors in the west are less concentrated under Option 2, as the median allocation is approximately 0.1 percent, as compared to 0.6 under Option 1.

Table 8. Estimated allocations to catcher processors.

	<b>Number of allocations</b>	<b>Mean allocation</b>	<b>Median allocation</b>	<b>Total allocations to the sector</b>
All history allocations - Option 1	10	0.7	0.6	6.6
East history allocations - Option 2	10	0.7	0.6	6.8
West history allocations - Option 2	10	0.6	0.1	6.4

Source: NPFMC Crab rationalization database (Version 1).

### **Harvest allocations to captains**

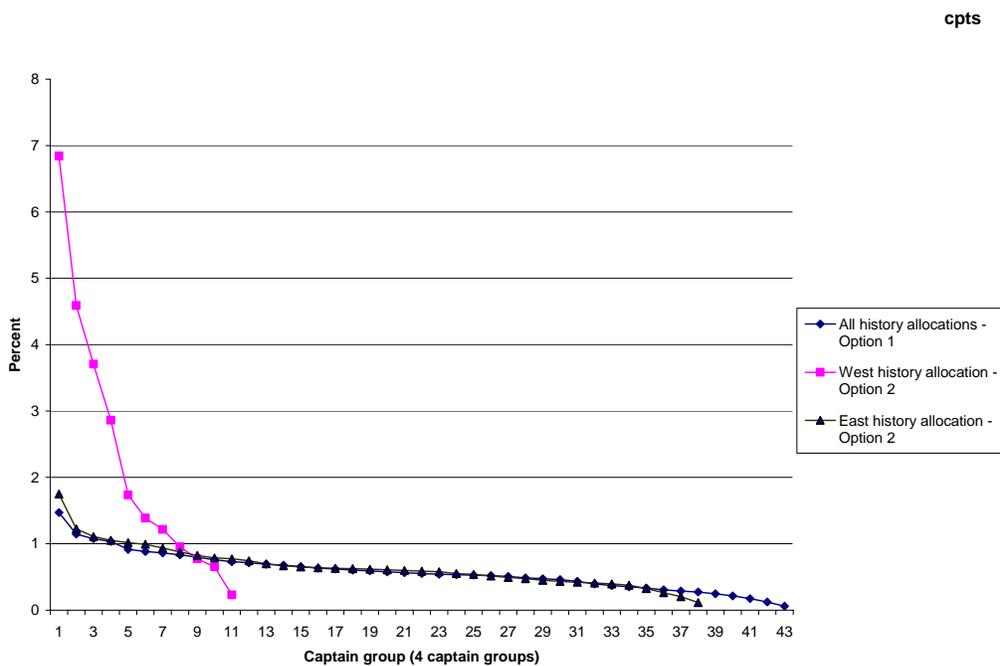
Captains, in addition to LLP holders receive an allocation of QS in the rationalization program. The options for making allocations to captains are the same as the options for making allocations to LLP holders.<sup>4</sup> So, under the first option, an eligible captain would receive equal allocations of QS for both

<sup>4</sup> Captains, however, have different eligibility requirements. To be eligible to receive an allocation, a captain must have landings in 3 of the qualifying years in the fishery and must meet a recency requirement by having landings in 2 of the 3 most recent seasons prior to June 10, 2002 in a fishery that was open during those years (i.e., Bristol Bay red king crab, Bering Sea *C. opilio*, or one of the two Aleutian Islands golden king crab fisheries). **For purposes of estimating allocations, staff assumed that under the option for basing allocations on location of catch (Option 2) that a captain would need landings in 3 qualifying years from the location of the fishery (i.e., east or west) to meet the first of the two eligibility requirements. Appendix 1 includes estimates of the allocations assuming that any *C. bairdi* catch (regardless of area) could be considered satisfy the eligibility requirements. So, a person with landings in the *C. bairdi* fishery (without regard to the east or west area) during three of the qualifying years would be eligible for an initial allocation.**

management areas based on all catch of *C. bairdi* in the qualifying years. Under the second option, a captain would receive an allocation in a fishery based on qualified catch in that management area.

Figure 4 show allocations to captains under the two allocation options. Table 9 shows simple statistics concerning those allocations. Table 10 shows the number of allocations to captains estimated to exceed thresholds of 5 percent and 2.5 percent of the captain share portion of the QS pool. If equal allocations are made in the two fisheries (by basing allocations on all catch regardless of whether it is from the east or west) approximately 175 captains would receive allocations. The largest four allocations would average approximately 1.5 percent, while the median allocation would be approximately one-half of one percent. No allocations are estimated to exceed 2.5 percent of the captains QS pool. As with LLP holder allocations, basing allocations to captains on the location of catch (under Option 2) results in substantially greater consolidation of allocations. In the west fishery, only 45 captains would receive allocations, if allocations are based on the location of the catch. The four largest allocations in that fishery would average almost 7 percent. The median allocation in the west fishery would be approximately 1.5 percent. In addition, 5 allocations are estimated to exceed 5 percent, while 15 are estimated to exceed 2.5 percent of the west QS captains pool. Allocations in the east fishery would also be slightly more concentrated, if allocations are based on the location of catch, as only 155 captains would receive allocations in the east fishery. No allocations would exceed 2.5 percent of the pool, while the four largest allocations would average 1.5 percent of the captains QS pool. A portion of the difference in the allocations arises from several captains failing to meet the eligibility requirement of participation in 3 qualifying years in the west fishery. For comparison purposes, staff also estimated the allocations under option 2 using a general eligibility requirement of 3 years of participation in the *C. bairdi* fishery (without requiring catch in the west). Those estimates show that a substantially greater number of captains would receive west allocations, if the eligibility requirement is relaxed. The allocations, however, would still be far more concentrated than the other allocations, with the four largest allocations averaging almost 7 percent of the captains QS pool. This concentration of the large allocations is also shown by a relatively small median allocation of approximately 0.2 percent.

Figure 4. Estimated allocations to captains.



Source: NPFMC Crab rationalization database (Version 1).

Table 9. Simple statistics for estimated allocations to captains

	Number of allocations	Mean allocation	Median allocation	Average of four highest allocations
All history allocations - Opt. 1	173	0.6	0.5	1.5
East history allocations - Opt. 2	155	0.6	0.6	1.7
West history allocation - Opt. 2	45	2.2	1.3	6.8

Source: NPFMC Crab rationalization database (Version 1).

Table 10. Allocations to captains exceeding 2.5 and 5 percent thresholds.

Allocation	Number of allocations greater than 5 percent	Number of allocations greater than 2.5 percent
All history allocations - Opt. 1	0	0
East history allocations - Opt. 2	0	0
West history allocation - Opt. 2	5	15

Source: NPFMC Crab rationalization database (Version 1).

As with the allocation to LLP holders, the primary effect of the choice of the different options for making allocations to captains is distributional. As noted in the discussion of allocations to LLP holders, distributional effects will depend greatly on future openings and TACs in the two fisheries. If the fisheries open with equal TACs, clearly captains receiving relatively large histories in the west are likely to benefit from the option that credits history in the area of the catch. If TACs and openings are not equally distributed across the two fisheries, the distributional impacts of Option 2 are less predictable. If all catch is credited in both areas under Option 1, the distribution of TACs and openings between the two areas will not affect the relative distribution of benefits among eligible captains, with each captain receiving the same allocation in both areas. As under the LLP options, the two options are operationally equivalent.

### 2.5.2. Effects of processing sector options on participants

Allocations to eligible processors under the two alternatives would be determined through the same process. Each processor would receive an allocation based equally on its allocation in the Bristol Bay red king crab fishery and its allocation in the Bering Sea *C. opilio* fishery. The distribution of processor allocations under the current regulation are shown in 2.4.3 above.

Although the method for determining allocations is the same as would be used in a single fishery, the allocations under the two processor options would differ. Similar to the harvester options, under the first processor option, each processor would receive equal allocations of PQS for the two fisheries. So, an eligible processor with 2 percent of the Bristol Bay red king crab qualifying history and 4 percent of the Bering Sea *C. opilio* qualifying history would receive 3 percent of the East Bering Sea *C. bairdi* PQS pool and 3 percent of the West Bering Sea *C. bairdi* PQS pool. These different pools of PQS would generate IPQ based on the TAC in the applicable fishery. For example, if a processor continues to hold 3 percent of the east PQS and the east fishery had a TAC that leads to the allocation of 1000 Class A IFQ, that processor would receive 30 east IPQ. A similar computation would be applied to determine west IPQ allocations. This method of allocating shares provides processors with a pool of PQS (and corresponding IPQ) for each fishery that may be traded independently (either through sale or lease).

Under the second processor option, the size of the allocation to each processor would be determined using the same method. Each eligible processor, however, would receive a single allocation of Bering Sea *C. bairdi* PQS, not specifically connected to either the east or west fishery. This PQS would yield IPQ that could be used for landings from either of the two fisheries. Using the previous example, the processor with 2 percent of the Bristol Bay red king crab qualifying history and 4 percent of the Bering Sea *C. opilio* qualifying history would receive 3 percent of the single Bering Sea *C. bairdi* PQS pool. If the processor continued to hold 3 percent of the *C. bairdi* PQS pool and the east fishery opened with a TAC that leads to the allocation of 1000 Class A IFQ, that processor would receive 30 IPQ. If the west fishery also opened with a TAC that leads to the allocation of 2000 Class A IFQ, the processor would receive an additional 60 IPQ (for a total of 90). These IPQ could then be used from landings from either fishery. So, the processor could use the IPQ to land the catch of 90 IFQ total, with any combination of east/west. Under this option, a processor would have the flexibility to use the IPQ to land crab from either fishery. Trading of PQS and IPQ would not be fishery specific, but would be of generic *C. bairdi* PQS or IPQ that could be used for landings from either fishery.

Unlike the harvester options, the processor options create two different pools of PQS and IPQ. Because of these different pools, the primary differences between the processor options are operational, rather than distributional. Under the first option, each participating processor would hold shares for one or both fishery that could be used for landings from the respective fisheries. Processors would be expected to develop fishery specific relationships with the harvesters that holding QS for a fishery. As TACs change, the IFQ allocations to harvesters and IPQ holdings to processors in each fishery would change in unison. So, processors that receive an annual IPQ allocation (from PQS holdings) that matches with a harvester's IFQ (received from QS holdings) in one season could be assured that the following year's allocations could be matched regardless of TAC changes. Making separate allocations of PQS and IPQ for each fishery should contribute to harvesters and processors developing relatively long-term associations.

Under the second option, PQS would yield IPQ that could be used in either fishery. As a consequence, TAC changes will affect the allocations of PQS holders differently from QS holders. For example, consider a year when both fisheries are open and a PQS holder matched all of its IPQ shares with an IFQ holder in the east. In the following year, if the east fishery closes, the IFQ holder would receive no allocation, but the IPQ holder would still receive an allocation of IPQ to be used for landings in the west. The IPQ holder would need to match shares with a holder of west IFQ. The dynamics created by this mismatch of PQS and QS pools are somewhat uncertain. The arbitration system is intended to ensure that a reasonable price is paid for all landings. While this system provides some assurance to IFQ holders, whether IFQ or IPQ holders might be able to use these dynamics for a competitive advantage is not certain. In any case, the absence of any constancy in the annual allocations across the sectors is likely to lead to less stable relationships between members of the different sectors. This instability could also contribute to inefficiencies, if vessels and processors are unable to develop efficient delivery patterns. For example, a QS holder in one fishery may occasionally need to change processors because of the fluctuation of PQS allocations arising because of TAC changes in the fisheries. The QS holder could need to devote extra resources to negotiating delivery terms or expend greater costs coordinating and making deliveries because of these periodic changes. In addition, associations of QS holders or cooperative arrangements may need to be changed periodically as TACs and allocations change in the different fisheries.

### **2.5.3. Effects on communities**

The distribution of benefits among communities should be generally unaffected by the harvester options. **Table 11** shows allocations by community under the two options for harvester allocations to LLP holders. Although slight variation in distribution of allocations occurs under the different options, the allocations are largely unchanged by the options.

Table 11. Allocations by community.

Community	Option 1		Option 2			
	All history		East history allocation		West history allocation	
	Number of vessels	Sum of allocations	Number of vessels	Sum of allocations	Number of vessels	Sum of allocations
Anchorage	8	2.2	8	2.2	7	1.0
Homer	5	2.2	5	2.3	5	1.5
Kodiak	28	11.5	28	12.0	22	11.2
Other Alaska	12	2.8	11	2.7	11	2.0
Seattle - CSMA	141	59.7	141	59.8	122	58.4
Other Washington	18	9.1	18	9.4	17	11.0
Newport	12	4.7	12	4.0	10	6.9
Other Oregon	12	5.6	12	5.4	11	7.8
Other State	6	2.1	6	2.2	5	0.4
Total	242	100.0	241	100.0	210	100.0

Source: NPFMC Crab rationalization database (Version 1).

Processing options could have some effects on community distribution of processing activity. Initial allocations under the different options are equivalent. Annual allocations of IPQ, however, could result in some differences in community effects depending on trading that might be undertaken under the different options. Under the first option (with distinct processing shares for the two fisheries), some processors may choose to consolidate holdings in one fishery or the other. For example, processors in the Pribilofs may choose to develop west share holdings, as that fishery is more proximate to the Pribilofs. The inability to consolidate PQS holdings in a single fishery could have impacts for some communities that have locational advantages in one fishery. The specific impacts of this effect cannot be predicted.

## 2.6. Summary of net benefits to the Nation

Any of the options currently proposed would improve net benefits to the Nation over the status quo, since the options correct an error in allocations that is necessary for the *C. bairdi* fisheries to be prosecuted.

Under the two harvester options net benefits to the Nation are the same, as the only difference in the effects of those options is distributional. Under the processor options, it is possible that option 1, which allocates PQS and IPQ in a separate pool for each fishery could have some efficiency benefit as that provision would allow processors to establish long term relationships with harvesters for each fishery that would be unaffected by TAC changes in the different fisheries. Under option 2, realignment of harvester/processor relationships might be needed, if TACs in the fisheries change independently. Specifically, harvesters that do not hold equal percentages of the QS pool for both fisheries could need to adjust their processor relationships when TACs in the fisheries change independently.

## 3. Environmental Assessment

This EA tiers off of the Crab EIS to focus the analysis on the issues ripe for decision and eliminate repetitive discussions. The proposed action, allocating QS, IFQ, PQS, and IPQ for two separate *C. bairdi* stocks, modifies a specific provision of the Crab Rationalization Program. The Crab EIS provides the status of the environment and analyzes the Crab Rationalization Program and its impacts on the human environment. This EA incorporates by reference information on the status of the environment and impacts of the Crab Rationalization Program on the human environment.

The Council on Environmental Quality (CEQ) regulations encourages agencies preparing NEPA documents to “tier their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review”:

Whenever a broad environmental impact statement has been prepared (such as a program or policy statement) and a subsequent statement or environmental assessment is then prepared on an action included within the entire program or policy (such as a site specific action) the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action. (40 CFR 1502.20)

In 40 CFR 1508.28, the CEQ regulations further define tiering as “the coverage of general matter in broader environmental impact statements ...with subsequent narrower statements of environmental analyses...incorporating by reference the general discussion and concentrating solely on the issues specific to the statement subsequently prepared.”

This section of the CEQ regulations further notes that “tiering is appropriate when the sequence of statements or analysis is from a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis...” (40 CFR 1508.28).

### **3.1. Purpose and Need**

The purpose and need for the proposed action is explained in the Council’s problem statement:

Under the FMP, the State of Alaska, ADF&G has management authority for certain aspects of the Bering Sea/Aleutian Islands crab fisheries. Under the FMP, the State of Alaska is authorized to make changes in management subject to criteria defined in the FMP (category II measures), including adjustment of district and subdistrict boundaries for the purposes of managing reasonably distinct stocks of crab. As a part of their management of Bering Sea District *C. bairdi*, ADF&G has determined that two geographically separate *C. bairdi* stocks inhabit the Bering Sea grounds that have historically supported the Bering Sea *C. bairdi* fishery. ADF&G has determined that these two stocks, one east of 166° W longitude and the other west of 166° W longitude should be managed separately. The Alaska Board of Fisheries has approved a management plan that directs ADF&G to manage the Bering Sea District *C. bairdi* as two separate stocks, east and west. The Council action to rationalize *C. bairdi* in the Bering Sea did not distinguish the management of these separate stocks. This action is to consider alternatives for the allocation of QS, PQS, IFQ, and IPQ for these separate fisheries. The Council intends to develop an allocation that is fair and equitable.

### **3.2. The alternatives**

The Council has adopted the following two options for making allocations of QS and IFQ to the harvest sector (including LLP license holders and captains):

- 1) Make two equivalent allocations of QS (one for each fishery) based on all of a person’s *C. bairdi* history during the qualifying years (regardless of where those harvests occurred). This structure would have two QS pools, one for each of the fisheries.
- 2) Make two allocations of QS (one for each fishery) with the allocations based on where harvests occurred. Harvests east of 166° W longitude would yield an allocation of QS in the fishery east of 166° W longitude. Harvests west of 166° W longitude would yield an allocation of QS in the fishery west of 166° W longitude. This structure would have two QS pools, one for each of the fisheries.

The Council also adopted the following two options for allocating PQS and IPQ to processors:

- 1) Make two equivalent allocations of PQS (one for each fishery) based equally on a company’s qualified Bering Sea *C. opilio* processing history and qualified Bristol Bay red king crab processing history (regardless of where harvests that led to those landings occurred). This alternative would result in two PQS pools, one for each fishery.

- 2) Make one allocation of PQS for the Bering Sea *C. bairdi* fishery based equally on a company's qualified Bering Sea *C. opilio* processing history and qualified Bristol Bay red king crab processing history (regardless of where harvests that led to those landings occurred). This single type of PQS would yield IPQ that can be used for landings from either fishery (i.e., IFQ west of 166° W longitude or IFQ east of 166° W longitude). This alternative would result in one PSQ pool that would yield IPQ that could be used in either *C. bairdi* fishery.

A more complete description of the options is contained in 2.3 above.

### **3.3. Affected environment**

The Crab EIS contains a complete description of the affected environment, including the physical environment, habitat, crab life history, marine mammals, and seabirds. The Crab EIS also contains full descriptions of the human environment, including crab fisheries, a management history, the harvesting sector, the processing sector, and community and social conditions. These descriptions are incorporated by reference. In addition to the factors discussed in the Crab EIS, this action specifically concerns the management of Bering Sea *C. bairdi* as two stocks. A description of the history of Bering Sea *C. bairdi* fishery and stock status, along with a description of current management of the species as two stocks, is included here.

#### **3.3.1. History of the fishery**

The Bering Sea District of Tanner crab Registration Area J includes all waters of the Bering Sea north of Cape Sarichef at 54°36' N. lat. and east of the U.S.-Russia Convention Line of 1867. This district is divided into the Eastern and Western Subdistricts by a line at 173° W longitude. The Eastern Subdistrict was historically further divided at the latitude of Cape Romanzof and 168° W longitude into the Norton Sound section to the east and the General Section to the west.

The first reported catches of *C. bairdi* occurred in 1968, incidental to the harvest of red king crabs in Bristol Bay. In 1974, a directed *C. bairdi* crab fishery began. Harvest peaked at 66.6 million pounds during the 1977/78 season. In the fall of 1978, NMFS predicted sharp declines in *C. bairdi* crab abundance. By 1984, the commercial harvest had fallen to 1.2 million pounds. Further stock declines led to a fishery closure during the 1986 and 1987 seasons.

In 1992, in order to slow the harvest rate to improve in-season management, regulations were adopted that limited vessels fishing for *C. bairdi* to no more than 250 pots. As happened with king crabs, these regulations were in conflict with federal law regarding nondiscriminatory application of pot limits. In 1993, the regulations were changed. Vessels 125 feet or under in overall length were limited to a maximum of 200 pots, while vessels longer than 125 feet in overall length were limited to a maximum of 250 pots.

In 1993 the BOF also adopted regulations which opened and closed part of the Eastern Subdistrict east of 168° W longitude to *C. bairdi* fishing concurrently with the Bristol Bay red king crab season. The Eastern Subdistrict between 163° and 173° W long. for the directed *C. bairdi* fishery was mandated to reopen 10 days after the closure of the Bristol Bay red king crab fishery or, if the Bristol Bay red king crab failed to open, on November 1. These actions were intended to avoid excessive female king crab bycatch, and were based on observer data indicating that most female king crab bycatch in the Bristol Bay red king crab and Bering Sea *C. bairdi* fisheries came from waters east of 163° W longitude.

The Bristol Bay red king crab fishery did not open in 1994 and 1995 due to low stock abundance. As a result, the *C. bairdi* fishery opened on November 1 in the Eastern Subdistrict, west of 163° W longitude. The commercial *C. bairdi* harvest in 1994 was 7.8 million pounds; in 1995 the harvest declined to 4.2 million pounds. The decline intensified the following year: the GHF for the 1996 *C. bairdi* fishery was

8.4 million pounds, but the fishery was closed before that level was reached due to poor performance; a total of 1.8 million pounds was harvested. Based on the 1997 NMFS surveys, which showed significant declines for both years in most segments of the *C. bairdi* population, ADF&G closed the Bering Sea *C. bairdi* fishery for the 1997 season and it has remain closed due to continuing low abundance levels.

### **3.3.2. Stock Status**

Based on the 2004 estimate of total mature biomass, the eastern Bering Sea *C. bairdi* remains in “overfished” status for the seventh year since the 1998 overfished declaration. The total mature biomass estimate for 2004 is below the minimum stock size threshold (MSST) and down from the estimate for 2003 (100.8-million pounds), but it is the second highest estimate since 1997. Overall, estimates of total mature biomass have shown an increasing trend since the 1998 overfished declaration and the 2004 estimate is more than twice the estimate for 1998 (37.6-million pounds). However, the rate of increase in estimated total mature biomass since 1998 has been extremely slow relative to that seen when total mature biomass increased from 48-million pounds in 1985 to 249-million pounds in 1988.

ADF&G’s area-swept estimate for Eastern Subdistrict mature female biomass declined from being just below the 21.0-million pound threshold in 2003 (20.8-million pounds) to only 13.2-million pounds in 2004. Size frequency modes for females at 77.5-mm CW and 57.5-mm CW in 2003, which tracked well from 2001, disappeared or were greatly diminished by 2004. Abundance estimates of mature-sized females have shown only minor fluctuations about depressed levels in Eastern Subdistrict since 1997. The prolonged depressed level of mature-sized female abundance during the last eight years is in contrast with the rapid recovery from similarly depressed levels that was seen from the mid-1980s through the late-1980s. Abundance of juvenile-sized females (i.e., <80-mm CW) in 2004 was lower than the previous three surveys, except for in the <40-mm CW size class. Hence there should be no expectations for any appreciable increase in mature female abundance or biomass in the next two years.

The area-swept abundance estimates for mature-sized males in the Eastern Subdistrict have shown a slight increasing trend from 1997 through 2004. The size frequency distribution for the Eastern Subdistrict in 2004 suggests the possibility for some increase in mature-sized male abundance next year. However, the estimated abundance of legal males has remained low since 1997, perhaps indicating that sublegal males are not molting into legal size. ADF&G estimated abundance of legal-sized males in Bristol Bay in 2004 at 5.2-million by the area-swept method and at 3.2-million by the LBA method (the NMFS area-swept estimate was 5.0-million). Because of a preponderance of old-shell crabs among the legal males, ADF&G estimates the abundance of “exploitable legal males” (i.e., 100% of new-shell legal males plus 32% of old-shell legal males) in Bristol Bay area to be only 2.1-million by the area-swept method and 1.68-million by the LBA-method. Both ADF&G and NMFS estimate the abundance of legal males in the Eastern Subdistrict west of Bristol Bay to be only 0.3-million.

### **3.3.3. Management of the fisheries**

The FMP establishes a structure that categorizes management measures by management authority. Management is shared with the State of Alaska, to draw on State expertise concerning certain measures. Category 1 measures are those that are inherent Federal responsibilities under the Magnuson Stevens Act and can only be amended through FMP amendments. The FMP establishes a framework (or criteria) for Category 2 measures that guide State decision making on those measures. Category 2 measures may be developed by the State Board of Fisheries to the extent permitted by the framework. Category 3 measures are under the discretion of the State without FMP framework. Changes to management measures by the State are through the Board of Fisheries process. Under the FMP Category 2 measures, the State of

Alaska is authorized to make adjustment of district and subdistrict boundaries for the purposes of managing reasonably distinct stocks of crab.

A management boundary distinguishing the Pribilof Islands area from the Bristol Bay area was first established in spring of 1999 when the Alaska Board of Fisheries (BOF) adopted a new harvest strategy in regulation for eastern Bering Sea Tanner crab in the Eastern Subdistrict of the Bering Sea (Bering Sea waters north of 54°36' N latitude and east of 173° W longitude, excluding the Norton Sound Section).

The State determined that eastern Bering Sea *C. bairdi* should be separated into two stocks and managed as two separate fisheries to avoid localized depletion by the commercial fishery, particularly of legal-sized males in the Pribilof Islands area. Although the distribution of *C. bairdi* is continuous over its range in the eastern Bering Sea, there is some discontinuity in the distribution of legal-size males. Highest densities of legal-sized males during stock assessment surveys tend to occur at sampling stations either east of 166° W. longitude (i.e., in Bristol Bay) or west of 168° W. longitude (i.e., in the vicinity of the Pribilof Islands). In contrast, densities of legal males tend to be low at survey stations between 166° W. longitude and 168° W. longitude. The contrast between densities in the Pribilof Islands area and Bristol Bay with the densities in the intervening area between 166° W. longitude and 168° W. longitude is most notable at times of high populations of legal-sized males in the eastern Bering Sea. The distribution of catch of legal-sized males during the commercial fishery has shown a similar pattern. During 1985 through 1996, 74 percent of the commercial catch was harvested in Bristol Bay between 161° W. longitude and 166° W. longitude and 21 percent was harvested in the Pribilof Islands area between 168° W. longitude and 172° W. longitude; only 3 percent was harvested in the area between 166° W. longitude and 168° W. longitude.

Current State regulations allow the Tanner crab fishery to be prosecuted as an incidental-harvest fishery in a directed Bristol Bay red king crab or *C. opilio* fishery or as a directed fishery if either the Bristol Bay red king crab or *C. opilio* fishery are closed.

### ***C. bairdi* and Bristol Bay red king crab fishery**

*C. bairdi* may be taken with Bristol Bay red king crab, however, the boundary for the east *C. bairdi* TAC does not align with the western management boundary for the Bristol Bay red king crab fishery. The *C. bairdi* TAC boundary is 166° W longitude, whereas the western boundary for Bristol Bay red king crab is 168° W longitude. To assure that western *C. bairdi* is not taken onboard with eastern *C. bairdi*, when registering to harvest Bristol Bay red king crab, the following constraint applies. Vessel operators registering to retain Bristol Bay red king crab east of 168° W longitude, may not retain *C. bairdi* because there would be IFQ enforcement issues with the opportunity to have both east and west *C. bairdi* onboard. Operators registering to retain both Bristol Bay red king crab and east *C. bairdi* are restricted to fishing waters east of 166° W longitude, and use of red king crab gear and pot limits. This restriction does not impede red king crab harvests, as only 0.35 percent of the red king crab harvest has historically (1985 – 2003) occurred from 166° to 168° W longitude. Operators can elect to change their registration to a single species. If Bristol Bay red king crab is closed or vessel operator only registers to retain east *C. bairdi*, then vessels will not be allowed to register to fish east of 163° W longitude to protect red king crab. Operators may register for a species only when the fishing season is open for that species. If either the Bristol Bay red king crab season or the *C. opilio* season is not opened, registration for *C. bairdi* will occur east or west of 166° W longitude.

If the Bristol Bay red king crab season is not opened, registration for *C. bairdi* will occur east or west of 166° W longitude. If, however, the Bristol Bay red king crab fishery is closed, commercial fishing for *C. bairdi* towards the TAC established for the area east of 166° W longitude is restricted to the area between 163° W longitude and 166° W longitude.

### ***C. bairdi* and *C. opilio* fishery**

The 166° W longitude boundary aligns the *C. bairdi* east-west TAC boundary with the eastern management boundary for *C. opilio*. *C. opilio* may not be taken in the Bering Sea District east of 166° W longitude. The management goal for alignment with *C. opilio* is to provide efficiency to fishermen by allowing concurrent harvest of *C. opilio* and west *C. bairdi* for those fishermen, and to reduce bycatch. Vessel operators may register to retain *C. opilio* and *C. bairdi* west of 166° W longitude, provided that TACs are available and the seasons are open. Operators registering for both species would use *C. bairdi* gear and pot limits, however, operators could change their registration to a single species. All legal-size *C. bairdi* harvested west of 166° W longitude may be retained and count toward the western *C. bairdi* IFQ. If the *C. opilio* season is not opened, registration for *C. bairdi* will occur east or west of 166° W longitude.

### **Harvest Strategies**

Due to discontinuity in the distribution of legal-sized *C. bairdi*, management uses two TACs established east and west of 166° W long. This harvest strategy was incorporated into the rebuilding plan for eastern Bering Sea Tanner crab stock that was developed by the NPFMC in response an “overfished” declaration by NMFS in 1998. The harvest strategy was amended by the BOF in March 2005 to include the entire Bering Sea District and to change the management boundary distinguishing the Pribilof Islands area from the Bristol Bay area from 168° W longitude to 166° W longitude. The current harvest strategy specifies a threshold level for consideration of opening the Eastern Subdistrict fishery, rules for computing TACs, separate TACs for each of the areas east and west of 166° W longitude, and a minimum TAC for opening the area east of 166° W longitude.

Setting two TACs east and west of 166° W longitude that are proportional to the estimated abundances east and west of 166° W longitude provides a means to avoid localized depletion by the commercial fishery, particularly of those legal-sized males in the Pribilof Islands area. The 166° W longitude boundary corresponds with an area in which historical fishery catch and effort has been low. Hence the 166° W longitude boundary has the benefit of providing low expectations for the conservation, management and enforcement concerns that can result from fishers “fishing to the line” (i.e., commercial fishing effort and high removal rates concentrated on either side of the boundary).

The harvest strategy specifies the threshold level for opening the Bering Sea District to commercial fishing as 21 million pounds of mature female biomass in the Eastern Subdistrict. The fishery is closed if the stock is below that threshold level. Mature female biomass relative to the 21 million-pound threshold is defined as the estimated biomass of females > 79-mm carapace width (CW).

If the Eastern Subdistrict mature female biomass is at or above the 21 million-pound threshold for a fishery opening, separate TACs are computed for the each of the areas east and west of 166° W longitude. The TACs are computed as a function of:

- 1) “molting mature male abundance” in each area east and west of 166° W longitude for the current year
- 2) “exploitable legal male abundance” in each area east and west of 166° W longitude for the current year
- 3) biomass of mature females in the Eastern Subdistrict for the current year, and
- 4) biomass of mature females in the Eastern Subdistrict for the preceding year.

“Molting mature male abundance” is defined as the estimated abundance of all new-shell males > 112-mm CW plus 15% of the estimated abundance of old-shell males > 112-mm CW. “Exploitable legal male abundance” is defined as the estimated abundance of all new-shell legal males plus 32% of the estimated abundance of old-shell legal males. In both definitions, males in very-old-shell or very-very-old-shell are included as old-shell males. Legal males are defined by the minimum legal CW (including the spines) of

5.5 inches (140 mm); 138-mm CW (not including spines) is used as a proxy for minimum legal size for crabs measured during the stock assessment survey.

A lower exploitation rate in the first year that the stock is above threshold is a precautionary measure to prevent an excessive legal harvest rate in the first year that the stock is above the fishery-opening threshold and to protect against survey measurement error (Zheng and Kruse 1999). Hence different exploitation rates are applied to the molting mature male abundance dependent upon whether the biomass of mature females in the Eastern Subdistrict exceeded the 21 million-pound threshold in the preceding year (Case 1) or did not exceed the 21 million-pound threshold in the preceding year (Case 2).

**Case 1.** If the mature female biomass for the Eastern Subdistrict in the preceding year was at or above the 21 million-pound threshold value, the target number of legal males to harvest in each of the areas east and west of 166° W longitude is computed from the current year's stock estimates as follows:

- An exploitation rate is applied to the molting mature male abundance as a function of the current year's mature female biomass for the Eastern Subdistrict:
  - An exploitation rate of 10% is applied to the molting mature male abundance for the area (east or west of 166° W longitude) when the mature female biomass for the Eastern Subdistrict is at least 21 million pounds but less than 45 million pounds; and
  - An exploitation rate of 20% is applied to the molting mature male abundance for the area (east or west of 166° W longitude) when the mature female biomass for the Eastern Subdistrict is greater than or equal to 45 million pounds.
- The harvest of legal males in each area (east or west of 166° W longitude) is capped at 50% of the exploitable legal male abundance in the area.

Final computation of the TACs in pounds for each of the areas east and west of 166° W longitude is achieved by multiplying the target number of legal males to harvest by the average weight of legal crabs.

**Case 2.** If the mature female biomass for the Eastern Subdistrict in the preceding year was below the 21 million-pound threshold value, the TACs for each of the areas east and west of 166° W longitude are reduced to one-half the values as computed in Case 1, above.

A minimum TAC of 4.0 million pounds for the IFQ (i.e., non-CDQ) fishery is established in regulation for opening the fishery in the area east of 166° W longitude. Because the general fishery's TAC is 92.5% of the total TAC for the area, this minimum TAC is equivalent to a combined IFQ and CDQ fishery TAC of 4.324-million pounds.

The minimum TAC for the area east of 166° W longitude is a management tool to help guard against survey error at low stock levels. There is no regulatory minimum TAC established for the Tanner crab fishery west of 166° W longitude. However, 5 AAC 35.508 (f) directs the ADF&G to consider the manageability of the fishery and stock conditions before opening the fishery west of 166° W longitude.

### **Crab Rationalization Program**

Although the State currently manages *C. bairdi* in the Bering Sea as two stocks, prior to 1999, the State of Alaska managed *C. bairdi* in the Bering Sea as a single stock. The existing federal Crab Rationalization Program comports with the former single stock management. In the Crab Rationalization Program, QS would be allocated to harvesters (including license holders and captains) and PQS would be allocated to processors based on historic harvesting and processing. If the stock reaches a level at which the State determines a harvestable surplus is available, allocations of IFQ and IPQ would be made to the holders of QS and PQS, respectively. Each holder of *C. bairdi* QS would have received an allocation of IFQ, in an amount of pounds so that the person would be permitted to harvest a percentage of the harvestable surplus

allocated to the primary fishery<sup>5</sup> equal to the percentage of the QS pool held. Similarly, each holder of PQS would receive an allocation of IPQ, in an amount of pounds so that the person would be permitted to receive and process a percentage of the harvestable surplus for which processor shares are allocated<sup>6</sup> equal to the holder's percentage of the PQS pool. The current management provides for single pools of QS and PQS, which in turn yield single pools of IFQ and IPQ, without regard to the two separate stocks. The current allocations are not consistent with management of the species as two stocks.

### **3.4. Analysis of the alternatives**

#### **3.4.1. Effects on administration, management, and enforcement**

Administration, monitoring, and management of the allocations under the options are generally as described in the Crab EIS and in 3.3.3 above. The few differences are described here.

In April 2005, the Council requested NMFS to withhold issuing QS and PQS for the *C. bairdi* fishery until the council selects a preferred alternative definition of the fishery and NMFS completes the regulatory process to implement the selected alternative. Withholding QS and PQS does not impact participants because the *C. bairdi* fishery is currently closed as a result of low abundance levels.

Managing the allocation process under either option would not be difficult. First, under the terms of the existing regulations, the agency will calculate initial allocations of *C. bairdi* QS and PQS to eligible LLP license holders, captains, and processors who timely apply during the current application period, (April 4 -June 3, 2005). However, the QS and PQS will not be issued when the QS/PQS in the other fisheries is issued (estimated to be in mid-July 2005). Regardless of the allocation method used, NMFS will notify each person of his/her right to contest the calculation, and proceed to issue the QS/PQS or to adjudicate disputes.

For the harvest sector, two options are under consideration. Option 1 would mandate equal QS allocations in the two fisheries based on all catch of *C. bairdi* in the qualifying period. Implementing this option would be simply accomplished by dividing the already-approved allocation into the two *C. bairdi* fisheries and issuing the QS accordingly. This can be accomplished soon after the regulations are effective.

Option 2 would mandate QS allocations based on the location of the qualifying catch. Under this option, NMFS would determine the amount of "East" and "West" *C. bairdi* QS qualified applicants would be issued based on harvest information already contained in the NOAA Fisheries Official Crab Rationalization Record (Official Record).

Processor allocations under either option would be based on qualified landings from the Bristol Bay red king crab fishery and the Bering Sea *C. opilio* fishery. The allocations under either alternative can be based on the existing application and allocation process. Accordingly, no additional administrative cost would be incurred for initial allocation under either of the processor options.

Management of IFQ allocations would be the same under either option. Each QS allocation would yield IFQ based on its portion of the pool and the TAC. Catch accounting would be accomplished by requiring catcher processors to weigh all catch at sea and all landings at shore plants. Catch monitoring plans,

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<sup>5</sup> The primary fishery is the fishery after the allocation to CDQ groups.

<sup>6</sup> Generally, IPQ are allocated for only 90 percent of the primary fishery catcher vessel allocation. In the first three years of the program, however, IPQ will not be allocated for 90 percent of the captain share catcher vessel allocation.

subject to the approval of NOAA Fisheries, would be developed by processors to facilitate monitoring and weighing of catch.

Cooperatives would be required to submit weekly catch reports, while individual vessels fishing cooperative allocations would be required to report landings electronically to verify cooperative weekly reports.

VMS, approved by NOAA Fisheries, will be required on all vessels participating in the rationalized crab fisheries. Using a satellite global positioning system, transmitters would automatically determine a vessel's location several times each hour and transmit that information to NOAA Fisheries. VMS is critical to monitoring catch from the two fisheries, as it will allow geographic tracking of vessel activities. Enforcement under the rationalization program will be complicated by the extended season and the individual allocations to harvesters and processors. As noted in the crab rationalization EIS, additional enforcement agents will be required to monitor the activities of participants in the fisheries. The state regulations that prohibit participation in both the east and west fisheries in a single trip should adequately facilitate management and enforcement of the two fisheries.

Management of IPQ allocations under the two processor options are similar and would be generally undertaken as described in the Crab EIS. The only difference between the two options arises from the allocation of different shares for the two fisheries under one option. Under option 1, the independent allocations of IPQ in the two fisheries would be required to be matched to Class A IFQ from the corresponding fishery. Under option 2, a single type of *C. bairdi* IPQ would be issued that may be matched with Class A IFQ from either fishery. The task of managing these allocations, however, is very similar and, therefore should have few or no management implications.

### **3.4.2. Effects on the physical and biological environment**

The options under consideration this action differ only in the calculation of initial allocations of long term shares (QS and PQS) and the nature of the processing privileges (PQS and IPQ) in the rationalized *C. bairdi* fisheries. The choice of options has no effect on the physical or biological environment. Effects of the Crab Rationalization Program on the physical and biological environment (including effects on crab stocks, life history stages of crab, benthic species and habitat, essential fish habitat, the ecosystem, endangered species, marine mammals, and sea birds) are fully analyzed in the Crab EIS. This analysis is incorporated by reference. The Crab EIS concludes that for all of the components of the environment analyzed, the effects of the Crab Rationalization Program are either insignificant or unknown but presumed to be insignificant based on the available scientific information.

### **3.4.3. Effects on the human environment**

This section summarizes the effects on the human environment from the RIR, which appear in 2.5 above.

The difference in effects of the harvester options on the human environment is primarily distributional. Under the option 1 for allocations to harvesters (including captains), an eligible participant will receive an allocation each in both fisheries based on all qualifying catch regardless of where that catch occurred. Under the second option, a harvest will receive an allocation in each fishery based on historic catch from the area of the fishery. Under the second option, a person's allocation will be skewed toward the area in which the person had greater catch relative to other participants. The distributional effects of the allocations under the different allocations, however, depend not only on the size of the allocation to a person in a fishery, but also on whether the fishery opens and the TAC. Neither of the fisheries will open in 2005 or 2006, as the stocks are below the harvest strategy threshold that would permit opening. In addition, future openings are uncertain and unpredictable. As a result, the distributional effects are not fully predictable.

For processors, the effects of the options are choice of options have operational and efficiency effects. Under the first option, PQS and IPQ pools are created for the two fisheries. Share holders will be able to trade shares in the fisheries independently to establish long term relationships in each fishery independently. Under the second option, PQS are allocated that generate annual allocations of IPQ that can be used in either fishery (so the IPQ pool is equal to the sum of the Class A IFQ pool in the two fisheries combined). Since TACs in the fisheries may fluctuate independently, harvesters that do not hold equal percentages of the pools in both fisheries will be unable to establish fixed long-term relationships with a processor for all of their shares. Instead these participants will need to modify their relationships if TACs change independently in the different fisheries. This restructuring of relationships could reduce efficiency in the fisheries by adding to transaction costs of participants.

#### **3.4.4. Effects on the Environment**

The choice of methods of making initial allocations under this action will have no effect on fish different allocations under this action will

#### **3.4.5. Cumulative Effects**

The cumulative effects arising out of this action arise out of the relationship of the action to the overall Crab Rationalization Program and the relationship of the action to State regulation of the fisheries under the FMP. These effects are analyzed to the extent possible in the preceding sections of this analysis. The Crab EIS analyzes the cumulative effects of the Crab Rationalization Program and reasonable foreseeable past and present external events. This analysis is incorporated by reference.

### **4. Regulatory Flexibility Analysis**

The Regulatory Flexibility Act (RFA), first enacted in 1980, and codified at 5 U.S.C. 600-611, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: 1) to increase agency awareness and understanding of the impact of their regulations on small business; 2) to require that agencies communicate and explain their findings to the public; and 3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts, while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must either, (1) “certify” that the action will not have a significant adverse effect on a substantial number of small entities, and support such a certification declaration with a “factual basis”, demonstrating this outcome, or, (2) if such a certification cannot be supported by a factual basis, prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities.

Based upon a preliminary evaluation of the proposed pilot program alternatives, it appears that “certification” would not be appropriate. Therefore, this IRFA has been prepared. Analytical requirements for the IRFA and FRFA are described below in more detail.

The IRFA must contain:

1. A description of the reasons why action by the agency is being considered;
2. A succinct statement of the objectives of, and the legal basis for, the proposed rule;

3. A description of, and where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
4. A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
5. An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule;
6. A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes, and that would minimize any significant adverse economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:
  - a. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
  - b. The clarification, consolidation or simplification of compliance and reporting requirements under the rule for such small entities;
  - c. The use of performance rather than design standards;
  - d. An exemption from coverage of the rule, or any part thereof, for such small entities.

The “universe” of the entities to be considered in an IRFA generally includes only those small entities that can reasonably be expected to be directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, or of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for purposes of this analysis.

In preparing an IRFA, an agency may provide either a quantifiable or numerical description of the effects of a proposed rule (and alternatives to the proposed rule), or more general, descriptive statements if quantification is not practicable or reliable.

#### **4.1. Definition of a Small Entity**

The RFA recognizes and defines three kinds of small entities: 1) small businesses; 2) small non-profit organizations; and 3) and small government jurisdictions.

Small businesses: Section 601(3) of the RFA defines a “small business” as having the same meaning as a “small business concern,” which is defined under Section 3 of the Small Business Act. A “small business” or “small business concern” includes any firm that is independently owned and operated and not dominate in its field of operation. The U.S. Small Business Administration (SBA) has further defined a “small business concern” as one “organized for profit, with a place of business located in the United States, and which operates primarily within the United States, or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials, or labor. A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust, or cooperative, except that where the form is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture.”

The SBA has established size criteria for all major industry sectors in the U.S., including fish harvesting and fish processing businesses. A business “involved in fish harvesting” is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates), and if it has combined annual receipts not in excess of \$3.5 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation (including its affiliates) and employs 500 or fewer persons, on a full-time, part-time,

temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the \$3.5 million criterion for fish harvesting operations. A wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

The SBA has established “principles of affiliation” to determine whether a business concern is “independently owned and operated.” In general, business concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party controls or has the power to control both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party, with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern’s size. However, business concerns owned and controlled by Indian Tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805 are not considered affiliates of such entities, or with other concerns owned by these entities, solely because of their common ownership.

Affiliation may be based on stock ownership when: (1) A person is an affiliate of a concern if the person owns or controls, or has the power to control 50 percent or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock, or (2) If two or more persons each owns, controls or have the power to control less than 50 percent of the voting stock of a concern, with minority holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern.

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors, or general partners control the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint venturers if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations: The RFA defines “small organizations” as any nonprofit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions: The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of fewer than 50,000.

#### ***4.2. A description of the reasons why action by the agency is being considered***

Under the current FMP, management of the Bering Sea and Aleutian Islands crab fisheries is shared with the State of Alaska. Under its authority under the FMP, the State of Alaska has determined to manage

Bering Sea *C. bairdi* as two stocks. Federal regulations currently allocate fishing and processing privileges for management of *C. bairdi* as a single stock. The current action is necessary to modify the allocations of fishing and processing privileges consistently with two stock management of *C. bairdi*.

#### **4.3. The objectives of, and the legal basis for, the proposed rule**

Under the current regulatory structure, Bering Sea *C. bairdi* is managed by NOAA Fisheries and the State of Alaska under FMP. The authority for this action and the FMP are contained in the Magnuson Stevens Act, as amended by the Consolidated Appropriations Act of 2004.

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

The following estimation of number of small entities are based on the estimation from the crab rationalization EIS. Approximately 236 entities own crab harvest vessels that can reasonably be assumed to be directly regulated under the crab rationalization being considered. Thirteen of the entities (owning 38 vessels) are estimated to be large entities, based upon SBA criteria. These entities have been defined as large because they either generated more than \$3.5 million in gross revenue during a calendar year (1998, 1999, or 2000), or they are owned by a processor that meets the large entity definition for that sector. The remaining 223 independent entities are considered “small” entities under 2002 SBA guidelines.

A total of 134 small entities made at least one crab landing from 1991-2000, but do not appear to qualify for an initial allocation in a crab fishery. Five of these entities would be considered “large” by SBA standards, and 129 would be defined as “small”. The large entities owned a total of nine catcher vessels. The small entities owned total of 155 catcher vessels and one catcher/processor. For the most part, vessels that do not qualify for the IFQ program have either left the fishery or are fishing under interim LLP licenses. These entities and other small entities could come under the regulation, if they elect to enter the fisheries by purchasing QS, IFQ, PQS, or IPQ.

Eight small entities appear to qualify for processor allocations, based on having participated in 1998 or 1999. These totals exclude catcher/processors, since they were accounted for under the vessel discussion. Estimates suggest that forty-three small processing entities (owning 50 plants) do not to qualify for processor allocations.

#### **4.5. An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule**

The analysis uncovered no Federal rules that would conflict with, overlap, or be duplicated by the options under consideration.

#### **4.6. A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes, and that would minimize any significant adverse economic impact of the proposed rule on small entities**

The Council also adopted for analysis the following two options for allocating QS and IFQ to harvesters:

- 1) Make two equivalent allocations of QS (one for each fishery) based on all of a person's *C. bairdi* history during the qualifying years (regardless of where those harvests occurred). This structure would have two QS pools, one for each of the fisheries.
- 2) Make two allocations of QS (one for each fishery) with the allocations based on where harvests occurred. Harvests east of 166° W longitude would yield an allocation of QS in the fishery east of 166° W longitude. Harvests west of 166° W longitude would yield an allocation of QS in the fishery west of 166° W longitude. This structure would have two QS pools, one for each of the fisheries.

The Council also adopted for analysis the following two options for allocating PQS and IPQ to processors:

- 1) Make two equivalent allocations of PQS (one for each fishery) based equally on a company's qualified Bering Sea *C. opilio* processing history and qualified Bristol Bay red king crab processing history (regardless of where harvests that led to those landings occurred). This alternative would result in two PQS pools, one for each fishery.
- 2) Make one allocation of PQS for the Bering Sea *C. bairdi* fishery based equally on a company's qualified Bering Sea *C. opilio* processing history and qualified Bristol Bay red king crab processing history (regardless of where harvests that led to those landings occurred). This single type of PQS would yield IPQ that can be used for landings from either fishery (i.e., IFQ west of 166° W longitude or IFQ east of 166° W longitude). This alternative would result in one PSQ pool that would yield IPQ that could be used in either *C. bairdi* fishery.

These alternatives comprise the suite of "significant alternatives" for purposes of the RFA.

The difference in effects of the harvester options on the human environment is primarily distributional. Under the option 1 for allocations to harvesters (including captains), an eligible participant will receive an allocation each in both fisheries based on all qualifying catch regardless of where that catch occurred. Under the second option, a harvest will receive an allocation in each fishery based on historic catch from the area of the fishery. Under the second option, a person's allocation will be skewed toward the area in which the person had greater catch relative to other participants. The distributional effects of the allocations under the different allocations, however, depend not only on the size of the allocation to a person in a fishery, but also on whether the fishery opens and the TAC. Neither of the fisheries will open in 2005 or 2006, as the stocks are below the harvest strategy threshold that would permit opening. In addition, future openings are uncertain and unpredictable. As a result, the distributional effects on small entities are not predictable.

For processors, the effects of the options are choice of options have operational and efficiency effects. Under the first option, PQS and IPQ pools are created for the two fisheries. Share holders will be able to trade shares in the fisheries independently to establish long term relationships in each fishery independently. Under the second option, PQS are allocated that generate annual allocations of IPQ that can be used in either fishery (so the IPQ pool is equal to the sum of the Class A IFQ pool in the two fisheries combined). Since TACs in the fisheries may fluctuate independently, harvesters that do not hold equal percentages of the pools in both fisheries will be unable to establish fixed long-term relationships with a processor for all of their shares. Instead these participants will need to modify their relationships if TACs change independently in the different fisheries. This restructuring of relationships could reduce

efficiency in the fisheries by adding to transaction costs of participants. Small entities may be more sensitive to these added costs than larger entities that typically have greater share holdings, which may provide greater leverage in negotiating relationships and also provide a greater base over which to distribute the additional costs.

## **5. National Standards and Fishery Impact Statement**

### **5.1. National Standards**

Below are the ten National Standards as contained in the Magnuson-Stevens Act, and a brief discussion of the consistency of the proposed alternatives with each of those National Standards, as applicable.

#### **National Standard 1**

Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery

Nothing in the proposed alternatives would undermine the current management system that prevents overfishing. The proposed options will result in allocations consistent with the management of Bering Sea *C. bairdi* as two fisheries, which is intended to improve conservation and management of the species.

#### **National Standard 2**

Conservation and management measures shall be based upon the best scientific information available.

The analysis draws on the best scientific information that is available concerning the *C. bairdi*. The most up-to-date information that is available has been provided by the managers of these fisheries, as well as by members of the fishing industry.

#### **National Standard 3**

To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The allocations proposed in this action will result in the management of each *C. bairdi* stock as a unit throughout its range. The management is also intended to coordinate *C. bairdi* management with management of Bering Sea *C. opilio* and Bristol Bay red king crab.

#### **National Standard 4**

Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The proposed alternatives would treat all participants in the *C. bairdi* fisheries the same, regardless of their residences. The allocations in the fisheries would be based on historical catch in the fisheries without discrimination among participants.

The total annual allocation in each fishery will be based on the fishery management plan that is developed to promote conservation of the resource. Any changes in a fishery, as a result of the pilot program, that impact conservation of the resource will be taken into account when setting the TACs in a year. No changes are expected.

Limits on individual holdings or usage of allocations would prohibit any individual from acquiring an excessive share of harvest privileges or controlling an excessive share of processing in the fisheries.

#### **National Standard 5**

Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

The allocation options proposed are necessary for fishing under the rationalization program, which should improve the efficiency in the Bering Sea crab fisheries. The primary motivation for the division of *C. bairdi* management into two stocks, however, is the conservation of the resource.

#### **National Standard 6**

Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

Under the allocation options, changes in the availability of *C. bairdi* resources each year would be addressed through changes in annual allocations. These changes in allocations will be used to ensure conservation of the resource in the future.

#### **National Standard 7**

Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

The allocations under the options are necessary for fishing under the rationalization program and would not duplicate any other laws. The costs of managing the fisheries may increase slightly as a result of the requirement of the allocation in two *C. bairdi* fisheries, which are necessary to ensure realization of benefits from the rationalization program and the management of the two stocks.

#### **National Standard 8**

Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

Implementing the options will have no effect on communities. The impacts of the rationalization program on communities are generally addressed in the Crab Rationalization EIS. No further effects arise out of this action.

#### **National Standard 9**

Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

The allocations are intended to facilitate better management of the two *C. bairdi* stocks. In addition, facilitating incidental catch of *C. bairdi* in the *C. opilio* and Bristol Bay red king crab fisheries should help reduce bycatch and bycatch mortality of *C. bairdi*.

### **National Standard 10**

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

The rationalization program should reduce the incentives for crab fishermen to fish in inclement weather or fish in a manner that compromises safety. The allocations under these options do not affect any potential benefits arising out of those incentives.

### **5.2. Section 303(a)(9) - Fisheries impact statement**

Section 303(a)(9) of the Magnuson-Stevens Act requires that any management measure submitted by the Council take into account potential impacts on the participants in the fisheries, as well as participants in adjacent fisheries. The impacts of the options for allocation of QS, IFQ, PQS, and IPQ in the *C. bairdi* fisheries on participants in the harvesters (including LLP license holders and captains) and processors have been discussed in previous sections of this document. This action will have no effect on participants in other fisheries.

## **6. References**

Alaska Department of Fish and Game (September 2004) Annual Management Report for the Commercial and Subsistence Shellfish Fisheries of the Aleutian Islands, Bering Sea, and Westward Region's Shellfish Observer Program, 2003, Regional Information Report No. 4K04-43.

National Marine Fisheries Service/North Pacific Fishery Management Council (August 2004) Bering Sea Aleutian Islands Crab Fisheries Final Environmental Impact Statement/Regulatory Impact Review/Initial Regulatory Flexibility Analysis/Social Impact Assessment.

National Marine Fisheries Service (October 1, 2004) Letter to BSAI Crab Buyback Referendum Voters, available at: [http://www.fakr.noaa.gov/sustainablefisheries/crab/buyback/second\\_ballottransltr1004.pdf](http://www.fakr.noaa.gov/sustainablefisheries/crab/buyback/second_ballottransltr1004.pdf).

North Pacific Fishery Management Council (NPFMC). 1998. Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner crabs. North Pacific Fishery Management Council, Anchorage.

Zheng, J. and G.H. Kruse. 1999. Overview of population dynamics and recommended harvest strategy for Tanner crabs in the eastern Bering Sea. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 5J99-04, Juneau.

## **7. List of Preparers and Persons Consulted**

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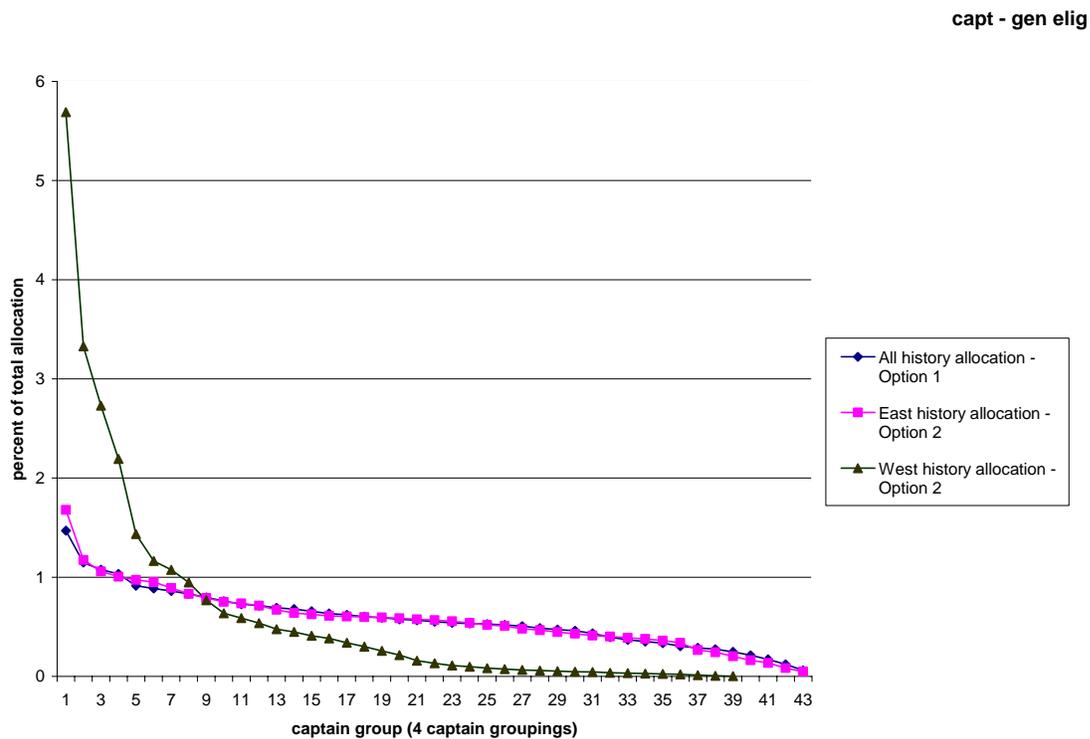
## Appendix 1

### Captain allocations using general history in the *C. bairdi* fishery for eligibility.

In the analysis, eligibility for an allocation under Option 2 requires a captain to meet the requirement for catch in three qualifying years in the area of the fishery (i.e., east or west). As an alternative, eligibility could be based on having *C. bairdi* catch from any location during three of the qualifying years. Figure 1 shows the allocations to captains, using a general eligibility requirement for option 2. Table 1 shows simple statistics for the allocations to captains using general eligibility requirements for option 2.

**Table** Table 2 shows the number of allocations in excess of a 2.5 percent and 5 percent threshold, when general eligibility requirements are used for option 2.

Figure 1. Estimated allocations to captains - using general eligibility requirement.



Source: NPFMC Crab rationalization database (Version 1).

Table 1. Simple statistics for allocations to captains - using general eligibility requirements.

	<b>Number of allocations</b>	<b>Mean allocation</b>	<b>Median allocation</b>	<b>Average of four highest allocations</b>
All history allocations - Opt. 1	173	0.6	0.5	1.5
East history allocations - Opt. 2	173	0.6	0.6	1.7
West history allocation - Opt. 2	156	0.6	0.2	5.7

Source: NPFMC Crab rationalization database (Version 1).

Table 2. Number of captains allocations in excess of 2.5 percent and 5 percent thresholds - using general eligibility requirements.

<b>Allocation</b>	<b>Number of allocations greater than 5 percent</b>	<b>Number of allocations greater than 2.5 percent</b>
All history allocation - Opt. 1	0	0
East history allocation - Opt. 2	0	0
West history allocation - Opt. 2	2	14

Source: NPFMC Crab rationalization database (Version 1).